Vishwakarma Yojana: Phase VIII

DETAIL PROJECT REPORT ON

VISHWAKARMA YOJNA: VIII
AN APPROACH TOWARDS RURBANISATION
Village: Patosan
District: Banaskantha

Prepared By

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Year: 2020-21

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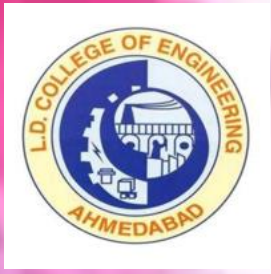

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CERTIFICATE

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

Detail Project Report for
PATOSAN Village, BANASKANTHA District
Under

Vishwakarma Yojana: Phase-VIII

In Partial fulfillment of the project offered by

GUJARAT TECHNOLOGICAL UNIVERSITY, CHANDKHEDA

During the academic year 2020-21.

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

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ABSTRACT

The Government of Gujarat has launched Vishwakarma Yojana (scheme) for development of villages by identifying the requirements of villages. Under this scheme, the villages are surveyed and this project was identified and selected for implementation. Rurbanization is to bring peace of mind to the villagers by providing them the basic amenities required and still keeping the village soul intact. This project gives one new idea for Development of rural villages. Also gives procedure how they fulfil requirement of the villages. Now a day people are moving from rural to urban area due to lack of basic amenities. With the help of this Yojana we can bring awareness about the thing which are not available at rural areas. So, this helps to provide better solution for the available problems in rural area like drinking water, Drainage facility road network etc.

Patosan village is in Palanpur taluka and Banaskantha district. In Patosan village people are engaged with the agriculture and Business activity. In this village some educated people went to Palanpur for work and some people go for labours work and for other purpose. The main source of water is bore wall and in the village.

In this village water supply system is good but drainage and sewer network is Completed. Also, the door-to-door collection in this village is not good. In some place in the village the waste is very high level. Transportation facilities is not that much good. There is no any toilet block are available but even after some of the Clean India mission the toilet blocks and water closets have been made. For the survey of villager, we collect some basic data about village like population of the village, political background of village, Area of Village. Then we will Compare village Facilities with Ideal and smart village.

In Patosan village Based on gap analysis and condition of existing facilities based on the interviews, we have proposed design and estimation of some required designs. The details have been expressed in details in the report.

Key Words - Rurbanization, Sustainable development, Rural soul, Urban amenities, Development of infrastructure, physical infrastructure, Renewable Energy.

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

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ABBREVIATION

SHORT NAME / SYMBOL	FULL NAME
MoRTH	Ministry of Road Transport and Highway
MoRD	Ministry of Rural Development
RCC	Reinforced Cement Concrete
PCC	Plain Cement Concrete
BM	Brick Masonry
CPWD	Central Public Work Department
IRC	Indian Road Congress

1. CHAPTER 1 Ideal Village Visit of Punsari

- Background & Study Area Location
- Concept: Ideal Village, Normal Village
- Objectives
- Example / Live Case studies of ideal village of India/Gujarat
- The Idea of a model/Smart Village1.1 Background & Study Area Location
- Concept: Ideal Village, Normal Village
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- Example / Live Case studies of ideal village of India/Gujarat
- The Idea of a model/Smart Village
- Ancient History Civil / Electrical concept about Indian Village /Foreign Countries Perspective and its Development
- Detail study (Socio economic, physical, demographic and infrastructure details) of Ideal village / Smart Village with photograph
- SWOT analysis of Ideal village / Smart Village Future prospects of village Benefits of the visits of Ideal village / Smart Village

1.1 Background & Study Area Location

Punsari village is one of the ideal village of Gujarat.It is located at Sabarkantha district.It is about 80 km from Gandhinagar. Punsari is an ideal village has good system of sanitation and drainage. Because filth and rubbish of the village is regularly removed away into the compost pits. An ideal village has excellent drains in order that the dirty water of the village is correctly drained away.

- Dwelling-houses:

The dwelling-house in a perfect village are very neat and clean. The dwellers of those 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.

- Food and fodder:

The villagers grow food for themselves and fodder for his or her cattle. They eat fresh and healthy food. They grow good grass for fodder and also leave sufficient land for pasture.

- Drinking water:

  An ideal village should have good supply of beverage . There are enough tube-wells in an ideal village. There are separate ponds for men and cattle.

- Agriculture and Industry:

  People of a perfect village are good farmers and good artisans. They grow food crops, commercial crops and oil-seeds. They take up improved method of farming. They do all types of home-industry including spinning and weaving.

- Educational facilities:

  There are Primary schools, High schools and craft schools in a perfect village. Primary education is free and compulsory.

- Clinical facilities:

  In a perfect village, there are clinical facilities for men and therefore the livestock . Hence, there are dispensaries and veterinary dispensaries.

- Other facilities:

  We can find post-office, library , playground, gymnasium and club-house there

- People:

  People of a perfect village are very neat and clean. They are quite enlightened. They have a sense of discipline and co-operation. They have a spirit of service and sacrifice. They follow the principles of plain living and high thinking. They are never idle. They are active and cheerful. Constant labour is their chief motto.

1.2 Concept: Ideal Village, Normal Village

- Prior to making Smart Village, It should become SIMPLE village first with basic facilities,

- It has been 70 years since our independence, great minds are working in Indian Politics to progress India in forward direction. But villages,towns and cities lack basic amenities. I have simple solution for Political leaders who can develop India a bit like this snap, if they need determination to satisfy their duties as we neutralize our roles.

- It means that our great minds at work have failed to do their duties, here is common man 's idea on how to develop India,

- Each village should have following 5 basic amenities in 5 years,

- Roads
- Electricity
- water
- hospitals
- schools
- In entire country, rule should be passed in such how that, in annually one mentioned amenity should be completed across country altogether villages (i assume one year is more than enough to construct any of the above mentioned facility). something like this, year 1- Roads, Year 2 – Electricity then on. By the top of every year, villagers and their local politician should check this faraway from their list. if they don 't do it then they should not complain about it in the future. both people and politician should be responsible in constructing Simple India

1.3 Objectives

- Being a person of vision, Mahatma Gandhiji felt that the reconstruction of India lies within the overall development of the villages.

- Since India lives in villages, aside from his great concepts like swadeshi, Khadi and little cottage industries for his dreamy ideal village, Gandhiji felt that an honest and healthy environment which encompasses health,

sanitation and good, healthy food for the malnourished, underprivileged countrymen of his, is a must and hence he thought of dietary solutions, through his idea and observation of good food and diet.

- Food is a matter of choice. We usually eat what we feel is best suited to own an adequate supply of energy and keep us healthy. But it rarely goes beyond that. For Gandhi, food was not something that just satiated hunger.

- It was an integral a part of shaping the human consciousness which is why he administered variety of experiments to search out the proper diet. Though Gandhi is related to vegetarianism and milk, he actually abstained from milk for a period of six years, considering it an animal material

- **Example / Live Case studies of ideal village of India/Gujarat Village of Millionaires.**

- Hiware Bazar, Maharashtra....
- Asia's Cleanest Village. MAWLYNNONG, MEGHALAYA. ...
- Ideal Village of Gujarat. PUNSARI, GUJARAT. ...
- Solar Village of Bihar. ...
- An Indian village that distributes sweets when a girl is born. ...
- Village of scarecrows. ...
- The Twin Village of Kerala. ...

1.4 The Idea of a model/SmartVillage

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

- Schooling - smart class rooms can improve the quality of education by providing access to a large amount of educational resources. I would also be possible to use remote teaching methods.

- Health care - Improving information available on the availability, location and cost of various types of health care. Experts can be consulted online.

- Agriculture - Provide information to farmers on the types of crop that can fetch them returns, by ensuring that there is no glut of one product and shortage of another. High resolution maps of soil types can help economic use of appropriate fertilizers

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

Over recent decades, people 's (rural and urban) communities face numerous social and economic changes and challenges. Some of those challenges are increasingly addressed through the lenses of technological developments and digitalization. In this paper, we've made a review of already existing practices while that concentrate on the prevailing implementations of the Smart Village concept and thus the importance of digital transformation for rural areas. We give special attention to EU policies that we are using as an already existing framework for understanding our own forthcoming examples. We have shown the parallels between the findings and insights from different regions and made an evaluation of presented practices. Our main argument stems from our own previous experiences and experiences of other research approaches, and is grounded on the argument that rural areas aren't uniform, and that smart rural development has got to be applied together with place-based approach. We present the cases of Slovenian pilot practices and support our argument by proposing the Fab Village concept In India also as other developing countries the economic development strategies failed which turn our attention to Rural Development because the main objective of development. The lessons of the event experiences were as follows

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

- Economic growth had only selective impact which benefited the relatively developed areas and the relatively better off people;

- The percolation theory of growth had failed;If development is not viewed only as growth, then the creation of employment opportunities and deliberate distributive measures were required to achieve the objective of devel oping the forgotten majority‘ of rural poor in developing countries,

- Development should cover larger dimensions of the quality of life‘ of the vast majority of the people.The realization that the traditional method of agriculture in the developing countries could be transformed through modern technology and modern farming practices were other aspects of the rethinking ondevelopment.
  A major consequence of all these _new truths‘ of the development experience is current concern of _Rural Development‘. It occupied the central place within the development dialogue of the planet Bank, which became the champion of the cause

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

- **VILLAGE LOCATION:-**

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

Figure 1: VILLAGE MAP OF PUNSARI (GUJARAT)

Small towns in India are during a desperate need for better infrastructure which may boost the local economy and help improve the standard of life. While many big cities have made progress in recent years, the tiny towns of India still lag behind.There are many challenges that these places face including poor road connectivity, primary healthcare system, educational infrastructure and affordable housing.

- Waste management system:

- If Prime Minister Narendra Modi's Clean India Campaign has to succeed, then the small towns of India will need an efficient waste management system.This is a key infrastructure required to improves anitation and preventout break of diseases .Atpresent, wastes from households are mostly disposed in city outskirts by municipalities. There is an urgent need to set up recycling facilities as a lot of times the waste often ends up in rivers polluting them. Also, drainage facilities are a serious problem with most towns getting flooded during themonsoons.

- Power:

- The government has electrified over 7,000 villages in 2015-16 which stands 37 per cent higher than the previous three years. But this might not necessarily mean that each one houses within the villages have access to electricity. This is because it takes time to line up the infrastructure like transformers and power lines needed to distribute the electricity to each house. According to a study, the delay in actual electrification ranged from two years (in the case of Jharkhand and Bihar, which saw a recent wave of electrification) to more than 25 years in Odisha and about 15 years in the case Madhya Pradesh and Uttar Pradesh.

- Roads:

- There is a positive relationship between connectivity and development in smaller towns and villages in India. With better roads and highways, there are often a far better flow of business, trade and communication which will eventually enhance growth. Mountainous areas and remote villages are stop from the network of roads, which require to be connected. The

government has allocated thousands of crores for building a robust transport network which will link different cities and little towns with regional hubs. However, several projects across the country have seen slow progress over the years severely impacting the economic progress of the tiny towns.

- Bridges:

  - India has had a bad history of bridges collapsing in both rural and urban areas, endangering people's lives because of weak construction. On March 16, Vivekananda flyover in Kolkata collapsed killing 27 people and injuring 80. Similarlly, on August 3, Mahad bridge on Mumbai-Goa highway collapsed. In the Gujarat town of Junagadh, earlier this year, another bridge had collapsed thanks to poor materials that were utilized in its construction. In smaller towns with rivers, bridges are very crucial for children and workers to travel to school or their work site.

- Schools:

  - Many small towns lack basic educational infrastructure. Most schools do not have proper toilets, electricity, and proper buildings with roofs. There is also lack of drinking water. The condition of state schools also are not satisfactory, accordingto many reports.

- Hospitals:

  - The number of hospitals and medical dispensaries need to be pumped up in rural India. The government hospitals in most parts of the country are not up to the mark and medicines not readily available. According to a study, rural public health facilities have a hard time ensuring a regular presence of medical professionals, trained doctors and pharmacists. In addition, there is a high level of absenteeism of those already employed

- Affordable Housing:

  - Owning a home is an aspiration for tons of bourgeoisie Indians but the value of shopping for a property is extremely high. Banks offer home loans for purchase, which has got to be paid back in monthly instalments. High EMI rates and low earnings builds pressure on the people. this government

has acknowledged this problem and announced the "Housing for All by 2022" scheme. However, considering this market conditions, many industry experts call it a far-fetched idea. In an interview to the Business Insider, global land company JLL India's country head Anuj Puri told the Business Insider said that creating 2 crore urban houses and 4 crore rural houses available may be a huge undertaking in itself, and can require not only sustained government interest and investment but also substantial private sector investment.

- Telecom:

- According to the Ministry of Telecommunications, India is that the fastest growing telecom market with progressive reforms and policies. However, India is nowhere on the brink of China and USA in terms of network connectivity thanks to low penetration in rural areas thanks to lack of telecom infrastructure. variety of the weaknesses highlighted within the same government report are lack of indigenous telecom manufacturing and low broadband reach in rural areas.

- Water Supply:

- Among the 122 countries that are ranked in quality of portable water, India falls at 120, despite having 4 per cent of the world's water resources. there's inadequate piped water system across rural India and thus the homes that receive water are mostly untreated. During years of bad monsoon, crops suffer thanks to the shortage of irrigation facilities. By 2017, the govt. aims to bring piped water system to a minimum of fifty per cent of households.

- Sanitation Facilities:

- Open defecation could also be a serious issue in rural and semi-rural India despite the varied governmental schemes and awareness programmers.
- According to an United Nations report in 2010, out of an entire of two .5 billion people worldwide that defecate openly, 665 million belong to India. And what's more alarming is that the undeniable fact that some 88 per cent of diarrheal deaths worldwide are thanks to unsafe water, inadequate sanitation and poor hygiene. "Improving access to safe beverage, adequate

sanitation and promoting good hygiene are key components in preventing diarrhea," the report said.

We went in Punsari and visited all physical and social infrastructure of village. there's numerous facility. All facility is depicted below through photographs

Fig 2: Ideal Village Punsari

FIG.3: GOVT. PRIMARY SCHOOL

FIG.4: DIGITAL IT SECTION

FIG.5: Primary School PUNSARI

FIG.6: BIRD HOUSE PUNSARI

G.9: OLD WATER TANK, PUNSARI

FIG.10: CLINICAL FACILITY

FIG.11: POST OFFICE, PUNSARI

FIG.12: AUTOMATED FLOOR WHEEL

FIG.13: AANGANBADI AREA, PUNSARI

FIG.14: PUNSARI BUS STAND

1.7 SWOT analysis of Ideal village / Smart Village

Table 1.1: All Amenities in ideal village Punsari		
Drinking water Facilities	Individual toilets	Public library
Rural roads	Playgrounds	ater treatment Plant
Burial ground	Animal ground	Shopping center
Community hall	Open air theater	Village tank/lake

Citizen service center	Skill development center	eetlight (Solar system)
Waterharvesting	Roads to farms	ctricity generation plant

The different amenities & activities can be divided into three types:

- Amenities/Activities to be provided under MoRDMinistry of Rural Development) Schemes (Mandatory),

- Amenities to be provided under Schemes of other Ministries (non-MoRD Schemes),
- Add-on Projects (Revenue earning, people-centered projects).

Table 1.2: MoRD Schemes

MoRD Schemes	Non-MoRD Schemes	Add-on Projects
Water and Sewerage	Village Street Lighting	Village linked tourism
Construction and maintenance of Village Streets	Telecom	Integrated Rural Hub, Rural Market.
Drainage	Electricity generation	Agri – Common Services Centre and Warehousing.
Solid Waste Management		Any other rural – economy based project.
Skill Development & Economical ability		

1.8 Resources available in ideal village:

Though each village will have its own individual topical solution, the following points are essential:

- Identify people's needs and priorities
- Define activities that can mobilize the complete community
- Use resources from running government schemes
- Repair and renovate existing infrastructure
- Strengthen the Gram Panchayat
- Promote transparency and accountability

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

Table 1.3: Population detail of village

	2001	2011
MALE	2221	3246
FEMALE	2456	2798
TOTAL	4677	6044

1.9 Economic Profile:

- Unless one is talking about Punsari - a village of 6,000 in Sabarkantha district, some 90km (56 miles) from the western city of Ahmedabad in Gujarat state.

- Punsari has been dubbed a "model village" by the state government and its young headman, Himanshu Patel, proudly states that his village offers "the amenities of a city but the spirit of a village".

- The people, who are businessmen, get more opportunity here because the area is workers or the officers in the Talod city or in Punsari area other surrounding small village ‘s peoples are come in Punsari because there is good employments opportunity. This people preferred to live in Punsari because there is many facilities is available. The basic economic activity is farming that people are also live in Punsari because there is better facility for his children like primary school, higher secondary school, skill development center, public library and public health center etc. **Table 1.4: Economic Status**

	PERCENTAGE (%)
FARMER	85.00
JOB	12.00
OTHER	03.00

1.10 Social Scenario:

- Punsari may be a village located in Sabarkantha district within the state of Gujarat, India Punsari is taken into account as India's smartest village.

- The village is found at about 80km from the capital , Gandhinagar. Punsari is 20km from Parvati Hills. Parvati Hills is that the largest table top land of India.The village follows the Panchayati raj system. The village extent is about 65 km . The land in use of agriculture is 6 hectares . The main non farming activity is dairy during this village . The village has undergone a change under the panchayat. There has been use of latest and advanced technology in education. This village has wi-fi connection for all people. Efforts are made for the empowerment of girls and increasing security within the village. Some of the facilities provided by the panchayat include local mineral water supply, sewer & drainage project, a healthcare centre, banking facilities and toll-free complaint reception service. Consequently, Punsari received the award of being the simplest Gram Panchayat in Gujarat.

- The village's model has been appreciated by delegates from Nairobi and they are keen to replicate this in Kenyan villages.

Table 1.5: Literacy profile

Literacy profile of Punsari	
	Percentage (%)
MALE	84.84
FEMALE	53.06
TOTAL	69.38

1.11 Infrastructure facilities (All types): -

- **Main source of drinking water:**
  - Bore Well -512
  - Dug Well -13
  - Hand Pump –3
  - Bottled Water – 4 Rs. per 20Lit.
  - Water Tank – 100 Rs. per 1000Lit.

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

- **Transport facility :**
  - Railway Station – 20 km far(Talod)
  - Bus Station – 8 to 10 Bus Daily
  - Local Transportation – Auto and Chhakara

- **Sanitation facility:**
  - Public Latrine Blocks : 4 Unit (Mobile Toilet)
  - Solid and Liquid Waste Disposal System
  - Waste Collection Facilities

- **Health facilities:**
  - Public Health Center
  - Medical Center
  - Nursing Homes
  - Private Clinic

➢ **Educational Facilities:**

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

➢ **Socio – Culture Facilities:**

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

➢ **Sustainable / Green Infrastructure Facilities:**

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

➢ **Other Facilities:**

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

1.12 SWOT Analysis

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

- **Strength of Punsari village:**

- Worldwide Recognition as model and ideal, Guide facility for visitors, 24 hours Wi-Fi facilities, Central sound system, Woman empowerment (Sakhi mandal), 24 X 7 Electricity available, R.C.C. road in village, Mobile Library, Mobile Toilet Block, Skill Development Centre, Water Treatment plant, Watertan

- **Weakness of Punsari village:**

- Conventional method of agricultural system, Lack of maintenance of some existing facilities

- **Opportunity in Punsari village:**

- Opportunities can be entailed at Women Empowerment, Skill Development Centre (Sewing Operating, Basic Computer Course, Beauty parlor & Garment Sector), Private Nursing Homes, Shopping Shops

- **Threat of Punsari village:**

- Illiteracy remains as main threat even after global recognition as ideal village.

- **Future prospects of village**

- Many designs and development can be done such as Rain Water harvesting System In village**,** use of waste Water, For Agriculture and Domestic Purpose, Drainage facilities

- **Benefits of the visits of Ideal village / Smart Village**

- The main benefit of visiting an ideal village is to learn mechanism of developing and sustaining basic and modern amenities in other villages. The benefits which can be availed from the visits of the Ideal village are as enlisted below,
- Well Maintain Sanitation Facilities, Cleanliness of Village, Good connectivity of MDR and State highway, Individual and Mobile Toilet block, Providing Drinking water, Parks and Play ground, Burial Ground, Animal shelters, Community Harvesting Ground, Open-air Theater, Skill Development and Public Library.

2. CHAPTER 2 Patosan Village Literature Review

Introduction: Urban &Rural

Table 2.1: Classifying Urban and Rural

Basis for Comparison	Urban	Rural
Meaning	A settlement where the population is very high and has the features of a built environment, is known as urban.	An area located in the outskirts, is known as rural.
Includes	Cities and towns	Villages and hamlet
Life	Fast and complicated	Simple and relaxed
Environment	Greater isolation from nature.	Direct contact with nature.
Associated with	Non-agricultural work, i.e. trade, commerce or provision of services.	Agriculture and livestock.
Population size	Densely populated	Sparsely populated
Development	Planned settlement exists in urban areas, that are developed according to the process of urbanization and industrialization.	Developed randomly, based on availability of natural vegetation and fauna in the area.
Social mobility	Highly intensive	Less intensive
Division of labor	Always present at the time of job allotment.	No such division.

Ancient Villages / Different Definition of: Rural UrbanVillages

- Mahatma Gandhi is usually quoted as having said: ―Real India lives in its villages.‖ the very fact that within the early decades of the 20th century, India 's urban segment constituted only 11 per cent of the entire population gave strength to his argument. It was the villages during which 89 per cent of the population lived. That made India an agricultural country.

- The development of Village India, for Gandhi, was the development of India. Illiteracy, ignorance, and poverty characterized the vast population of rural India. Gandhi organized mass movements to draw attention to the problems of the rural people, and also to involve the peasants in the freedom struggle. Social scientists also became interested in studying rural problems, particularly the deteriorating rural economy.

Scenario: Rural / Urban India & Gujarat as per Census 2011 and latest population Growth

Table 2.2: Census Details

	2001	2011
MALE	1700	1947
FEMALE	1600	1747
TOTAL	3222	3694

- **Rural Issues &Concerns**

- The growing rural discontent also worried British Government. It felt the necessity to research the actually existing conditions. S.J. Patel, in his book Agricultural Laborers in Modern India and Pakistan, talks about the expansion of village studies: With the top of the primary war , the beginnings of an agrarian crisis was accompanied by the entry of peasants into the political arena, as exemplified during the Champaran and Kaira campaigns led by Gandhiji. As a result, the cultivator of the soil began to draw in considerable attention from students of Indian society.

- G. Keatings and Harold Mann in Bombay, Gilbert Slater in Madras, and E.V. Lucas within the Punjab initiated intensive studies of particular villages and general agricultural problems.

- The results of those investigations evoked great interest and stressed the need for still further study. Economists and social anthropologists later joined the movement of village studies. In the 1950s, several studies of

individual villages were undertaken. In 1955, four major publications came out, three of which were anthologies of articles written by social anthropologists/sociologists on the villages studied by them, and the fourth one was a full-length monograph – the very first and by an Indian scientist .

Various Measures for Rural Development

Pursuing competitiveness means improving the economic performance of agriculture by, for example, reducing production costs, increasing the economic size of holdings, promoting innovation and more orientation towards the market. Increasing competitiveness must also take advantage of the opportunities offered through diversification of economic activities, a focus on food quality and safety, value-added products that consumers demand, including non-food products and biomass production, and on cleaner and more environmentally friendly production techniques.

❖ **Under this axis, measures fall into four groups:**

- Human resources
- Physical capital
- Food quality
- Transitional measures for the new Member States

- Human resources: young farmers, early retirement, training and knowledge, farm advisory services

- A series of measures target human resources within and linked to the agriculture and forestry sectors.

- Vocational training and knowledge actions are available to all or any adult persons handling agricultural, food and forestry matters so as to supply an appropriate level of technical and economic expertise covering issues under both the agricultural and forestry competitiveness and therefore the land management and environmental objectives.

- Support is provided to young farmers (under 40 years of age) to facilitate their initial establishment and the structural adjustment of their farms after their initial setting up.

- With the new Regulation, the setting-up support are going to be made conditional to the establishment of a business plan which can be an instrument to make sure over time the event of the activities of the new farm.

Various infrastructure & guidelines/Norms for Villages for the provisions of different infrastructure facilities

❖ **Study area land use details:**

Table 2.3: Land use Detail

Description	Area
Area of Village (Approx.)	2485 Hector
Forest Area	-
Agricultural Area	1414.14 Hector

Sr. No.	Govt. Building	Condition
1.	Gram Panchayt	Good
2.	Post Office	No
3.	Bus Station	No
4.	Sub heath center	No
5.	Primary school	Good
6.	Secondary and higher secondary school	Good

Table 2.4: Heath facilities

Sr. No.	Description	Availability or nearby distance
1.	Sub health center	1 Nos.
2.	Govt. hospital	No
3.	Private Clinic	2 Nos.
4.	Surgical doctor	No
5.	Blood bank	20km away (Palanpur)
6.	Ambulance facilities (108)	No.
7.	Medical shop	1 Nos.
8.	Aarush health facilities	Available

Importance in rural context

Rural development may be a topic that's pretty easy to know but hard to implement. It focuses upon the upliftment and development of the sections of rural economies, that have grave poverty issues and effectively aims at developing their productivity. It also emphasizes the necessity to deal with various pressing problems with village economies that hinder growth and improve these areas. Some areas that require urgent attention for Rural Development in India are:

- Public health and sanitation
- Literacy
- Female empowerment
- Enforcement of law and order
- Land reforms
- Infrastructure development like irrigation, electricity, etc.
- Availability of credit
- Eradication of poverty

Sustainable Village Development concept

- The rural economy is an example of an agrarian economy. Although farming and agriculture are one among the foremost important primary activities, the matter lies within the incontrovertible fact that they share in the GDP of the agriculture sector is on a continuing decline. At the same time, about two-thirds of India 's population depends on agriculture.

- As a result, the productivity isn't up to the mark, with conditions only getting worse. Rural development is a comprehensive term. It essentially focuses on action for the event of areas outside the mainstream urban financial system. we should consider what sort of rural development is required because modernization of village results in urbanization and village environment disappears.

➢ **Other Projects / Schemes**

Table 2.5: Socio-cultural facilities

Sr. No.	Facilities	Information/ Details
1.	Community hall (without TV)	0 Nos.
2.	Public library	Not available
3.	Public garden	Not available
4.	Village pond	2 Nos
5.	Recreational center	Unavailable
6.	Birth & death registration office	E-gram

Sr. No.	Facilities	Information/ Details
1.	Bank & ATM	No
2.	General market	1 Nos.
3.	Milk Co-Operative society	1 Nos.
4.	Mahila Mandal	No.
5.	Post office	Yes
6.	Youth Club	No

Table 11: Other Facilities

Ancient / Existing Electrical concept Literature Review for village

➢ **David Fresh water (2000):**

- Sustainable development is generally discussed in terms of environmental considerations, but from a rural community perspective, sustainable development must address how the people of the community generate the income to maintain their rural lifestyle. In those instances where employments considered as part of sustainability discussions, it is too often thought of in static terms jobs that will last. But the reality of both modern rural and urban life is that economic conditions rapidly change.While market signals alone can, in theory , provide the knowledge and therefore the conditions for this sort of dynamic process, the argument of the paper is that the character of rural areas makes it unlikely for markets alone to permit sustainable employment

➢ **ZHAO ZHIFENG (2009):**

- The fast urbanization has become already a main characteristic of socio-economic transition in China. This paper points out the characteristics and therefore the problems of villages in Beijing metropolitan region. The paper also explores the role of villages within the metropolitan region within the process of urbanization. As a representative case, the Village System Planning of adjusting District in Beijing is presented during this paper. According to the research on the economic and therefore the spatial typologies of villages in Changing District, the villages are classified to 3 categories within the planning. In conclusion, by the guideline of categorization, the Village System Planning intends to solve those problems of villages under the background of fast urbanization so as to realize the sustainable development of rural area.

➢ Dr. Milind Kulkarni (2010):

- In India majority of the population still lives in villages. A lot of labor must be wiped out making the villages clean. There are different aspects of unpolluted village such as: water system, sanitation, indoor air quality, solid waste management and renewable energy etc. All these aspects have different alternatives with the associated merits and demerits. In some aspects such as water supply, considerable work is done whereas in some areas like sanitation lot of work is required to be done. We can learn lot of lessons supported success and failure in adopting different alternatives.

Keeping in-tuned with technology clean village projects should integrate technology and digital design, which can make the village not only clean but also smart. The paper discusses all these aspects with reference to Maharashtra and India. This discussion plans to give important inputs and alternatives to policy makers so that they can redirect and reformulate the policy. Engineering students can design and implement projects of unpolluted and smart village which can help in their skill development. At the top paper gives recommendations for effective making of unpolluted and Smart Village.

- N. Viswanadham, Sowmya Vedula (2010):

- In this paper, we describe the ecosystem for a village then map an integrated design procedure for building a sensible village. We define a sensible Village as a bundle of services which are delivered to its residents and businesses in an efficient and efficient manner. Dozens of services including construction, farming, electricity, heath care, water, retail, manufacturing and logistics are needed in building a sensible village. Computing, communication and information technologies play a serious role in design, delivery and monitoring of the services. All the techniques and technologies needed to create a sensible village

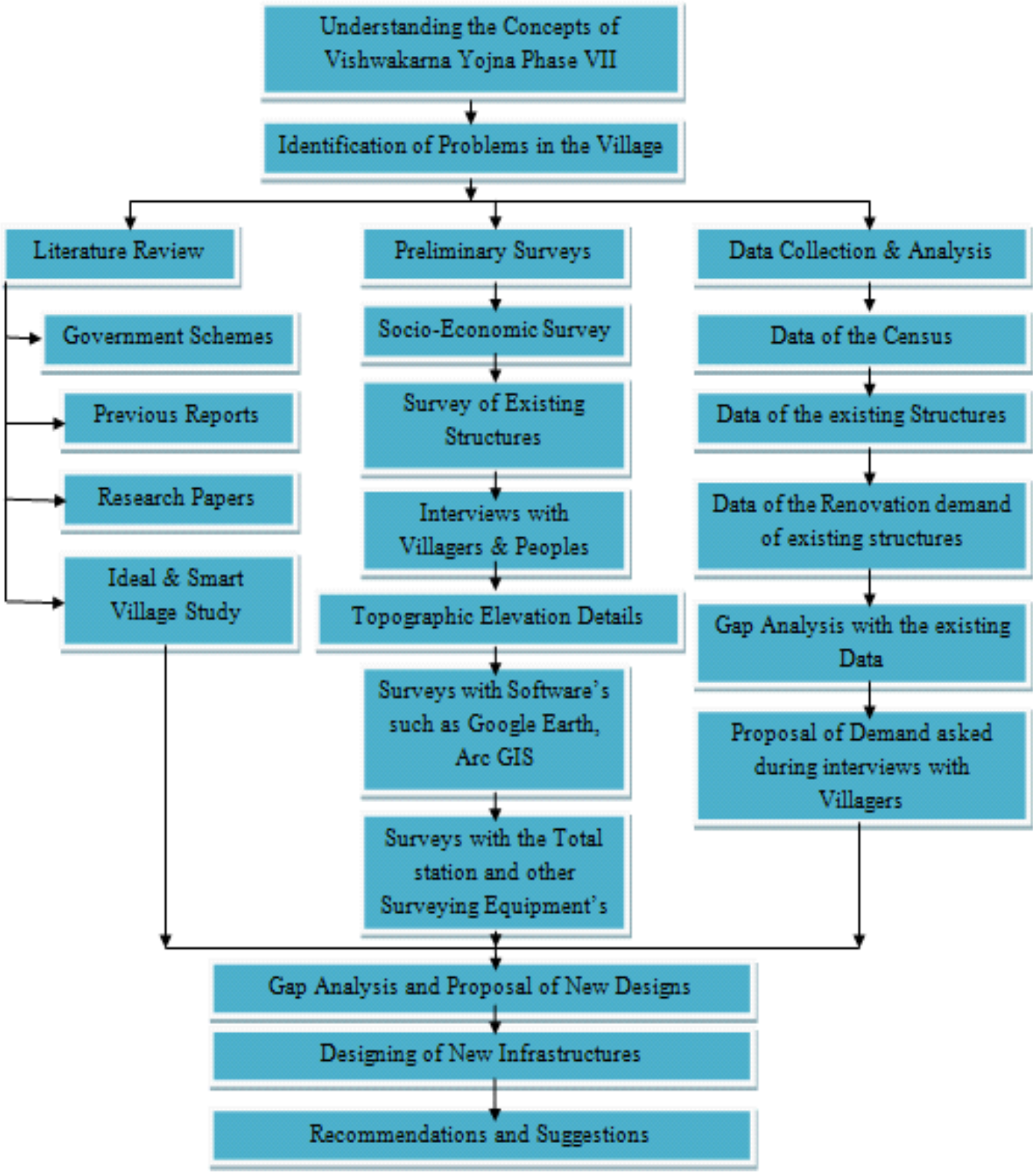


Fig. 15: Methodology of the framework

3. CHAPTER 3 Smart(Cities/Village) Concept Idea and its Visit

- Concepts, Definitions and Practices
- Bench Marks-Vision-Goals, Standards and Performance Measurement Indicators
- Technological Options
- Road Map and Safe Guards
- Issues &Challenges
- Smart Infrastructure
- Cyber Security or any other concept
- District Cooling and Heating / Green Building
- Strategic Options for Fast Development
- India's Urban Water and Sanitation Challenges and Role of Indigenous Technologies
- Initiatives in village development by local self-government
- Smart Initiatives by District Municipal Corporation
- Any Projects contributed working by Government / NGO / Other Digital Country concept
- How to implement other Countries smart villages projects in Indian village contexts

Concepts, Definitions and practice

Introduction

- Over 68 percent of India's population lives in rural areas. There has been a gradual increase in migration from villages to cities primarily for livelihood opportunities, better education, and healthcare facilities, among others.

- The rising burden on urban cities thanks to migration emphasizes the necessity to rework villages in order that they will meet the critical also as aspirational needs of the villagers.

- This can be done using innovative technologies and reworking the service delivery models for villages. Transformed villages are called Smart Villages.

- While the phrase ‗Smart Village has become a buzzword in policy and rural development discussion, there's no universal definition of such villages. Two things that are common to all or any Smart Villages are the extensive use of technology and integration of several key interventions in infrastructure and repair delivery.

- It‘s an integrated approach of delivering access to skills and quality basic services including education, e-health, 24x7 power, safe food, among others. There are numerous initiatives supported by the govt , and spearheaded and supported by corporate social responsibility (CSR) initiatives and philanthropic institutions.

- The Government of India launched the Shyama Prasad Mukherji Rurban Mission (SPMRM) in 2016, with the target to spur social, economic and infrastructural development in rural areas.

- The mission aims at making villages smart and growth centers of the state . In its first phase, it targeted to develop a cluster of 300 Smart Villages over subsequent three years across the country.

- Sansad Adarsh Gram Yojana, which envisages integrated development of selected villages was another step taken by government during

this direction. Smart Village may be a concept adopted by national, state and native governments of India, as an initiative focused on holistic rural development

Concept

In 1992, "Smart Growth" emerged as a concept aimed at suggesting an alternative paradigm to the urban sprawl, detached housing and dependence on automobiles. This was primarily driven by planners, architects, community activists, and historic preservationists. The concept proposed that the concentration of growth in a city takes place in compact (mixed land-use and compact design) and walk able urban centers (range of transportation and housing options), where the community participates in making development decisions that are fair, predictable and cost effective (sense of community living). Creative ways of urban planning and design emerged during this time.

What Is Smart City/ Village ?

A Smart City has basic infrastructure, uses 'smart' solutions to make infrastructure and services better, and relies on Area based development.In the imagination of any city dweller in India, the picture of a Smart City contains a wish list of infrastructure and services that describes his or her level of aspiration. To provide for the aspirations and needs of the citizens, urban planners ideally aim at developing the entire urban eco-system, which is represented by the four pillars of comprehensive development

Bench Marks-Vision-Goals, Standards and Performance Measurement Indicators

- **Bench Marks:**

- One of the key challenges in developing Smart Villages is ensuring their sustainability. This can only be addressed if we build our Smart Village strategy with entrepreneurship at its core.

- Thankfully, India has one of the most vibrant entrepreneurial ecosystem that is working towards addressing rural development challenges using innovative technologies and business models.

➢ **Vision & Goals:**

- While the government-led initiatives believe integration and convergence of the prevailing central and government schemes to develop these Smart Villages or clusters, the CSR initiatives are generally more innovative in terms of implementation and use of technologies. For example, smartphone-maker Nokia has launched a Smartpur project which aims to make a sustainable ecosystem where community members can leverage digital tools to bring efficiency in daily lives.

- It aims to bring transparency in governance, economic prosperity for households and ease of access to various government services and information.

➢ Standards:

- Gujarat State has been marching from ―Swarajya to Suraiya‖ through implementation of varied community and welfare schemes of rural development. 65% of India's population lives in its villages.

- The youth from villages are migrating to cities in search of labor as there are not any or less opportunities for employment in villages. They leave an honest quality lifetime of village for a poor quality of life in cities.

- This leads to slums & poor hygienic conditions of life for them in cities. We need to prevent this migration from villages to cities. For this we need to create work opportunities in villages & make villages SMART for our citizens.

➢ Performance Measurements:

- Human society is developing with rapid momentum and achieved various successes for creating its livelihood better.

- The civilization is witness for various changes associated with it is the development through different catalysts like industrial development, green revaluation, science and technology, etc.

- The present era is augmented on Information and Communication Technology. This technology has proved its potential in various sectors of development in urban and rural landscapes.

- Urban areas are seems to more inclined to simply accept and adopt Information and Communication Technology thanks to advantages of literacy and better infrastructure as compared to rural areas.

- Due to such suitable situations of urban landscapes good amount of success of this technology is visible within the sort of smart cities and better livelihood of residing citizenry . But the issues , consequences and opportunities in urban areas are different for effective utilization of data and Communication Technology for sustainable development of rural masses.

- developments and technologies which may be influential over subsequent 10-20 years.

- The driving motivation behind the concept on " Smart Village " is that the technology should acts as a catalyst for development, enabling education and native business opportunities, improving health and welfare, enhancing democratic engagement and overall enhancement of rural village dwellers.

- The " Smart Village " concept aims to understand its goal through providing policymakers with insightful, bottom–up analyses of the challenges of village development Various Parameters to be used as a bench mark.

➢ Various Parameters to be used as a bench mark.

Table 3.1: Various parameters for design amenities

Sr.No.	Parameters
1.	Transport
2.	Spatial Planning
3.	Water supply
4.	Sewerage & sanitation
5.	Solid Waste Management
6.	Storm water drainage
7.	Electricity
8.	WIFI Connectivity
9.	Telephone
10.	Heath care Facilities
11.	Education
11(A)	Pre Primary To Secondary School
11(B)	Higher Education
12.	Fire Fighting
13.	Others

- **Technological options**
- Various Technological Options to be implemented are as follows:
  - Real time traffic management
  - Effective Transportation Options

Solar Panel based energy conservation methods.

Fig. 16 Smart city: Perspective

Road Map and Safe Guards

- A smart city is defined as a city that engages its citizens and connects its infrastructure electronically. The Government is relentlessly striving for multi-dimensional growth and development of the State.

- Our vision is to form the State one among the primary three high-performing States in India by 2022 and therefore the best state within the country by 2029.

- Towards this, the govt had launched Janmabhoomi Maa Vooru program for realizing our Vision Swarnandhra Pradesh/ Sunrise Andhra Pradesh .

- We also found out seven development missions, five campaigns and five grids – power, beverage , gas, road connectivity and broadband connectivity. In this regard, we'd like to form every village and each ward Smart during which the community, individually and collectively, is empowered to require smart decisions using smart technologies with the support of smart manpower to be self-sufficient for his or her inclusive and sustainable development in 20 non-negotiable development commitments.
- We believe this is able to lead us to form the State of Andhra Pradesh Smart. At a time, when the planet is moving ahead from the 8 Millennium Development Goals paradigm to 17 Sustainable Development Goals, we must also move in sync with the global transformation initiative.

- We sincerely believe that our objective can't be achieved in totality without participation of people / community within the development process.

- Hence, Community-based organizations like Women's Self Help Groups (SHGs), voluntary organizations, federations, networks of CBOs, adolescent groups shall discuss the concept and ensure their cent percent contributions in this Endeavor for their Janmabhoomi.

- I encourage people's representatives, NRIs, Non Resident Villagers (NRVs), Corporate Houses, Film Community, Media, credible NGOs, eminent personalities, All India Officers and Group I Officers to join the movement as Partners to guide and facilitate the event process.

- I appeal to all or any individuals, Partners, community members, institutions to optimally utilize all existing local resources, maximize available services, improve service chains, adopt appropriate technologies, create learning platforms, improve existing knowledge and skills for collective actions to bring social change towards village and ward self-sufficiency and advance inclusive growth for the last mile

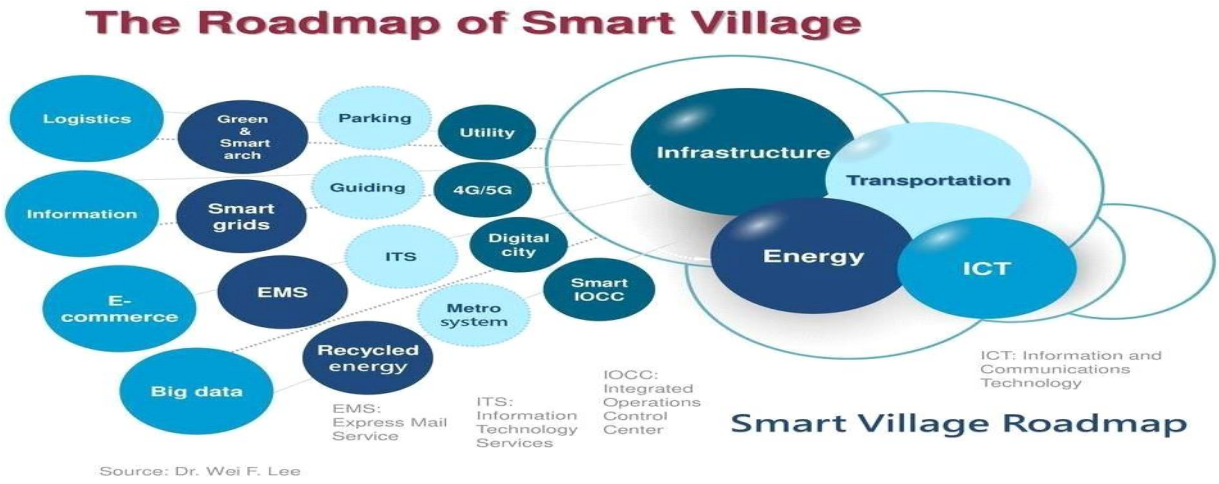


Fig. 17 : Road Map for Smart City & Guards

Issues &Challenges

- The village communities are little republics, having nearly everything that they want within themselves, and almost independent of any foreign relations. In the development process, there will be many changes in the demand and supply of various needs, as rural population will pass through the process of change.

- At present, one of the major challenges in India is growing population and rapid urbanization. This urban growth to certain extent is unavoidable, as the economic pursuits and aspirations of the population do change and evolve. This needs to be reversed and suitably managed through a balance between rural and urban quality of life.
- There is an urgent need for designing and developing ―Smart Village, which are in dependent in providing the services and employment and yet well connected to the rest of the world.

- Based on various programs undertaken taken by Central and state governments along with further technological initiatives, the Smart Village can achieve SMART infrastructure, SMART service delivery, SMART technology and innovation, SMART institutions along with optimal mobilization and utilization of available resources, leading to faster and more inclusive growth.

- A Smart Village will encompass a sustainable and inclusive development of all sections of the village community, so as they enjoy a high standard of living.

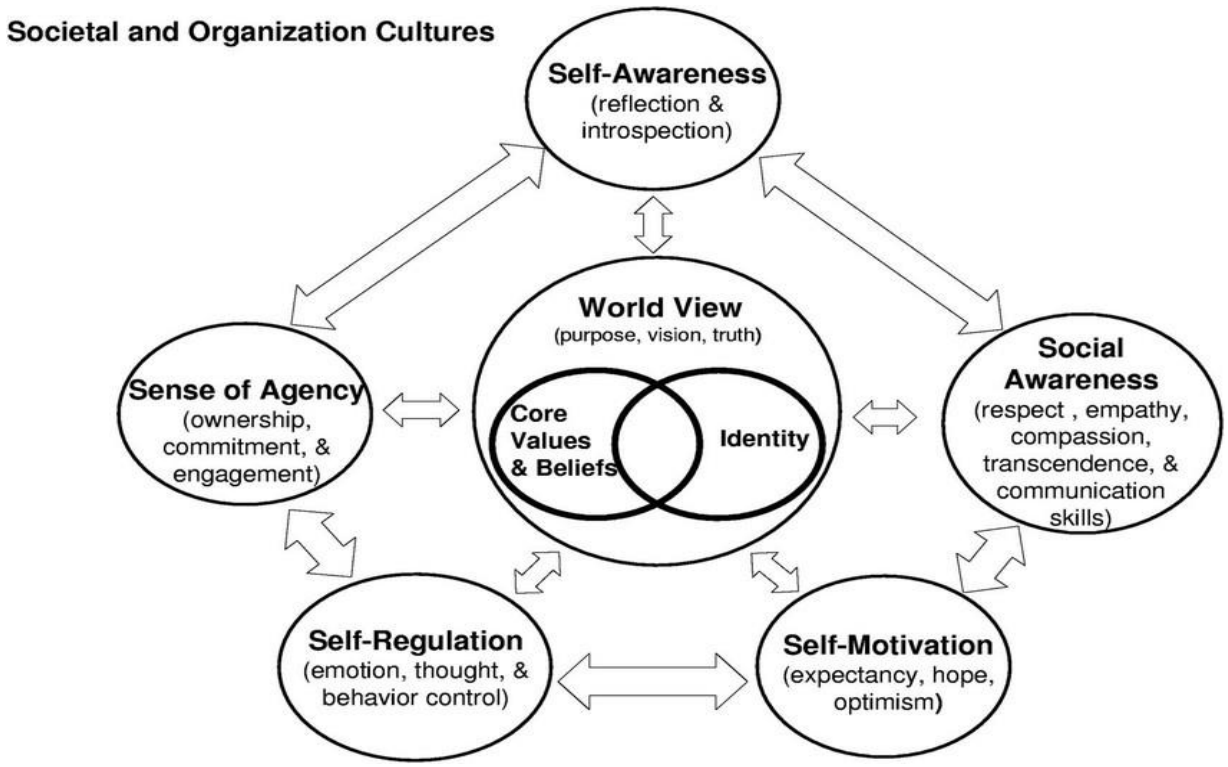


Fig 18: Development of Human Being

Smart Infrastructure

- We are entering the age of smart infrastructure. The abundance of digital technology combined with ever more intuitive software has transformed education, finance, health, the media and manufacturing. Applying digital technology and thinking to our physical assets too offers the potential to use our assets more intelligently, finding efficiencies and better meeting society needs.

- And smart infrastructure has come at a very opportune time. We have reached a state of infrastructure maturity especially in developed economies, where the value of new infrastructure is far outweighed by the value of existing infrastructure. In the UK, for example, new construction adds just 0.5% to the value of national infrastructure. There simply is not the scope to create a step change in capacity and services.

- Smart infrastructure enables us to get more from existing assets, increasing capacity without the need for new build solutions. It does this by improving our understanding of the way our assets are performing, enabling better decisions over how we design, operate and maintain them.

- The digital revolution has seen an innovation explosion in the consumer and manufacturing sectors. The infrastructure sector is ripe for disruptive innovation too.

- Here are six key ways it can happen:

  - New partners, new skills: Implementing smart infrastructure will require working with third party providers from other sectors. This will expose our industry to new skills and new ways of working from people unaccustomed to the constraints of the construction industry. There is also an opportunity in closer collaboration between competitors. Many companies are investing in design for manufacture and assembly (DFMA), bringing production line efficiencies to infrastructure development. Sharing prototypes and standard designs eliminates the need for companies to develop new components from scratch, and allows existing designs to be continuously optimized.

  - Measure, improve: If you digitise something you can measure it, and if you can measure it you can calibrate gains and losses, pinpointing when, where and how inefficiencies occur and how to Improve performance.

  - Better decisions faster and cheaper: Smart infrastructure provides unprecedented understanding of asset performance. This enables owners and operators to act and invest to maximum effect – from optimizing performance in real-time, to focused maintenance, with assets becoming increasingly efficient with time. Insights gained can be applied to the development of new assets.

- Bottom-up value: Adding a digital layer to our physical infrastructure reaps a new resource – data. This can be shared with customers and third-party companies which can manipulate and use it to solve problems, develop more personalized services and change their use of resources, adding value for themselves, infrastructure owners and operators alike. When Transport for London shared information on pick-up points for London cycle hire scheme, ordinary people took the initiative and created apps to help cyclists make the most of the service.

- Free up humans to do the clever stuff: Earlier this year a group from Mott MacDonald developed CREATE – a programme which automates many of the routine stages of design. First applied to water pumping stations, it cuts a job that typically takes 15 days to just 15 minutes. Human input is needed simply to check the final design. This development has huge potential to speed commodity design and free engineers for what they are best at – problem solving.

- Let our assets do the talking: Until now, there was no relationship between assets in one sector and another. But smart infrastructure means each will produce data in forms that can be understood by a single, overarching software application, meaning that assets can effectively talk to each other.

- Traffic control systems already use multiple data sources on the road network plus weather information to minimize congestion and manage emergencies.

Cyber Security or any other concept

- Smart Infrastructures comprise several operators from different domains of activity, such as energy, public transport, public safety. They deploy and operate cyber-physical systems‖, that are data-controlled equipment which interact with the physical world. They collaborate and exchange data under several schemes, depending on their level of maturity.

- The usage of cyber-physical devices (software-controlled devices that interact with the physical world) bring new risks: on the economy and on the safety of citizens.

- Recent trends see Critical Infrastructures migrating toward Smart Infrastructures by deploying IoT. They invest on remote management and big data to improve the quality of service.
- ENISA develops guidance to secure Smart Infrastructures from cyber threats, by highlighting good security practices and proposing recommendations to operators, manufacturers and decision makers.

- For that purpose, ENISA follows a sectorial approach in the following domains:

- Smart Cities
- Smart Homes
- Smart Hospitals
- Smart Grids

District Cooling and Heating/ Green Building

- Energy conservation, indoor air quality, and comfort are among the core green building issues encompassed by heating, air-conditioning and ventilation design. These interrelated systems can be complex, expensive to install, and costly to operate but green building also offers many opportunities to simplify and save:

- HVAC is more than a few pieces of mechanical equipment. It's a system designed as part of the house.
- An HVAC system works best when it takes local climate and building designs into account.
- In a green-built home, heating and cooling equipment can be smaller, less costly, and less complicated.

- Energy-efficient HVAC design is a fundamental of green building, for good reason:

- The scale of the issue: HVAC is responsible for more than a third of energy use in commercial buildings in the U.S.
- The scale of returns: Smart designs can easily save upwards of 40% of that energy, often with strategies that offer instant or short payback.

- The human impact: Discomfort from spaces that are too hot or too cold, and lack of adequate ventilation, are an epidemic. Good design that fixes these problems supports healthier, more productive occupants.

- Don't make the all-too-common mistake of thinking of HVAC design separately from building envelope design. Over-glazed buildings lead to oversized mechanical systems, increasing costs on both fronts. A tight, well-insulated envelope may cost a bit more but can pay for itself with less mechanical equipment.

Strategic Options for Fast Development

- According to the third annual edition of Accenture Research, Masters of Rural Markets: From Touchpoints to Trust points - Winning over India's Aspiring Rural Consumers, rural consumers are particularly aspiring or striving to purchase branded, high quality products.

- Consequently, businesses in India are optimistic about growth of the country's rural consumer markets, which is expected to be faster than urban consumer markets. The report highlights the better networking among rural consumers and their tendency to proactively seek information via multitude sources to be better informed while making purchase decisions.

- Importantly, the wider reach of media and telecommunication services has provided information to India 's rural consumers and is influencing their purchase decisions. In line with general trend, rural consumers are evolving towards a broader notion of value provided by products and services which involves aspects of price combined with utility, aesthetics and features, and not just low prices.

- The hinterlands in India consist of about 650,000 villages. These villages are inhabited by about 850 million consumers making up for about 70 per cent of population and contributing around half of the country's Gross Domestic Product (GDP).

- Consumption patterns in these rural areas are gradually changing to increasingly resemble the consumption patterns of urban areas. Some of India's largest

consumer companies serve one-third of their consumers from rural India. Owing to a favorable changing consumption trend as well as the potential size of the market, rural India provides a large and attractive investment opportunity for private companies.

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

- India’s per capita GDP in rural regions has grown at a Compound Annual Growth Rate (CAGR) of 6.2 per cent since 2000. The fastmoving Consumer Goods (FMCG) sector in rural and semi- urban India is expected to cross US$ 20 billion mark by 2018 and reach US$ 100 billion by 2025@.

Recent Developments

- Following are some of the major investments and developments in the Indian rural sector.

- India's unemployment rate has declined to 4.8 per cent in February 2017 compared to 9.5 per cent in August 2016, as a result of the Government's increased focus towards rural jobs and the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) scheme.

- The Ministry of Rural Development is expecting to achieve its annual targeted length of 48,812 kilometers of rural roads by March 31, 2017 under the Pradhan Mantri Gram Sadak Yojana (PMGSY), which has reached a completion stage of 67.53 per cent (32,963 kms) as on January 27,2017.

- The National Bank for Agriculture and Rural Development (NABARD) plans to provide around 200,000 point-of-sale (Pos) machines in 100,000 villages and distribute Ru Pay cards to over 34 million farmers across India, to enable farmers to undertake cashless transactions.

- Magma Fincorp, a Kolkata-based non-banking finance company (NBFC) plans to expand its operations in South India, with specific focus on rural and semi-urban markets to help the company grow rapidly.

- Bharti Airtel is applying for a payments bank licence and has involved Kotak Mahindra Bank as a potential investor in the venture, in a bid to tap significant revenue opportunities from the Reserve Bank of India's financial inclusion initiative. Payments banks are meant to fan out into the rural, remote areas of the country, offering limited but critical services such as money transfers, loans and deposit collection. While banks have the knowhow, telecom companies have the network, making it an ideal match.

Initiatives in village development by local self-government

- **As a remedial learning we visited, Village Visit :Adalaj Village, Gandhinagar District**

- Remarkable local self-government Law from the year 1992 spotted well within the villages of India which adopted the principles of Mahatma Gandhi as well.

- Since 1992, local governance in India takes place in two very distinct forms. Urban localities covered in the 74th amendment the constitution, have nagarpalika but derive their powers from the individual state governments, while the power of rural localities have been formalized under the Panchayati raj system, under 73rd amendment to the constitution for the history of traditional local government in India and south Asia.

Temple at Adalaj

Adalaj seva sahkari mandali

ADALAJ ROADS

ADALAJ GRAM PANCHAYAT

BANK AND ATM FACILITIES ADALAJ PRIMARY HEALTH CENTRE

Smart Initiatives by District Municipal Corporation

- The Government of India has planned various initiatives to provide and improve the infrastructure in rural areas which can have a multiplier effect in increasing movements of goods, services and thereby improve earnings potential of rural areas subsequently improving consumption.

- The Government of India has approved the proposal to construct 10 million houses for the rural population, which will require an investment out lay of Rs81,975 crore (US$ 12.7 billion) for the period from 2016-17 to 2018-19.

- The Government of India aims to provide tap water regularly to every household by 2030 in line with United Nations Sustainable Development Goals, requiring a funding of Rs 23,000 crore (US$ 3.57 billion) each year until the target is met.

- The Government has introduced various reforms in the Union Budget 2017-18 to uplift the rural markets. Some of the key highlights of the budgetary:
- Rs 187,223 crore (US$ 28.08 billion) has been allocated towards rural, agriculture and allied sectors.

- The Allocation for Pradhan Mantri aawas Yojanagramin has been increased from Rs 15,000 crore (US$ 2.25 billion) to Rs 23,000 crore (US$ 3.45 billion) in the year 2017-18 with a target to complete 10 million houses for the houseless by the year 2019.

- The pace of roads construction under Pradhan Mantri Gram Sadak Yojana (PMGSY) has been accelerated to 133 kms per day as against an average of 73 kms per day during the years2011-14.

- The allocation to the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) has been Rs 48,000 crore (US$ 7.2 billion) in the year 2017- 18, which is the highest ever allocated amount.

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

- The Government of India is looking to install Wi-Fi hotspots at more than 1,000 gram panchayats across India, under its ambitious project called Digital Village, in order to provide internet connectivity for mass use, as well as to enable delivery of services like health and education in far-flung areas.In the Union Budget 2017-18, the Government of India mentioned that it is on course to achieve 100 per cent village electrification by May 1,2018.The Government of India has sought Parliament approval for an additional expenditure of Rs 59,978.29 crore (US$ 8.9 billion), which will be used to support the government's rural jobs scheme, building rural infrastructure, urban development and farm insurance.

❖ How to implement other Countries smart villages projects in Indian village context

- As is the trend with urban India, consumers in the rural regions are also expected to embrace online purchases over time and drive consumption digitally. The rural regions are already well covered by basic telecommunication services and are now witnessing increasing penetration of computers and smartphones. Taking advantage of these developments, online portals are being viewed as key channels for companies trying to enter and establish themselves in the rural market. The Internet has become a cost-effective means for a company looking to overcome geographical barriers and broaden its reach.Market research firm Nielsen expects India rural FMCG market to reach a size of US$ 100 billion by 2025. Another report by McKinsey Global Institute forecasts the annual real income per household in rural India to rise to 3.6 per cent 2025, from 2.8 per cent in the last 20 years.

4. CHAPTER 4 About PATOSAN Village

4.1 Introduction

➢ **Introduction About <PATOSAN> Village details**

- The Village selected for the Vishwakarma Project Phase VII is situated in Ahmedabad District and the name of Village Patosan.

➢ **Justification/ need of the study**

- The Government of Gujarat has launched Vishwakarma Yojana (scheme) for development of villages by identifying the requirements of villages. Under this scheme, the villages are surveyed and this project was identified and selected for implementation.

- urbanization is to bring peace of mind to the villagers by providing them the basic amenities required and still keeping the village soul intact. This project gives one new idea for Development of rural villages. Also gives procedure how they fulfil requirement of the villages. Now a day people are moving from rural to urban area due to lack of Basic amenities.

- With the help of this Yojana we can bring awareness about the thing which are not available at rural areas. So this help to provide better solution for the available problems in rural area like drinking water, Drainage facility road network, etc.

- Patosan village is in Palanpur taluka and Banaskantha district. In Patosan village people are engaged with the agriculture and Business activity. In this village some educated people went to Amreli for work and some people go for labours work and for other purpose. The main source of water is bore wall and in the village. For the survey of villager, we collect some basic data about village like population of the village, political background of village, Area of Village. Then we will Compare village Facilities with Ideal and smart village.

➢ In Patosan village Based on gap analysis and condition of existing facilities based on the interviews, we have proposed design and estimation of some required designs. The details have been expressed in details in the report.

- **Study Area (Broadly define) Locality Name:** PATOSAN
- **City Name:** Banaskantha **District:** Banaskantha **State:** Gujarat
- **Language:** Gujarati and Hindi
- **Time Zone:** IST (UTC+5:30)
- **Pin Code:** 385515
- **Post Office Name:** Patosan
- **Alternate Village Name:** Patosan

4.2 Objectives of the study

➢ **AIM**

- To design and develop the various components of the Patosan Village, Banaskantha based on the Socio- Economic Analysis.

➢ **OBJECTIVES**

- To perform the socio-economic Survey of the Study area i.e. Patosan Village, Banaskantha.
- To Identify the existing facilities and infrastructure in the Patosan village and to propose the infrastructure with design.
- To design various infrastructures in the Patosan Village based on the requirements.

4.3 Scope of the Study

➢ Provide safe and affordable water facilities and sanitation.
➢ To perform safe and Economical socio-economical surveys.
➢ To solve water scarcity and other problem for rural area.
➢ Design a networks and infrastructures which is economical and easy to develop.
➢ Creation of artificial ground water recharge system and other facilities.
➢ Provide aesthetic and hygienic environment for human.
➢ Collection and storage of rain water and other data as well.
➢ Improve the living standard of rural population towards rurbanisation.

➢ Methodology Frame Work for development of your village

- The methodology Developed has been explained below which includes the proposed planning as well. The flow chart below shows the detailed methodology

➢ List of Objects Available related to Civil Methodology

Following are some mentioned facilities:

- Drinking Water, Drainage Network, Sanitation Facilities: Waste Management Facilities
- Transportation & Road Network
- Electricity
- Irrigation Facilities
- Public Garden /Park/Playground, Village Pond/Lake
- Other Recreation Facilities
- Sustainable Infrastructure Facilities, Existing Condition of Public Buildings
- Suggestions for Sustainable Infrastructure Facilities & Repair &Maintenance of existing Public Infrastructures
- Concept of Various type of method for Transportation
- Various type method for Drainage System
- Various type method for Roads
- Housing condition, Heath Facilities
- Education Facilities, Technology Mobile/ WIFI / Internet Usage Details. in percentage
- Sports Activity as Gram panchayat
- Socio-Cultural facilities
- Community Hall, public library
- Different Concept of the Solid / Liquid type of Waste Management
- Various type of Environmental Factors, Any other details

➢ The details have to be collected and socioeconomic survey needs to be done. The problems in the villages and existing systems needs to be addressed. The other required systems and designs must be proposed with drawings.

4.4 <PATOSAN> Study Area Profile

- The Village selected for the Vishwakarma Project Phase VIII is situated in Banaskantha District and the name of Village is Patosan. The basic and other details of the Patosan Village is depicted below.

- **Locality Name:** PATOSAN
- **City Name:** Banaskantha **District:** Banaskantha **State:** Gujarat
- **Language:** Gujarati and Hindi
- **Time Zone:** IST (UTC+5:30)
- **Elevation / Altitude:** 35 meters above sea level
- **Pin Code:** 385515
- **Post Office Name:** Patosan
- **Alternate Village Name:** Patosan
-

4.5 Study Area Location

Patosan is a village in Banaskantha district, Gujarat, India.

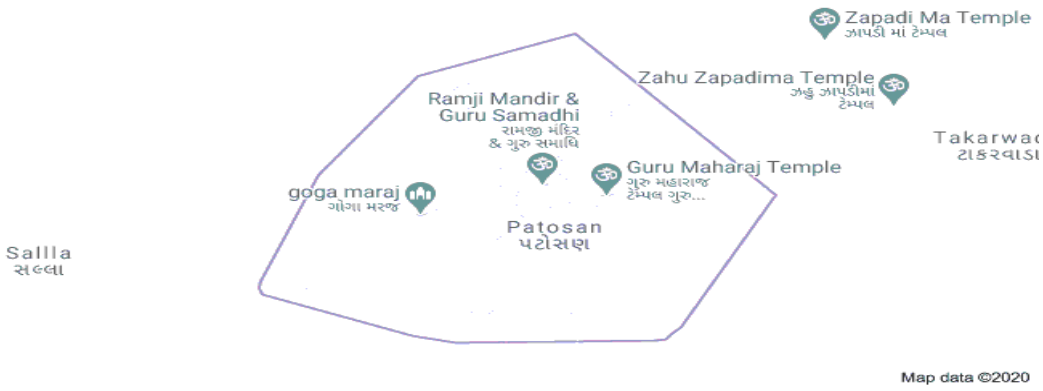


Fig.32: Land Map of Patosan

4.6 Physical & Demographical Growth

- Existing facilities in the study area is being depicted below and the Infrasture with the condition is also mentioned below.

4.7 Study area land use details:

Table 4.1: Land use Detail

Description	Area
Area of Village (Approx.)	2485 Hector
Forest Area	-
Agricultural Area	1414.14 Hector

- Patosan is a Village in Palanpur Taluka in Banaskantha District of Gujarat State, India
- It is located 18 District headquarters Palanpur
- 18 KM from Patosan
- Patosan Pin code is 385515 and postal head offices Gadh post office
- Palanpur, Deesa are the nearby Cities to
- Patosan

Table 4.2: Heath facilities

Sr. No.	Description	Availability or nearby distance
1.	Sub health center	1Nos.
2.	Govt. hospital	Public Health Centre
3.	Private Clinic	2 Nos.
4.	Surgical doctor	-Nos.
5.	Blood bank	17km away at vil Hospital (Palanpur)
6.	Ambulance facilities (108)	1 Nos.
7.	Medical shop	1 Nos.
8.	Aarush health facilities	available

4.8 Brief history

- Patosan is a village situated in Taluka Palanpur Block of Banaskantha district in Gujarat.

- Located in rural region of Banaskantha district of Gujarat, it is one of the 56 villages of Taluka Palanpur Block of Banaskantha district.
- According to the administration records, the village code of Patosan is 511670. The village has 332 families. The Negative portion is that illiteracy rate of Patosan village is 30%. Here 463 out of total 1533 people are illiterate. Male illiteracy rate here is 22% as 177 males out of total 798 are illiterate.
- Among the females the illiteracy rate is 38% and 286 out of total 735 females are illiterate in this village.

4.9 Economic profile /Banks

- The number of working people of Patosan village is 600 while 933 are un-employed. And out of 600 employed individual 48 individuals are completely dependent on cultivation.

- **Actual Problem faced by Villagers and smart solution**

The project aims to identify the various needs, facilities existing in the villages. The problem may be summarized as to identify the following needs and requirements available or has gap to be made availed.

The following facilities and infrastructures need to be developed to convert the village into ideal or smart village and to process the urbanization in village. Following are some mentioned facilities:

- Drinking Water, Drainage Network, Sanitation Facilities: Waste Management Facilities
- Transportation & Road Network
- Electricity
- Irrigation Facilities
- Housing condition, Heath Facilities
- Education Facilities, Technology Mobile/ WIFI / Internet Usage Details. In percentage
- Sports Activity as Gram Panchayat
- Socio-Cultural Facilities
- Community Hall, Public Library

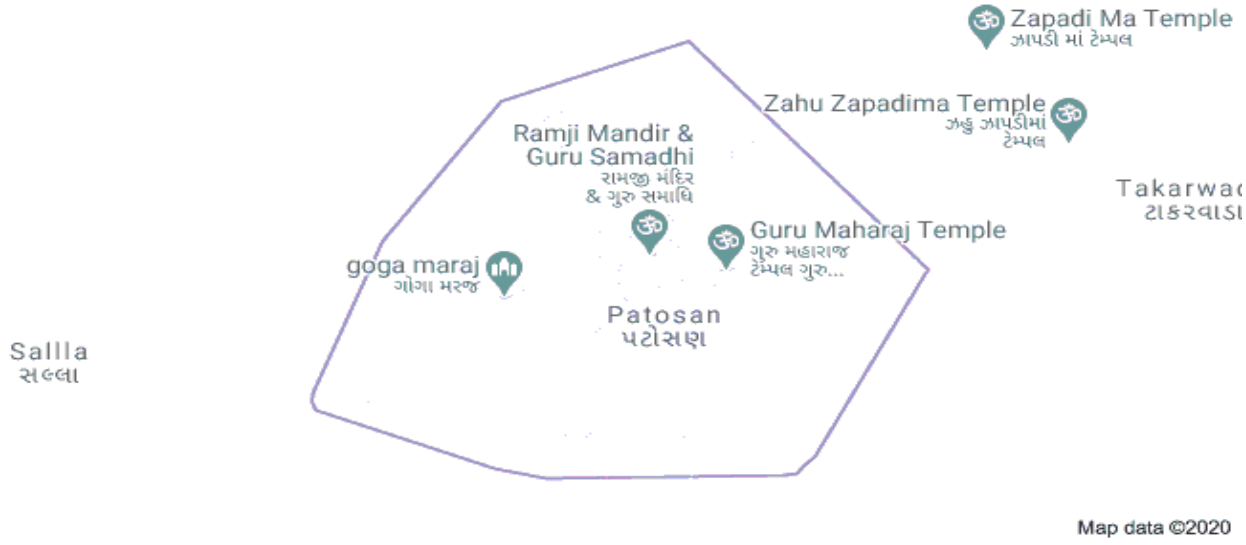
- Public Garden /Park/Playground, Village Pond/Lake
- Other Recreation Facilities
- Sustainable Infrastructure Facilities, Existing Condition of Public Buildings
- Suggestions for Sustainable Infrastructure Facilities & Repair & Maintenance of existing Public Infrastructures

The details have to be collected and socioeconomic survey needs to be done. The problems in the villages and existing systems needs to be addressed. The other required systems and designs must be proposed withdrawings.

4.10 Social scenario

Table 4.3: Socio-cultural facilities

Sr. No.	Facilities	Information/ Details
1.	Community hall (without TV)	0 Nos.
2.	Public library	Not available
3.	Public garden	Not available
4.	Village pond	Not available
5.	Recreational center	Unavailable
6.	Birth & death registration office	Panchayat Office



Base Location map, Land Map, Gram Tal Map Fig.33: Patosan Village Location Map
Fig.34: Map of Patosan

4.11 Preservation of traditions, Festivals, Cuisine

- People of Gujarat celebrate each and every festival with zeal and vigor. One can see splendors of color kaleidoscope during the festival celebration as people of different religions come together to celebrate festivals while carrying a message of peace and harmony.

- Uttarayan, Deepawali, Holi, Ganesh Chaturthi, Eid ul-Fit and Christmas are celebrated with great fervor in entire Banaskantha. Apart from the main festivals, many international fairs and expos are also organized in Banaskantha that too on a large scale. To feel the pulse and favors of Banaskantha, one should visit here during the festival season.

4.12 To know the reasons of migration / trends of migration / problems and potentials of Migrants

- Patosan is a village situated in Taluka Palanpur Block of B.k. district in Gujarat. Located in rural region of B.K. district of Gujarat, it is one of the 120 villages of Taluka Palanpur Block of Ahmedabad district. According to the administration records, the village code of Patosan is 385515. The village has 400 families.

- The basic reasons for the migrations: city Palanpur nearby for jobs, Higher Studies, and services after graduation, Better perks and salaries at metro cities etc.

- **Study area land use details**

Table 17: Land use Detail

Description	Area
Area of Village (Approx.)	2485 Hector
Forest Area	-
Agricultural Area	1414.14 Hector

4.13 Data Collection<PATOSAN> (Photograph/Graphs/Charts/Table)

- Patosan is a village in the Banaskantha District of the Indian state of Gujarat. Nearby villages are Gadh, Kumbhasan ,. Patosan's Postal Index Number code is 385515 and the postal head office is Gadh.

- **Methods for data collection**

Various modes and methods adopted for the data collections are;

- Visits and interviews
- Demographic data collections.
- Surveys and Questionnaire.
- Details from the Gram Panchayat.
- Development profiles.

- **Primary survey details**

Table 4.4: Heath Facilities

Sr. No.	Description	ailability or rby distance
1.	Sub health center	1Nos.
2.	Govt. hospital	17km away (Palanpur)
3.	Private Clinic	1 Nos.
4.	Surgical doctor	1Nos.
5.	Blood bank	17km away (Palanpur)
6.	Ambulance facilities (108)	1 Nos.
7.	Medical shop	1 Nos.
8.	Aarush health facilities	available

Table 4.5: Education facilities

Sr. No.	Descriptions	Information/ Detail
1.	Anganwadi/Play group	1 Nos.
2.	Primary school (std. 1 to 8)	1 Nos.
3.	Secondary 7 & Higher Secondary	1 Nos.
4.	Transportation facility for students	None
5.	Science stream	Unavailable
6.	College nearby village	17 km away
7.	Nearby I.T.I. center	5 km away
8.	Nearby vocational training center	6 km away

- **Average size of the House**

- Average size of the house as per general survey is reported as 25ft. x 20 ft. (7.2 m by 6 m).

- **Geo-Tagging of House**

- The most of the houses were masonry and concrete build. The impact of Ahmedabad is seen in the vicinity as main economic city center is located nearby. There is about 4500 houses out of which 4100 are residing..

- **No of Human being in One House**

- In village generally each family consist average 5 members. There is about 200 children in village

- **Which Material used locally**

- For the house, they used mainly bricks, cement, concrete and masonry materials.

➢ **Out SourcedMaterial**

- Concrete materials, cements and reinforced materials are outsourced. Nearby industrial area and outer Ahmedabad city has influence on the lifestyle of the people living in the village.

➢ **Labor work doing**

- According to the administration records, the village code of Patosan is 511670. The village has 332 families, The Negative portion is that illiteracy rate of Patosan village is 30%. Here 463 out of total 1533 people are illiterate. Male illiteracy rate here is 22% as 177 males out of total 798 are illiterate. Among the females the illiteracy rate is 38% and 286 out of total 735 females are illiterate in this village.

➢ **Any Costing**

- Outer road is near to the village. Due to good connectivity with nearby cities and also connected with State Highway. Village has less transportation cost.

➢ **Geographical Detail**

- Patosan is a village situated in Palanpur Block of Banaskantha district in Gujarat. Located in rural region of Palanpur, Banaskantha district of Gujarat, it is one of the 56 villages of Taluka Palanpur Block of Ahmedabad district. According to the administration records, the village code of Patosan is 385515. The village has around 800 families..

- **Locality Name:** PATOSAN
- **City Name** Palanpur **District:** Palanpur
- **State:** Gujarat
- **Language:** Gujarati and Hindi
- **Time Zone:** IST (UTC+5:30)
- **Elevation / Altitude:** 35 meters above sea level
- **Telephone code/ Std code:** 02717

- **Pin Code:** 385515
- **Post Office Name:** Patosan
- **Alternate Village Name:** Patosan

➢ **Demographical Detail**

Table 4.6: Patosan: DEMOGRAPHY

	2001	2011
MALE	1722	1947
FEMALE	1500	1747
TOTAL	3222	3694

➢ **Occupational Detail**

- Major occupation of the villagers are: Laboring in nearby industrial areas, Shokeeping, Farming (Very few) and Stall management.

➢ **Agricultural Details / Organic Farming**

- Agriculture area in village is very less and due to industrial area in nearby region it is not easy to be farming prone. Although farming is practiced by some conventional farming families.. This village people are not fully depend on agricultural income.

➢ **Manufacturing HUB / Ware Houses**

- Nearby the Patosan village Industrial growth is very much that's why the development of startups nearby village is seen.

➢ **Tourism Cluster**

- In Patosan Village, No any type of Tourism cluster. But It is located nearby the City Palanpur.

➢ **Services Cluster**

- In the village peoples are dependent on the income from the labour of Industrial tract and agriculture side.

➢ **Male / Female Details See below:**

	2001	2011
MALE	1722	1947
FEMALE	1500	1747
TOTAL	3222	3694

- **Cast Wise Population Details / Which ID proof using by villagers**

Table 4.7: Cast Wise Population Details

Caste	Population
General	2046
Other Backward Class(OBC)	1200
Schedule Caste (SC)	448

- **Occupation wise Details / Majority business**

Table 4.8: Occupation detail in percentage

me of three major occupation groups in village	1. Agricultural (80%)
	2. Business (20%)
	3. Laboring & Others (2%)

- **Physical Infrastructure Facilities**

Table 4.9: Existing Condition

Sr. No.	Govt. Building	Condition
1.	Gram Panchayat	Good
2.	Post Office	Own
3.	Bus Station	No
4.	Sub heath center	No
5.	Primary school	Medium
6.	Secondary and higher secondary school	Medium

Table 4.10: Education facilities

Sr. No.	Descriptions	Information/ Detail
1.	Anganwadi/Play group	2 Nos.
2.	Primary school (std. 1 to 8)	1 Nos.
3.	Secondary school (std 9 & 10)	No
4.	Higher secondary school (std.11 & 12)	No
5.	Transportation facility for students	Unavailable

- **Infrastructure Details (With Exiting Photograph)**

- Various Facilities are present in village and Managed by the Gram Panchayats.

- **Drinking Water / Water Management Facilities**

- Water tank is used for the water supply purpose. Borewell is also used for the drinking water supply.

- **Drainage Network / sanitation Facilities**

- Underground conduits and Small canals is used for the drainage. For waste water collection and drainage, the sewerage network is used.

- **Transportation & Road Network**

- CC roads and the inferior material type village road materials are used for the village based material designs.

- **Housing condition**

- In the village housing conditions is found to be quite good. Masonry and Concrete materials are widely used for the house construction.

➢ **Social Infrastructure Facilities, health, Education, Community Hall, Library**

- Various facilities are present inside the villages such as Hospitals, Public Health center Educational Institutes, community halls and library.

➢ **Technology Mobile/ WIFI / Internet Usage Details. In%**

- Digital networking and Wifi facilities are not present in the village although various schemes under the E-gram and Adarsh Gram Yojana Wifi facilities are proposed to be implemented in the villages.

➢ **Sports Activity as Gram Panchayat**

- Separate space is not present for the sports activities. Also, the village is situated in outskirts of the Ahmedabad city. For the sports work and other activities, villagers used to utilize the open space in the village.

4.14 Socio-Cultural Facilities , Public Garden /Park/Playground /Pond/ Other Recreation Facilities

Public Gardens, Playground is present in the village which increases the interaction ration within the villagers.

Fig.35 Village Entry

Fig.36 Bus Stand Rest Region

Village Panchayat, Patosan

E Kendra

d By Pass

Outer Village Area

Village House Unit

Bank

	
Patosan Village Temple	**Village Interior**

- **Other Facilities**

Various other facilities are also present in the village such as:

- Dudh mandali,
- Open space & Playground,
- Temples and gathering place.
- Private community halls,
- Aanganbadi Kendra,
- Public offices/ Post offices,
- Private Public health center.

4.15 Sustainable Infrastructure Facilities & Repair &Maintenance

- Sustainable development has been defined in many ways, but the most frequently quoted definition is from Our Common Future, also known as the Brundtland report "sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs."

- Concrete is the most widely used and versatile construction material possessing several advantages over steel and other construction materials. However very often one come across with some defects in concrete. The defects may manifest themselves in the form of cracks, spalling of concrete, exposure of reinforcement, excessive deflections or other signs of distress.

- On many occasions, corrosion of reinforcement may trigger off cracking and spalling of concrete, coupled with deterioration in the strength of the structure. Such situations call for repairs of affected zones and sometimes for the replacement of the entire structure.

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

- Is proper building maintenance important? Is it important to clean, maintain and gleam your building premises? Are your building premises witnesses peeling paints, roof leaks, door wraps, spalled floor and ceilings, jammed gutters and drains? A building or an infrastructure is not just a piece of structure, it is an important financial investment that has the potential to serve you comfort and serve returns for years.

- A building provides you and your people a place of shelter, proper environment to work, play, live and practice other activities and also protect you from disturbances of the outside.

- Maintaining your building premises is necessary in order to preserve the assets and protect the building the building occupants. Proper building maintenance makes sure that the building and the environment remain healthy, clean and a safe place to work or reside. On the contrary, this also causes the value of your building higher that keep up regular maintenance.

4.17 Any other details

- The village is located in the Ahmedabad District and outskirts of the Ahmedabad city. Here, any other specially designed building or structure is not present in the village. Although the village has extreme potential to be developed as smart village as situated near Ahmedabad.

4.18 Renewable energy source planning particularly for villages

- Every day we rely on energy to provide us with electricity, hot water, and fuel for our cars. Most of this energy comes from fossil fuels, such as coal, oil, and

natural gas. These are nonrenewable energy sources, which means that if we use them all up, we can never get more during our lifetime. Fossil fuels also contribute greatly to global climate change by releasing carbon dioxide into the air when they are burned.

- Because fossil fuels can run out and are bad for the environment, it is important that we start switching to other energy sources, like renewable energy sources. These are energy sources that are constantly being replenished, such as sunlight, wind, and water.

- This means that we can use them as much as we want, and we do not have to worry about them running out. Additionally, renewable energy sources are usually much more environmentally friendly than fossil fuels. Overall, they release very few chemicals, like carbon dioxide, that can harm the environment.

- Currently, less than ten percent of all the energy we use comes from renewable sources. So, you might be wondering, 'if renewable energy sources do not harm the environment and will not run out, then why are we not using them everywhere and all the time?' It is because many of them are

- currently expensive to harness, are inefficient, or have other disadvantages. For example, using energy from the wind might be great in an area that is really windy all year-round, but it wouldn't work so well in an area with very little wind.

- **Types of Renewable Energy**

- Let's look a little closer at five examples of renewable energy sources, including the pros and cons of each.

- Solar energy, or energy from the sun, is harnessed using solar collectors. This collected energy can then be used to provide heat, light, or other forms of electricity.

- Pros: Sunlight is free and readily available almost everywhere. Using it does not create any wastes or pollutants.

- Cons: The technology needed to collect and use solar energy can be expensive. Sunlight can only be collected during the day when it is sunny.

- Wind energy is just what it sounds like: energy that we get from the wind. Windmills have been used for hundreds of years to pump water from the ground.

- Today, we use large, tall wind turbines that use the wind to generate electricity. Many wind turbines are often placed together in wind farms in flat areas with strong winds.

4.19 Irrigation Facilities

- Irrigation essentially means the watering of land to make it ready for agricultural purposes. An irrigation system is the supplying of water via artificial canals and channels to growing plants and crops in afield.

- Water is vital for the growth of plants. There can be no plants or crops if they do not have access to water in some form. It is, therefore, crucial to supply water to crops and plants, periodically and as per their requirement. So irrigation is this periodic and appropriate supply of water to plants. The water for this irrigation comes from various sources such as wells, ponds, rivers, dams, reservoirs, rainfall etc.

4.20 Importance of Irrigation

Irrigation is necessary for agriculture and farming due to the following reasons:

- Plants absorb minerals and nutrients from the soil via their roots. These minerals are dissolved in the water present in the soil. Then the water transports these nutrients to all parts of the plant, enabling growth and photosynthesis.
- Irrigation provides the moisture that is crucial during the germination phase of the plant's lifecycle.
- Irrigation also makes the soil more fertile (by adding moisture to it) and easier to plough.
- Proper irrigation also increases yield from the farm.

What are Advantages & Disadvantages of Manure and Fertilizers?

- Traditional Methods of Irrigation

- These are the methods of irrigation that were used in the earlier years. Even today some small farms in rural areas adopt these. Although they are cheaper than the modern methods, they are not nearly as efficient. They require human or animal labour to function. Some of these methods are,

- Moat
- Also called the pulley system, it involves pulling up water from a well or other such source to irrigate the land. It is an extremely time consuming and labour intensive system, but it is very cost efficient. Also, wastage of water is avoided when using a moat system of irrigation.

- Chain pump

- A chain pump consists of two large wheels connected by a chain. There are buckets attached to the chain. One part of the chain dips into the water source. As the wheel turns, the bucket picks up water. The chain later lifts them to the upper wheel where the water gets deposited into a source. And the empty bucket gets carried back down.

- Dhekli

- It is a system of drawing water from a well or such similar source. Here we tie a rope and bucket to a pole. At the other end, we tie a heavy stick or any other object as a counterbalance. And we use this pole to draw up water.

- Rahat

- So Rahat system of irrigation uses animal labour. Above the well, we tie a large wheel. An ox or cow would turn the wheel to draw the water from the well.

- **Electricity Facilities with Area**

- Electricity through Torrent Power is supplied to the household and residential buildings.

➢ **Existing Institution like - Village Administration – Detail Profile**

- The Village selected for the Vishwakarma Project Phase VII is situated in Ahmedabad District and the name of Village if Patosan. The basic and other details of the Patosan Village is depicted below.

- **Locality Name:** PATOSAN
- **City Name:** Palanpur District**:** Banaskantha State**: Gujarat**
- **Language:** Gujarati and Hindi
- **Time Zone:** IST (UTC+5:30)
- **Pin Code:** 385515
- **Post Office Name:** Patosan
- **Alternate Village Name:** Patosan
- Table 25: Village basic details

Particulars	Total	Male	emale
Total no. of Houses	332	-	-
Population	1533	798	735
Child (0-6)	193	100	93
Schedule Caste	242	133	109
Schedule Tribe	37	16	21
Literacy	79.85 %	88.97 %	69.94 %
Total workers	600	485	115
Main worker	547	-	-
Marginal worker	53	37	16

➢ **Bachat Mandali**

- Banks are present in the villages where villagers can deposit and collect their money. Also, ATMs are there in the village from which the money can be collected for local expense

➢ **Dudh mandali**

- The local Dudh mandali which can be referred to as a local dairy is also situated in the village.

➢ **Mahila forum**

- There are various rights and reserved honors for the ladies in the era of local self-government in the villages. The women empowerment schemes are on served in the villages as well.

➢ **Plantation for the Air pollution**

- Tree plantation programs are organized regularly by the Village Administrations.

➢ **Rain Water Harvesting**

- Water is, undoubtedly, the top natural resource you need for your home use. It's glamorous to possess a stockpile of guns, gold, and jeweler, but without water, life might prove to be unbearable.

- Water shortages are sometimes inevitable, and so if you're not prepared for the eventuality, you might find yourself between a rock and a hard place.

- The best and cheapest alternative to the traditional water supply systems is rainwater harvesting. However, to be able to harvest rainwater, you'll need to install a rainwater harvesting system.

- We all take water for granted. It is one of those natural resources that most people do not put a lot of thought into, but in order to continue enjoying that free supply of water for many more years, changes must be made.

- Rainwater harvesting is the process of collection of rainwater from surfaces on which rain falls, filtering it and storing it for multiple uses. Rainwater harvesting puts the supply of water back to normal levels. It is the collection and storage of water from surfaces that rain has fallen upon.

- Rainwater harvesting is an innovative technique utilized to harvest rainwater from roofs and other above surfaces to be stored for later use. Rain harvested water can be used for garden and crop irrigation, watering livestock, laundry, and flushing toilets. However, you cannot use harvested rainwater for showering, bathroom sink or kitchen use because it's not really fit for consumption.

- In a normal scenario the rainwater is collected from roof buildings and then stored inside of a special tank. Rainwater harvesting systems are designed after assessing site conditions that include rainfall pattern, incident rainfall, subsurface strata and their storage characteristics. Rainwater harvesting is popular all across the world, although in countries that are very dry, such as Australia, it is even more popular.

- **Agricultural Development**

- The term ‗Green Revolution refers to a sustained and continuous increase in agricultural pro- ductility or a yield per acre take-off in traditional agriculture.

- The stress is on intensive rather than extensive cultivation so as to raise productivity per hectare. It signifies a shift to the agricultural production function and the consequent increase in land productivity, i.e., yield per hectare.

- All rural extension work takes place within a process of development, and cannot be considered as an isolated activity. Extension programmers and projects and extension agents are part of the development of rural societies.

- It is, therefore, important to understand the term *development*, and to see how its interpretation can affect the course of rural extension work.

- The term development does not refer to one single phenomenon or activity nor does it mean a general process of social change. All societies, rural and urban, are changing all the time. This change affects, for example, the society's norms and values, its institutions, its methods of production, the attitudes of its people and the way in which it distributes its resources.

- A rural society's people, customs and practices are never static but are continually evolving into new and different forms.

- There are different theories which seek to explain this process of social change (as evolution, as cultural adaptation or even as the resolution of conflicting interests) and examples of each explanation can be found in different parts of the world.

- Development is more closely associated with some form of action or intervention to influence the entire process of social change. It is a dynamic concept which suggests a change in, or a movement away from, a previous situation.

- All societies are changing, and rural extension attempts to develop certain aspects of society in order to influence the nature and speed of the change.

- In the past few decades, different nations have been studied and their level of development has been determined; this has given rise to the use of terms such as developed as opposed to nations.

5. CHAPTER 5 Technical options with case studies

- Concept (Civil)
- Advance Sustainable construction techniques/Practices and Quantity
- Soil Liquefaction
- Sustainable Sanitation
- Transportation Infrastructure/System
- Vertical farming
- Corossion mechanism,Preventions &Repair Measures of RCC Structure
- Sewage treatment plant

5.1 Concept (Civil)

- Development involves the introduction of new ideas into a social system in order to produce higher per caput incomes and levels of living through modern production methods and improved social organization.

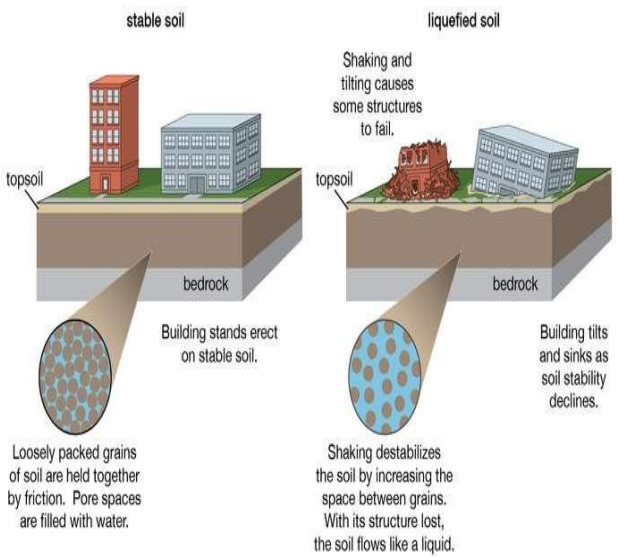
- Development implies a total transformation of a traditional or pre-modern society into types of technology and associated social organization that characterize the advanced stable nations of the Western world.

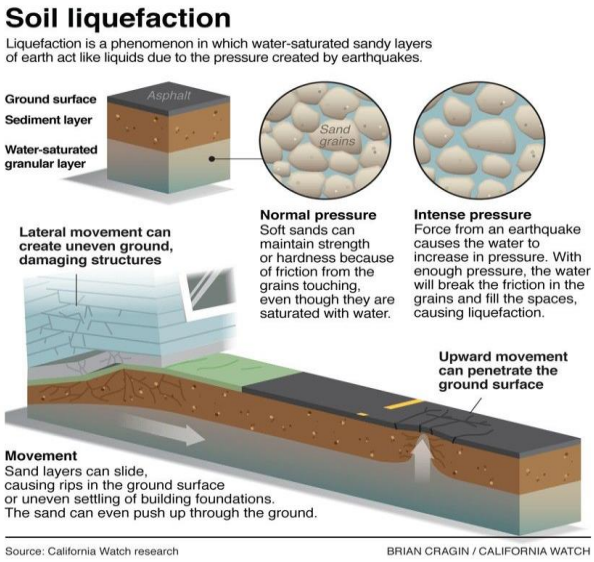
- Development is building up the people so that they can build a future for themselves. Development is an experience of freedom in deciding what people choose to do.

- To decide to do something brings dignity and self-respect. Development efforts therefore start with the people's potential and proceed to their enhancement and growth.

- Much has been written about the process of development, and the approaches which developing nations should adopt in order to develop. Reviewing this literature, it can be concluded that a process of development should contain three main elements.

5.2 Soil Liquefication





- 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, silty, and gravelly soils are the most susceptible to liquefaction.
- The phenomenon is most often observed in saturated, loose (low density or uncompacted), sandy soils. This is because a loose sand has a tendency to compress when a load is applied. Dense sands, by contrast, tend to expand in volume or 'dilate'. If the soil is saturated by water, a condition that often exists when the soil is below the water table or sea level, then water fills the gaps between soil grains ('pore spaces'). In response to soil compressing, the pore water pressure increases and the water attempts to flow out from the soil to zones of low pressure (usually upward towards the ground surface). However, if the loading is rapidly applied and large enough, or is repeated many times (e.g. earthquake shaking, storm wave loading) such that the water does not flow

out before the next cycle of load is applied, the water pressures may build to the extent that it exceeds the force (contact stresses) between the grains of soil that keep them in contact. These contacts between grains are the means by which the weight from buildings and overlying soil layers is transferred from the ground surface to layers of soil or rock at greater depths. This loss of soil structure causes it to lose its strength (the ability to transfer shear stress), and it may be observed to flow like a liquid (hence 'liquefaction'.

Liquefaction is more likely to occur in loose to moderately saturated granular soils with poor drainage, such as silty sands or sands and gravels containing impermeable sediments.[9][10] During wave loading, usually cyclic undrained loading, e.g. seismic loading, loose sands tend to decrease in volume, which produces an increase in their pore water pressures and consequently a decrease in shear strength, i.e. reduction in effective stress.

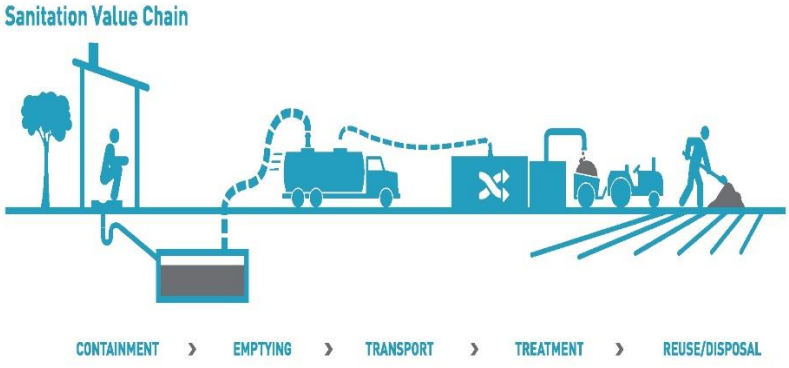
Deposits most susceptible to liquefaction are young (Holocene-age, deposited within the last 10,000 years) sands and silts of similar grain size (well-sorted), in beds at least metres thick, and saturated with water. Such deposits are often found along stream beds, beaches, dunes, and areas where windblown silt (loess) and sand have accumulated. Examples of soil liquefaction include quicksand, quick clay, turbidity currents and earthquake-induced liquefaction.

Depending on the initial void ratio, the soil material can respond to loading either strain-softening or strain-hardening. Strain-softened soils, e.g. loose sands, can be triggered to collapse, either monotonically or cyclically, if the static shear stress is greater than the ultimate or steady-state shear strength of the soil. In this case *flow liquefaction* occurs, where the soil deforms at a low constant residual

shear stress. If the soil strain-hardens, e.g. moderately dense to dense sand, flow liquefaction will generally not occur. However, cyclic softening can occur due to cyclic undrained loading, e.g. earthquake loading. Deformation during cyclic loading depends on the density of the soil, the magnitude and duration of the cyclic loading, and amount of shear stress reversal. If stress reversal occurs, the effective shear stress could reach zero, allowing cyclic liquefaction to take place. If stress reversal does not occur, zero effective stress cannot occur, and cyclic mobility takes place.

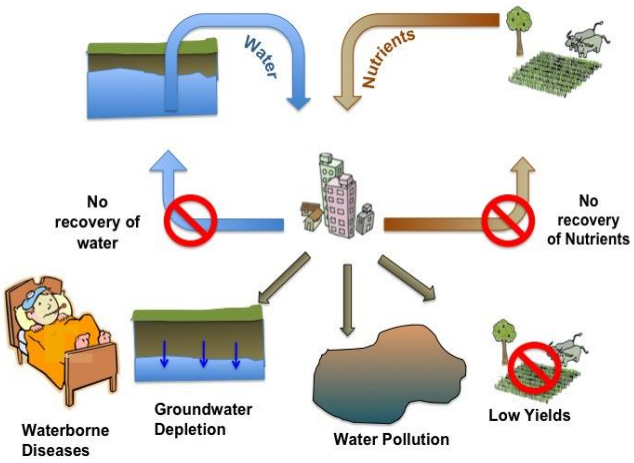
The resistance of the cohesionless soil to liquefaction will depend on the density of the soil, confining stresses, soil structure (fabric, age and cementation), the magnitude and duration of the cyclic loading, and the extent to which shear stress reversal occurs.

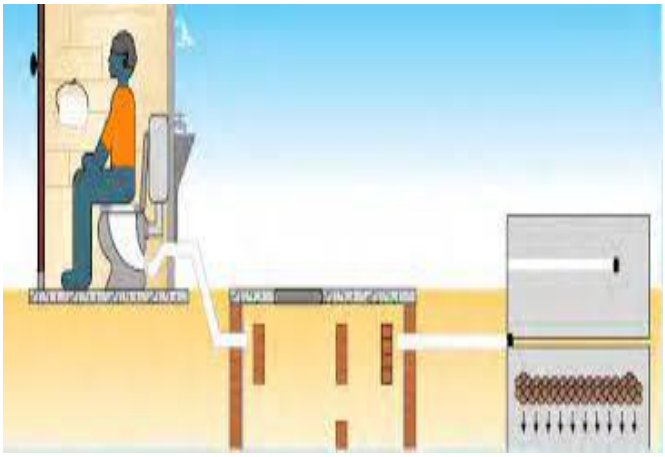
5.3 Sustainable sanitation



It is a sanitation system designed to meet certain criteria and to work well over the long-term. Sustainable sanitation systems consider the entire "sanitation value chain", from the experience of the user, excreta and wastewater collection methods, transportation or conveyance of waste, treatment, and reuse or disposal. The Sustainable Sanitation Alliance (SuSanA) includes five features (or criteria) in its definition of "sustainable sanitation": Systems need to be economically and socially acceptable, technically and institutionally appropriate and protect the environment and natural resources.[3]

The purpose of sustainable sanitation is the same as sanitation in general: to protect human health. However, "sustainable sanitation" attends to all processes of the system: This includes methods of collecting, transporting, treating and the disposal (or reuse) of waste.





5.4 Transportation Infrastructure/System

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

Impacts of transport infrastructure on spatial and regional development at local (urban) to international spatial levels with special attention to the notion "accessibility"

Sustainability in transport infrastructure and circular economies, which rely on technological developments and efficient transport facilities, is also essential in order to protect the current theories from the global environmental challenges faced by people today .Besides, sustainable investment in transport

infrastructure on the multi-modal transport system (MTS) highlights cost-effectiveness, efficiency, protection and promptness, job creation, and the boosting of trade.

As a result of multi-modal integration, sustainable investment in transport provides better links to products, inputs, and final goods so as to increase the production performance of the global supply chain. Better logistics and supply chains could open up access to previously inaccessible areas as well as connect key economic centers in a region with domestic markets. Similarly, the sustainability of intercity transport services entails large amounts of investments, and has complex impacts on traditional aviation services. Therefore, to ensure the sustainable growth of the transport networks of the country, we need to conserve resources, reduce energy use, protect the environment by creating economic transport and smooth transport and ensure multi-modal integration. In order to ensure continuous mobility based in particular on income, employment, and economic growth, it is essential to ensure sustainability in the transport infrastructure. Although the transport literature on related issues of sustainability has grown very little is known about sustainability in transport infrastructure research.

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5.5 Vertical Farming

Vertical farming is the practice of growing crops in vertically stacked layers. It often incorporates controlled-environment agriculture, which aims to optimize plant growth, and soilless farming techniques such as hydroponics, aquaponics, and aeroponics. Some common choices of structures to house vertical farming systems include buildings, shipping containers, tunnels, and abandoned mine shafts. As of 2020, there is the equivalent of about 30 ha (74 acres) of operational

vertical farmland in the world. The modern concept of vertical farming was proposed in 1999 by Dickson Despommier, professor of Public and Environmental Health at Columbia University. Despommier and his students came up with a design of a skyscraper farm that could feed 50,000 people. Although the design has not yet been built, it successfully popularized the idea of vertical farming. Current applications of vertical farmings 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.

5.6 Advantages of Vertical Farming:-

- Vertical farming ensures production of greens all year round in nontropical countries and is better than normal farming. Despommier stated that 1 acre of vertical farm can produce products almost equal to the amount of products produced by 30 acres of normal farmland on considering the number of crops produced each season.

- Vertical farming involves reduction or abandonment of the use of herbicides and pesticides. In some cases, vertical farming uses ladybugs and other biological controls when required.

- As the crops in a vertical farm are grown under a controlled environment, they are safe from extreme weather conditions such as droughts, hail, and floods.
- Hydroponic growing techniques help in water conservation by using about 70% less water than normal agriculture.
- Indoor farming reduces or eliminates the use of tractors and other large farm equipment that are commonly used on outdoor farms, thus reducing the burning of fossil fuel.According to Despommier, large-scale vertical farming could result in a significant reduction in air pollution and in CO2 emissions.
- Vertical farming is people friendly. Some hazards that can be avoided in vertical farming are accidents while operating heavy farming equipment and exposure to harmful chemicals.

Disadvantages of Vertical Farming:-

- Start-up costs are high in order to purchase land in central business districts.
- The number of crops grown is sometimes less than rural farming.
- Production volumes are also not as large as conventional farming and scaling-up may add cost and complexity.
- Raising investment capitals and training a skilled workforce are also challenges in vertical farming.

Methodology

Step 1: Study of Vertical Farming.

Step2: Modern Techniques of farming.

Step 3: Selected Hydroponic technique to implement in vertical farming.

Step 4: Site visit.

Step 5: Study of Hydroponic system.

Step 6: ModelingofHydroponicsetupfor1M*1M.

Step 7: CostanalysisofHydroponicsetupfor1M*1M.

Step 8: Costanalysisof100M*100MareainVertical Farming.

Step 9: Costanalysisof100M*100MareainHorizontal Farming.

Step 10: Cost comparison between Vertical Farm in Horizontal Farming.

Step 11: Proposing G+11structure and G+3 warehouse

5.7 Corrosion Mechanism, Prevention & Repair Measures of RCC Structure

Reinforcement of concrete with steel is done to strengthen the structural element in tension as concrete is weak in it, but structures do fail as a result of corrosion attack on steel . It has become a serious, widespread problem worldwide, with costly repairs now in billions of dollars annually. In addition, the numerous intangible losses such as the energy needed to manufacture replacements of corroded objects. The steel corrosion in reinforced concrete reduces its durability and can even result in failure of the structure. Corrosion is a phenomenon which results in the deterioration or destruction of a material when they are exposed to different environmental condition. Corrosion of concrete involves an electrochemical process in which both flow of electrical currents and chemical reactions occur. The steel in reinforced concrete structures is in passive Figure 94 Repair of RCC Structure.conditions and are protected by a thin layer of oxide which is due to the alkalinity of concrete (pH Between 12 to 13).

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 imprompt 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 an) 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.

Concrete is one of the most widely used construction materials in the world, with many key advantages such as formability and durability[i]. Concrete also has high compressive strength, which is defined as the maximum compressive load a body can bear prior to failure. However, concrete is actually quite weak in

tensile strength, meaning that concrete is not an ideal material if the structure is subjected to tension.

Due to this inherent weakness in concrete, another material is needed to strengthen the tensile strength and avoid unacceptable cracking and even failure. Steal reinforcing bars can be added to resist the tension a load could cause for the structure. However, with the added material, new problems arise, such as corrosion of the steel rebar, which can cause a new set of issues for a construction project.

Overall, corrosion is a natural and costly process of destruction, just like earthquakes, floods and the occasional destruction caused by a tornado.[ii] However, unlike the onslaught of a tornado or earthquake, corrosion is silent and can be prevented, or at least controlled. The ASTM (American Society for Testing and Materials) defines corrosion as: 'the chemical or electrochemical reaction between a material and its environments that produces a deterioration of the material'[iii]. In the same vein, corrosion is a naturally occurring process and all natural processes tend toward the lowest possible energy states.

Corrosion of reinforcing steel in concrete is a global problem, deteriorating structures at an extremely high rate. The issue makes up for more than 80 percent of all damage to reinforced concrete structures, continuing to rack up repair costs for countries[iv]. A 2011 report in the Journal of Climatic Change noted that the annual cost of corrosion worldwide is estimated to exceed $1.8 trillion[v]. With repair to steel in concrete climbing, sustainability measures cannot be feasibly met.

Corrosion

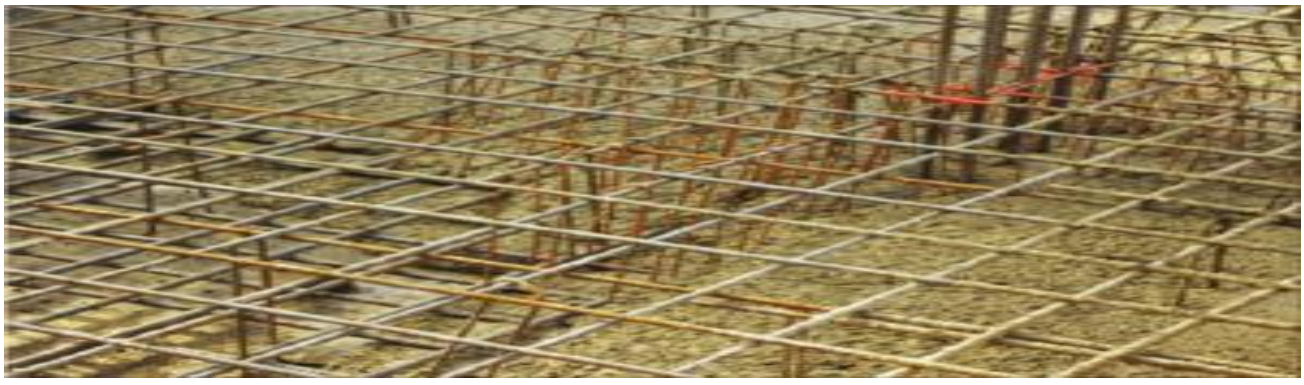
When the signs of damage became visible,the extent of corrosion on therein forcement steel generally has already reached an advanced stage.There are three essential components necessary for corrosion in reinforced concrete: steel, water,

and oxygen. Eliminating any one of these will prevent the chemical reaction and damage incurred due to corrosion. This is why there is no corrosion in dry concrete and also why concrete fully submerged in water has limited corrosion.Overall, concrete is a great host for rebar. Due to the high-alkalinity of concrete, the steel reinforcing bars are passivated by an iron oxide film (Fe_2O_3) that provides a protective layer to the steel. In this state, concrete normally provides reinforcing steel with corrosion protection. However, while hardening, concrete develops minute pores which become a potential source for the ingress of corrosive agents into the concrete. These corrosive agents, entering into the concrete through the voids, leads to the passive protection layer breaking down around the concrete. Without the passive iron oxide film protecting the steel, corrosion is able to commence at a much higher rate.

The passive layer can deteriorate over time due to atmospheric carbon dioxide (CO_2), which, through a process called carbonation, lowers the pH of the concrete until the passive layer becomes unstable. The passive layer can also be rapidly broken down by aggressive chemicals, such as chloride, that are present in coastal environments or used in de-icing chemicals. Once the passive layer is compromised, steel reinforcement corrodes when moisture and oxygen are present at the steel's surface.

The climatic conditions of an area have a great influence on the corrosion rate. In extreme climatic conditions in coastal regions, the rate of corrosion will be high. For example, the Gulf Coast has an extremely aggressive environment, characterized by high ambient temperature and humidity conditions, severe ground salinity with high levels of chlorides, and sulfates in the groundwater. Other factors accelerating the rate of corrosion are the poor quality of construction materials, particularly the aggregates, and the presence of high concentrations of sulfate salts in the service environment.

Negative effects



Steel reinforcement is needed for concrete to increase its tensile strength.
As mentioned earlier, corrosion is a natural process. Steel is a manufactured material produced from iron oxide or iron ore. Unfortunately, the energy added in the refining process also contributes to its instability. When a suitable environment or condition arises, steel releases energy and converts itself into iron oxide. This natural state of iron is a thermodynamically stable material.
The steel rebar used in concrete strengthens the structure by providing a solid tensile strength concrete normally lacks. When the steel begins to rust and produce pits or holes in its surface, a reduced strength capacity is seen, which negatively affects the structure's viability.
Corrosion begins to affect a concrete structure's integrity when the products of corrosion (i.e. rust) occupy a greater overall volume than the original steel. This expansion then creates tensile stresses in the concrete that cause the concrete to stain, crack, and spall. By the time the signs of damage become visible externally, as in on the outside of the concrete structure, the extent of the corrosion of reinforcement steel has reached an advanced stage. At this point, regardless of where the site is located, the rehabilitation costs will be expensive, and the repair process complicated. There are multiple steps on the way to corrosion, beginning with aggressive elements, such as chloride ions or carbon dioxide being present in the surrounding medium and penetrating the concrete. The second stage after 'initiation' is 'propagation,' which happens when these aggressive bodies are in rather high concentrations at the reinforcement level. The passive layer is gone and corrosion damages the structure at a much higher rate. [vii]
Subsequent to corrosion, cracks appear on the external concrete surface. Cracks are a direct path for corrosive agents to penetrate and reach the steel. These cracks will further progress and develop into spalls to the point where the functional service life is reached, prematurely. Therefore, water must be kept from penetrating the reinforced concrete and diverted away from attacking the steel rebar within.

Traditional methods to prevent corrosion

There are some methods for controlling the corrosion of reinforced concrete. An effective corrosion control system should extend the time to corrosion initiation or, reduce the corrosion rate of embedded steel, or do both.

Some of the traditional measures used to combat the corrosion of reinforced concrete are:

- Cathodic protection;
- Corrosion inhibitor admixtures; and
- Anti-corrosion coating.

When the steel begins to rust and produce pits or holes in its surface, strength is reduced.

Unfortunately, these traditional methods meant for tackling concrete corrosion have proven to be less effective than desired considering the current state of deteriorating infrastructure. Thick or dense concrete cover over reinforcing steel will help, but still leaves the concrete vulnerable to cracking and a whole new set of issues. Corrosion inhibitors provide only temporary protection. Cathodic protection is expensive and has its own downsides, and repair procedures often have short service lives and may be continuously reinstalled.

The constant repair of reinforced concrete infrastructure results in high lifecycle costs over the structure's required service life. Overall, the shortfall of traditional corrosion preventative measures is they do not adequately prevent or counteract the development of corrosive conditions in the concrete.

As mentioned, water is one of the three required elements for corrosion to occur. Water also acts as a carrier for chloride ions, which is the leading cause of deterioration of the passive layer that would otherwise protect the rebar. Hence, the critical factor in the corrosion of steel reinforcement, as well as concrete

deterioration all together, is the penetration of water and waterborne chlorides into concrete.
Therefore, the first line of defense against corrosion in reinforced concrete is to prevent the penetration of water. It is important to use concrete with low permeability and to use an appropriate amount of concrete cover for the application.

Waterproofing strategies

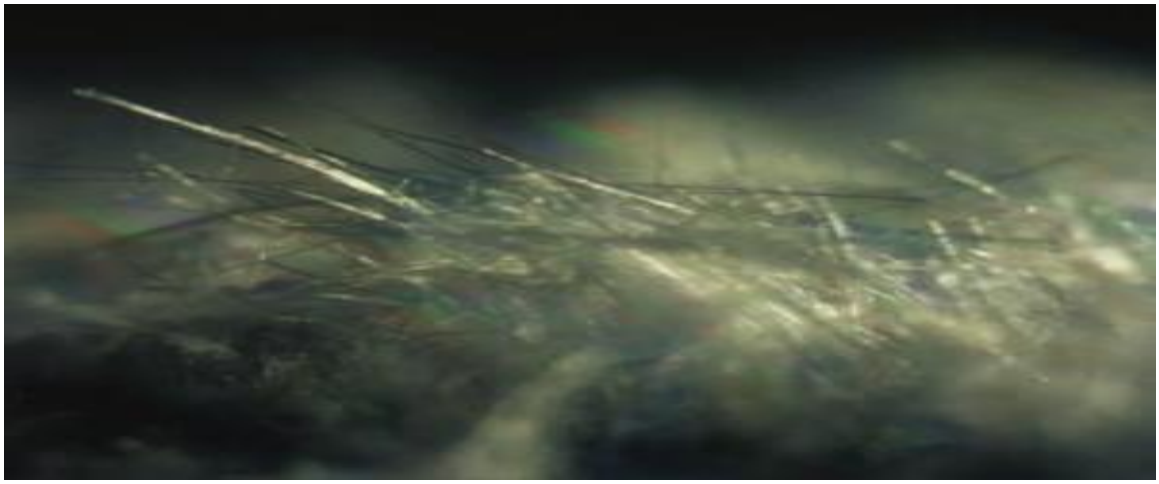
Concrete is a hard material with a network of openings such as capillaries, pores, cracks, and micro-cracks. Water can pass through unprotected concrete, acting as a carrier for aggressive chemicals like chloride, which will corrode reinforced steel rebar.

The membrane was damaged in multiple areas after the initial placement by construction materials used to complete the structure.
With the exception of mechanical damage, all the adverse influence on durability in concrete involves the transport of fluids through the concrete. Water permeability determines the rate of deterioration, which means if the concrete is protected against the ingress of water, the durability of the structure will increase and in the end the service life. As a result, reducing the permeability of the concrete is key. Unfortunately, as with the protection of reinforced concrete, traditional measures are not living up to expectations.
Surface-applied membranes or sheet membranes are one option to consider. This membrane forms a barrier against water penetration on the outside of the concrete. Another option is a fluid-applied membrane. In the same manner as a

sheet membrane, the fluid-applied membrane forms a barrier on the surface of the concrete to stop water penetration.

In both circumstances, the traditional waterproofing system is providing a barrier to the concrete. However, surface-applied waterproofing membranes have limitations and are at risk to puncture damage and failure. Moving away from the tradition, success has been obtained by replacing the need for an external membrane and replacing it with an internal membrane, thereby making the concrete the waterproofing barrier.

Integral crystalline waterproofing admixture



Millions of needles like crystals grow to stem the flow of water within reinforced concrete.

A permeability-reducing admixture suitable for hydrostatic conditions (PRAH) such as integral crystalline waterproofing (ICW) admixture is included with the concrete mix at batching or directly to the ready-mix truck. Instead of adding the installation of a sheet membrane or the application of a fluid membrane, an ICW eliminates that need by becoming part of the concrete mixture. The ICW admixture is effective in reducing concrete's permeability without costly materials, labor or time required to install the external methods.

The features of an ICW admixture provide many unique benefits to concrete enhancing the durability for the properties of concrete that have historically resulted in poor durability. Through the use of crystalline technology, the ICW admixture reduces the penetration of water and water-borne chemicals through three primary mechanisms:

1. crystallization and lowering the permeability of the concrete.

2. reducing the size and quantity of cracks in the concrete; and
3. self-sealing cracks and micro-cracks that form later in the life of a structure.

The effects of ICW's have been seen not only in numerous projects worldwide but also in a unique long term study that has been performed by the University of Hawaii.

5.8 Sewage treatment

It is process of removing contaminants from domestic and municipal

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

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

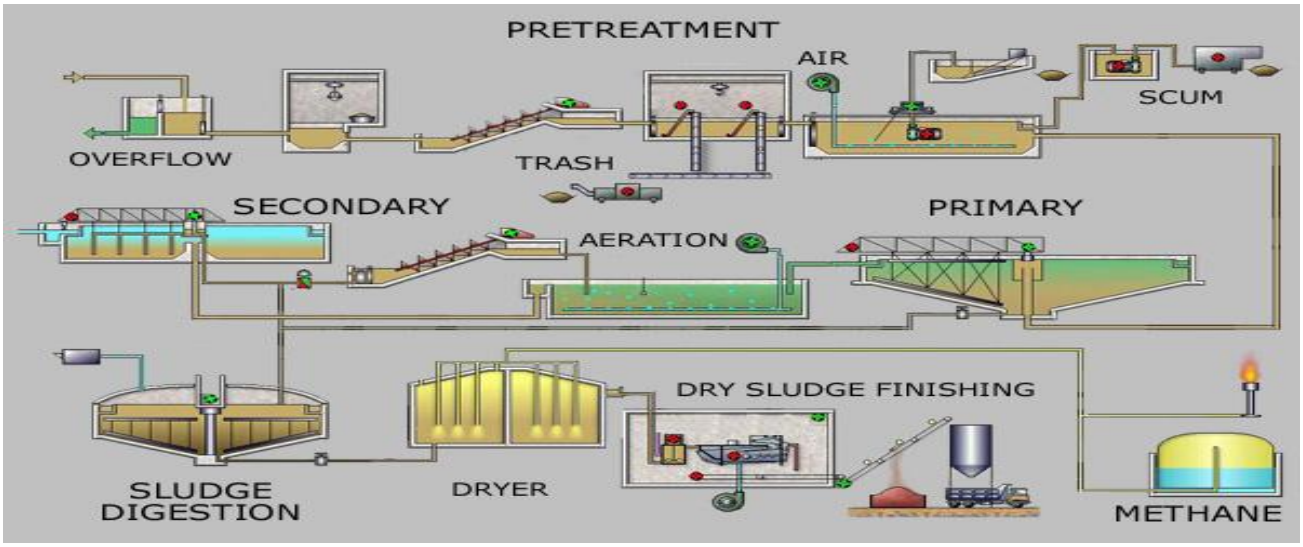
Overview

The aim of treating sewage is to produce an effluent that will do as little harm as possible when discharged to the surrounding environment, thereby preventing pollution.

The main processes involve removing as much of the solid material as possible, and then using biological processes to convert the remaining soluble material into a floc that entraps any remaining fine solids and which can then be settled as a sludge, leaving a liquid substantially free of solids, and with a greatly reduced concentration of pollutants.

Sewage treatment generally involves three main stages, called primary, secondary and tertiary treatment but may also include intermediate stages and final polishing processes.

- Primary treatment consists of temporarily holding the sewage in a quiescent basin where heavy solids can settle to the bottom while oil, grease and lighter solids float to the surface. The settled and floating materials are removed and the remaining liquid may be discharged or subjected to secondary treatment. Some sewage treatment plants that are connected to a combined sewer system have a bypass arrangement after the primary treatment unit. This means that during very heavy rainfall events, the secondary and tertiary treatment systems can be bypassed to protect them from hydraulic overloading, and the mixture of sewage and storm-water only receives primary treatment.[7]
- Secondary treatment removes dissolved and suspended biological matter. Secondary treatment is typically performed by indigenous, water-borne micro-organisms in a managed habitat. Secondary treatment may require a separation process to remove the micro-organisms from the treated water prior to discharge or tertiary treatment.
- Tertiary treatment is sometimes defined as anything more than primary and secondary treatment in order to allow ejection into a highly sensitive or fragile ecosystem such as estuaries, low-flow rivers or coral reefs.[8] Treated water is sometimes disinfected chemically or physically (for example, by lagoons and microfiltration)prior to discharge into a stream, river, bay, lagoon or wetland, or it can be used for the irrigation of a golf course, greenway or park. If it is sufficiently clean, it can also be used for groundwater recharge or agricultural purposes.



6. CHAPTER 6 Swatchh Bharat Abhiyan (Clean India)

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

- To accelerate the efforts to achieve universal sanitation coverage and to put focus on sanitation, the Prime Minister of India, Shri Narendra Modi, launched the Swachh Bharat Mission on 2nd October, 2014.

- The Mission Coordinator shall be Secretary, Department of Drinking Water and Sanitation (DDWS), Ministry of Jal shakti with two Sub-Missions – the Swachh Bharat Mission (Gramin) and the Swachh Bharat Mission (Urban). The Mission aims to achieve a Swachh Bharat by 2019, as a fitting tribute to Mahatma Gandhi on his 150th birth anniversary.

- People can make India clean in a number of ways. First of all, carrying a small poly-bag is a must. Most noteworthy, a recycled paper bag is the best. Indians must certainly use it to throw trash in dustbins.

- Indians probably throw trash on the street because they dislike carrying it. However, a recycled paper bag makes it easier to carry waste. Hence, Indians can carry this bag to the dustbin for waste disposal.

- Segregating wastes is also very important. It is something which many Indians ignore. Most noteworthy, the segregation of waste at home should be in 3 separate bins.

School campus

Cleaned Roads at Village

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

- Village administration processes the Clean India Mission guidelines for cleaning within the villages.
- Guidelines with the process of Implementation:
- Seven methods have been identified as an initiative,
  - Motivation of the people for the clean India mission.
  - Slogans and Poster preparations and distribution within the villages.
  - Door to door awareness programs and seminars by students to be done in the 8thsemester.
  - Village administrative officials will be given some suggestions for the improvement of the Clean-India Mission.
  - Persons from the NGO's will be met and will be given some suggestions.Village female and girls will be motivated through programs organized by the Sarpanch.
- **Actual Activity Done by Students for making your village Clean with Photograph**
  - Major Activities have been done by the students:
- **Preparation of the monitoring plan for cleaning**.
  - Students have carefully identified the policies and discussed it with the sarpanch and officials. Students suggested about **"Regular Monitoring of the cleaning of villages At least one in the week".**
- Door to door meetings of the students within the Villages.

Cleaned village

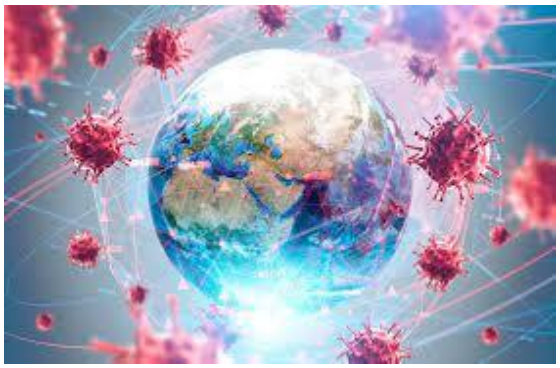
Panchayat Block

7. Chapter7: Village Condition due to Covid-19

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

In a bid to ensure that the new academic session is not affected by the pandemic, Gujarat government announced 'Home Learning' programme for Gujarati medium schools from June 15. Education Minister Bhupendrasinh Chudasama said in Gandhinagar that curriculum for students from Class III to XII will be covered in the educational programmes that will be aired on DD Girnar. Vande Gujarat channel will also show programmes for students of Class V to XII.

An estimated 70 lakh children are expected to benefit from the 'Home Learning' in Gujarat. Awareness posters against covid-19 also displayed on main gate of primary school, which ensures :-



1.Wash Hand Repetitively.

2. Wear Mask Properly.

3. Maintain Minimum 6ft Distance. Awareness posters against covid-19 also displayed outside every public ,

which ensures :- 1.Wash Hand Repetitively. 2. Wear Mask Properly. 3. Maintain Minimum 6ft Distance. At Ration shop there is a poster on which it is written —no mask no entry.

Total cases :- 25 Total deaths:-03 Positive covid-19 patients are taken to private hospitals in Palanpur. One who is covid-19 positive his/her home is locked for quarantine period of 14 days

Figure 110 Awareness posters At Public Buildings Figure 108'Home Learning' programme in Patosan

1.2 Activities Done by Students for allocated village with Photograph

We have suggested some measures to fight the covid-19 which are:-

- To Wash hands regularly with soap and water, or clean them with alcohol-based hand rub. To maintain at least 1 meter distance between you and people coughing or sneezing. To Avoid touching face.
- To Cover mouth and nose when coughing or sneezing.
- To stay home if feel unwell.Refrain from smoking and other activities that weaken the lungs.
- Practice physical distancing by avoiding unnecessary travel and staying away from large groups of people

. 7.3 Any other steps taken by the students / villagers At the beginning of covid-19 Gram panchayat has decided to stop entry of migrants to village.

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

8.1 Sustainable Design Planning Proposal (Prototype Design)- Part- I (Scenario / Existing Situation / Proposed Design in Auto cad / Recapitulation Sheet / Measurement Sheet / Abstract Sheet / Sustainability of Proposal)

➢ **Proposed Design in the Villages**:

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

❖ **Design Proposals**

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

➢ **Planning:**

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

➢ **Design Development:**

- Design development then kicks off with experienced design professionals creating architectural, structural, and engineering drawings, as needed. These designs should detail specifications of the project from the ground up, oftentimes with artist renderings. The designs should also include detailed descriptions and mockups.

➢ **Financials:**

- Financial models and budgeting should also be a key component in the pre-construction and design phase. Conceptual estimates are often created throughout the pre- construction phase and as a design is refined realistic cost estimates are updated. Any subcontractors and suppliers should provide construction cost estimates, logistics details, and schedules.

➢ **Permits:**

- Permitting is another important step that your commercial general contractors should handle on your behalf. It's important to ensure all appropriate permits are obtained not only to protect property value and guarantee code compliance, but also to save you money in the long run.

8.2 Designing of Public Health Centre.

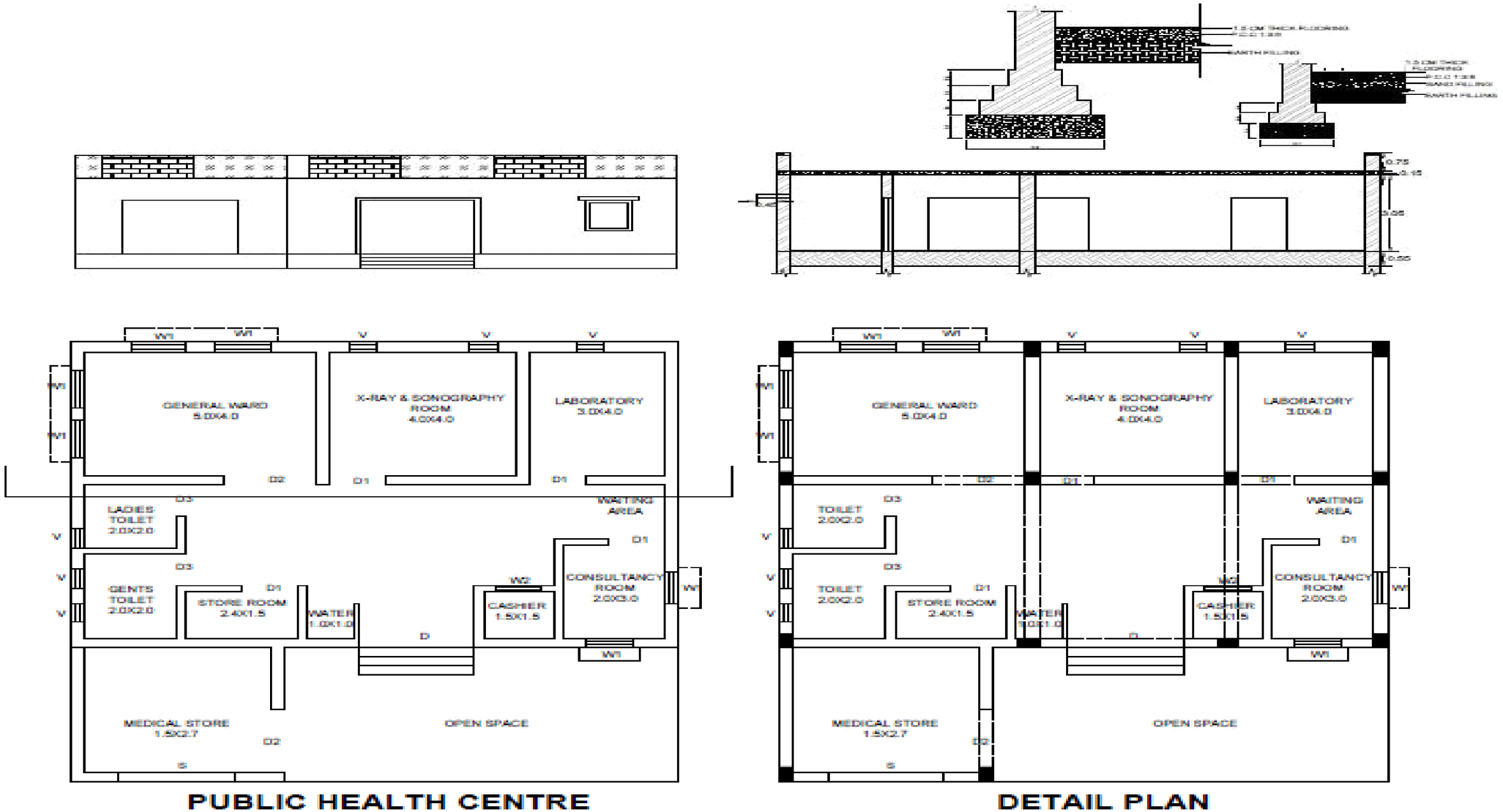


Figure 52: Proposed Public Health Centre (Plan, Section, Elevation)

TABLE 26: PROP. CONSTRUCTION WORK OF PUBLIC HEALTH CENTER AT- PATOSAN, TAL: - TALUKA PALANPUR, DIST:- BANASKANTHA

MEASUREMENT SHEET

ITEM	DESCRIPTION	NO	L	B/W	H/D	QUANTIY	UNITS
ITEM NO.:- 1							
	Excavation for Foundation For 300 mm thick wall L=66.70 m	1	66.70	0.9	2.7	162.08	Cu.m.
	For 200 mm thick wall L=16.4 m	1	16.4	0.7	2.7	30.99	Cu.m
	TOTAL					193.07	Cu.m
ITEM NO.:- 2	P.C.C. work in foundation						
	For 300 mm thick wall L=66.70 m For 200 mm thick wall	1	66.70	0.9	0.9	54.02	Cu.m.
	L=16.4 m	1	16.4	0.7	0.6	6.89	Cu.m.
ITEM NO.:- 3							
	Brick masonry work in Foundation For 200 mm thick wall 1st step						
	L=18.5	1	18.5	0.4	0.4	2.96	Cu.m
	2nd step						
	L=19.2	1	19.2	0.3	0.4	2.30	Cu.m
	3rd step L=19.9	1	19.9	0.2	0.45	1.79	Cu.m.

	For 300 mm thick wall 1st step						
	L=68.80	1	68.80	0.6	0.6	24.79	Cu.m
	2nd step						
	L=69.50	1	69.50	0.5	0.6	20.85	Cu.m
	3rd step L=70.2	1	70.2	0.4	0.6	16.85	Cu.m.
	4th step L=72.93	1	72.93	0.3	0.45	9.84	
	Total Brick masonry Up to P.L.					79.38	Cu.m.
ITEM NO.:- 4	Earth filling work						
		106.09-21.22-49.469				35.401	Cu.m.
ITEM NO.:- 5							
	Brick masonry work in super structure						
	For 200 mm thick wall						
	L=19.90	1	19.9	0.2	3.05	17.14	Cu.m.
	For 300 mm thick wall	1	70.9	0.3	3.05	64.87	Cu.m.
	L=70.90						
	Deduction for door & Window (for 200 mm wall)						
	D	1	2.7	0.2	2.1	1.134	Cu.m.
	D 1	4	1.2	0.2	2.1	2.016	Cu.m.
	D 2	1	1.5	0.2	2.1	0.63	Cu.m.
	D 3	2	0.9	0.2	2.1	0.756	Cu.m.
	W 1	6	1.8	0.2	1.2	2.592	Cu.m.

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

	Total deduction(4)					1.0005	Cu.m.
	Work						
	TOTAL (200)					3.137	Cu.m
	TOTAL (300)					36.06	Cu.m
	GRAND TOTAL					39.25	Cu.m
ITEM NO.:- 6							
	D.P.C. at plinth level						
	For 200 m.m. wall						
	L = 16.4 m	1	16.4	0.7	0.6	6.89	Cu.m
	For 300 mm wall					54.02	Cu.m
	L =66.70 m	1	66.70	0.9	0.9		
	TOTAL					60.91	Cu.m
ITEM NO.:- 7							
	Earth filling in plinth	1	5	4	0.6	12	Cu.m.
		1	4	4	0.6	9.6	Cu.m.
		1	3	4	0.6	7.2	Cu.m.
		1	2	2	0.6	2.4	Cu.m.
		1	2	2	0.6	2.4	Cu.m.
		1	2.4	1.5	0.6	2.16	Cu.m
		1	1	1	0.6	0.6	Cu.m
		1	1.5	1.5	0.6	1.35	Cu.m
		1	2	3	0.6	3.6	Cu.m
		Total Earth Feeling				41.31	Cu.m.
ITEM NO.:- 8							
	5 cm thick flooring	1	5	4		20	Sq.m.
	between walls	1	4	4		16	Sq.m.
		1	2	2		4	Sq.m.
		1	2	2		4	Sq.m.
		1	2.4	1.5		3.6	Sq.m.
		1	1	1		1	Sq.m

		1	1.5	1.5		3.25	Sq.m
		1	3	4		12	Sq.m
		1	2.5	5.2		13	Sq.m
		1	2	3		6	Sq.m
		1	1.5	2.7		4.5	Sq.m
		1	2.7	1.5		4.05	Sq.m
	TOTAL					89.95	Sq.m
		Total Flooring Work				55.280	Sq.m.
ITEM NO.:- 9							
	15cm thick inside smooth plaster work	2	5		3.05	30.5	Sq.m.
		3	4		3.05	36.6	Sq.m.
		5	4		3.05	61	Sq.m.
		3	3		3.05	27.45	Sq.m.
		2	4		3.05	24.4	Sq.m.
		4	2		3.05	24.4	Sq.m.
		4	2		3.05	24.4	Sq.m.
		2	2.4		3.05	146.4	Sq.m.
		2	1.5		3.05	9.15	Sq.m.
		4	1		3.05	12.2	Sq.m.
		4	1.5		3.05	12.2	Sq.m.
		2	2		3.05	18.3	Sq.m.
		2	3		3.05	18.3	Sq.m.
		1	1.2		3.05	3.66	Sq.m.
		3	1.5		3.05	13.72	Sq.m.
		2	2.7		3.05	16.47	Sq.m.
							Sq.m.
		Total Plaster Work				347.39	Sq.m.
	Deduction						
	D	0.5x1	2.7		2.1	2.83	Sq.m.
	D1	0.5x1	1.2		2.1	15.12	Sq.m.
	D2	0.5x2	1.5		2.1	3.15	Sq.m.
	D3	0.5x6	0.9		2.1	5.67	Sq.m.

	W1	0.5x4	1.8		1.2	4.32	Sq.m.
	W2	0.5x1	1.2		0.9	0.54	Sq.m.
	V	0.5x6	6.0		0.6	1.08	Sq.m.
	S	0.5*1	1.0		2.8	1.4	
		Total Deduction				34.1	Sq.m.
		Net Outer Plaster				313.28	Sq.m.
ITEM NO.:- 10							
	White washing inside	As Per Internal Plaster				313.28	Sq.m.
ITEM NO.:- 11							
	Concreting work in	1	13.2	9.1	0.15	18.01	Cu.m.
	Slab	1	2.1	3.0	0.15	0.945	Cu.m.
	TOTAL					18.955	Cu.m.

TABLE 26.2: PROP. CONSTRUCTION WORK OF PUBLIC HEALTH CENTRE AT-PATOSAN, TAL:-PALANPUR, DIST:-BANASKANTHA

ABSTRACT SHEET

Sr.	Item description	Quantity	Rate	Per	Amount
1.	Excavation work	193.07	150	Cu.m.	28960
2.	P C.C	61.02	3000	Cu.m.	183060
3.	Brickwork in Foundation	79.38	3100	Cu.m.	246078
4.	Brickwork in superstructure	39.25	3500	Cu.m.	137375
5.	Plastering	313.28	140	Sq.m.	43860
6.	Flooring	89.95	850	Sq.m.	76458
7.	R.C.C slab	18.955	4900	Cu.m.	92878
8	Painting	313.28	25	Sq.m.	7832
				Total Rupees	816501
	Conti….....			05.00%Rupees	40825
	10% contractor charges				81650
				2% water charges	16330
	Total Amount Rupees				955306

8.3 Design of Government Grocery Shop

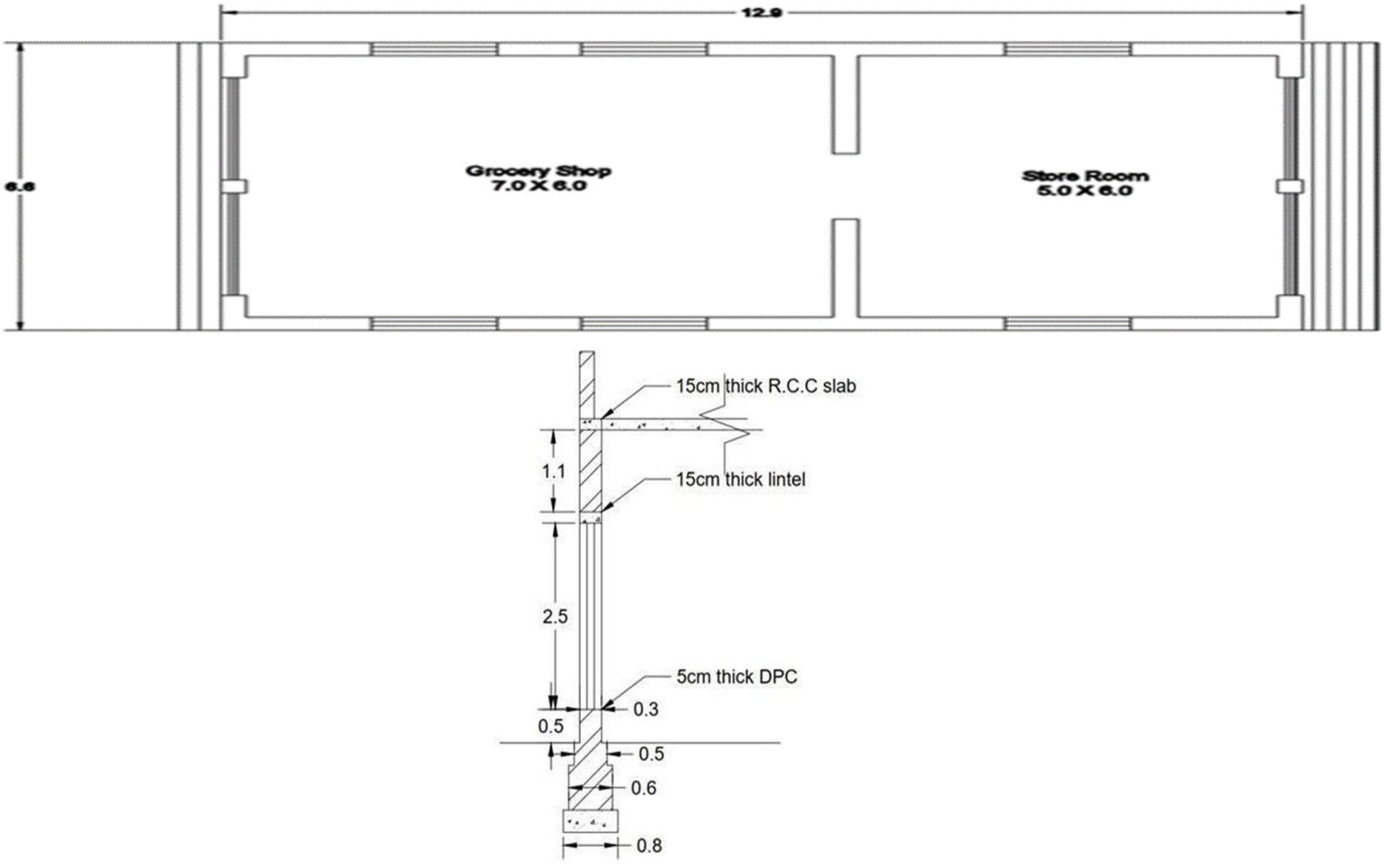


Figure 62 Proposed Design of Government Grocery Shop

Measurement Sheet of Grocery Shop

PROP. CONSTRUCTION WORK OF GOVT GROCERY STORE AT- PATOSAN, TAL:- PALANPUR, DIST:BANASKANTHA							
MEASUREMENT SHEET							
ITEM	DESCRIPTION	NO	L	B/W	H/D	QUANTIY	UNITS
ITEM NO.:- 1							
	Excavation for						
	Foundation						
	L= 43.35	1	43.35	0.75	1.35	43.89	Cu.m.
	TOTAL QTY					43.89	Cu.m.
ITEM NO.:- 2							
	C.C. work in foundation						
	L=43.35 m	1	43.35	0.75	0.3	9.75	Cu.m.
	TOTAL QTY					9.75	Cu.m
ITEM NO.:- 3							
	Brick masonry work in						
	Foundation						
	1st step						
	L=43.5 m	1	43.5	0.6	0.6	15.66	Cu.m.
	2nd step						
	L= 43.65 m	1	43.65	0.45	0.45	8.84	Cu.m.
	Total Brick masonry					24.50	Cu.m.
	work in foundation						
	Brick masonry work						
	for step						
	1st step	1	6.6	0.6	0.3	1.19	Cu.m.
	2st step	1	6.6	0.3	0.3	0.59	Cu.m.
	Total Brick masonry					1.78	Cu.m.
	work for step						
ITEM	No 4						
	Earth filling work	1	12.9	6.6	0.45	38.31	Cu.m.

ITEM NO.:- 5							
	D.P.C work						
	L=43.8 m	1	43.8	0.3		13.14	Sq.m.
ITEM NO.:- 6							
	Brick masonry work in						
	super structure						
	L=43.8 m	1	43.8	0.3	4.2	55.19	Cu.m.
	Deduction for door &						
	Window						
	Door – D	1	1.5	0.3	2.1	0.945	Cu.m.
	Window – W	6	1.2	0.3	1.6	3.46	Cu.m.
	Shutter	4	2.35	0.3	2.5	7.05	Cu.m.
	Deduction for lintel						
	Door – D	1	1.5	0.3	0.15	0.0675	Cu.m.
	Window – W	6	1.2	0.3	0.15	0.324	Cu.m.
	Shutter	4	2.35	0.3	0.15	0.423	Cu.m.
	Total Brick masonry						
	Work						
	= 55.19 – 12.27					42.92	Cu.m.
ITEM NO.:- 7							
	Lintel work	1	43.8	0.3	0.15	1.97	Cu.m.
ITEM NO.:- 8							
	Internal plaster work	2	7		3.75	52.5	Sq.m.
	Room – 1	2	6		3.75	45	Sq.m.
	Celling	1	7	6		42	Sq.m.
	Room – 2	2	5		3.75	37.5	Sq.m.
		2	6		3.75	45	Sq.m
	Celling	1	5	6		30	Sq.m.
	Deduction for door &						
	Window						
	Window – W	½ x 6	1.2		1.6	5.76	Sq.m.
	Door – D	½ x 1	1.5		2.1	1.575	Sq.m.
	Shutter	½ x 4	2.35		2.5	11.75	Sq.m.

	Work						
	= 252 – 19.08					232.915	Sq.m.
ITEM NO.:- 9							
	Internal White wash as Per					232.915	Sq.m.
	Above						
ITEM NO.:- 10							
	Brick masonry work	1	37.8	0.2	0.9	6.80	Cu.m.
	For parapet wall						
ITEM NO.:- 11							
	External plaster work						
	For long wall	2	12.9		6.2	159.96	Sq.m.
	For short wall	2	6.6		6.2	81.84	Sq.m.
	TOTAL					241.8	Sq.m.
	TOTAL DEDUCTION					17.51	Sq.m.
	Total External plaster work						
	= 241.8 – 17.51					224.29	Sq.m.
ITEM NO.:- 12							
	External white wash as per above					224.29	Sq.m.
ITEM NO.:- 13							
	Flooring work Room - 1	1	7	6		57.6	Sq.m.
	Room - 2	1	5	6		30	Sq.m.
	Door seal	1	1.5	0.3		1.8	Sq.m.
	Seal for shutter	4	2.35	0.3		2.82	Sq.m.
	Flooring for stair	2	6.6	0.3		3.96	Sq.m.
	Total Flooring work					96.18	Sq.m.
ITEM NO.:- 14							
	Skirting work Room - 1	2	7			14	m.
		2	6			12	m.
	Room - 2	2	5			10	m.
		2	6			12	m.

	Total Skirting work					48	m.
ITEM NO.:- 15							
	R.C.C Work for slab						
	L=12.9 m	1	12.9	6.6	0.15	12.77	Cu.m.
	B= 6.6 m						
	H= 0.15 m						

Table 39.1 Abstract Sheet of Grocery Shop

PROP. CONSTRUCTION WORK OF GOVT GROCERY STORE AT-
PATOSAN, TAL:- PALANPUR, DIST:BANASKANTHA

ABSTRACT SHEET

Sr.	Item description	Quantity	Rate	Per	Amount
1.	Excavation work	43.89	155	Cu.m.	6,802.95
2.	P C.C	9.75	3000	Cu.m.	29,250
3.	Brickwork in foundation	24.50	3200	Cu.m.	78,400
4.	Brickwork in superstructure	44.7	3500	Cu.m.	156,450
5.	Plastering	457.205	150	Sq.m.	68,580.75
6.	Flooring	96.18	855	Sq.m.	82,233.9
7.	R.C.C Work	14.74	4900	Cu.m.	72,226
8.	White Washing	457.205	15	Sq.m.	6,858.07
9.	Painting	457.205	25	Sq.m.	11,430.12
				Total Rupees	512,231.79
	Conti…..05.00% Rupees				25611.59
	10% contractor charges				51223.18
				2% water charges	10,244.64
	Total Amount Rupees				599,311.19
				Say Rupees	600,000
					(SIX LAKH ONLY)

8.4 Designing of Library

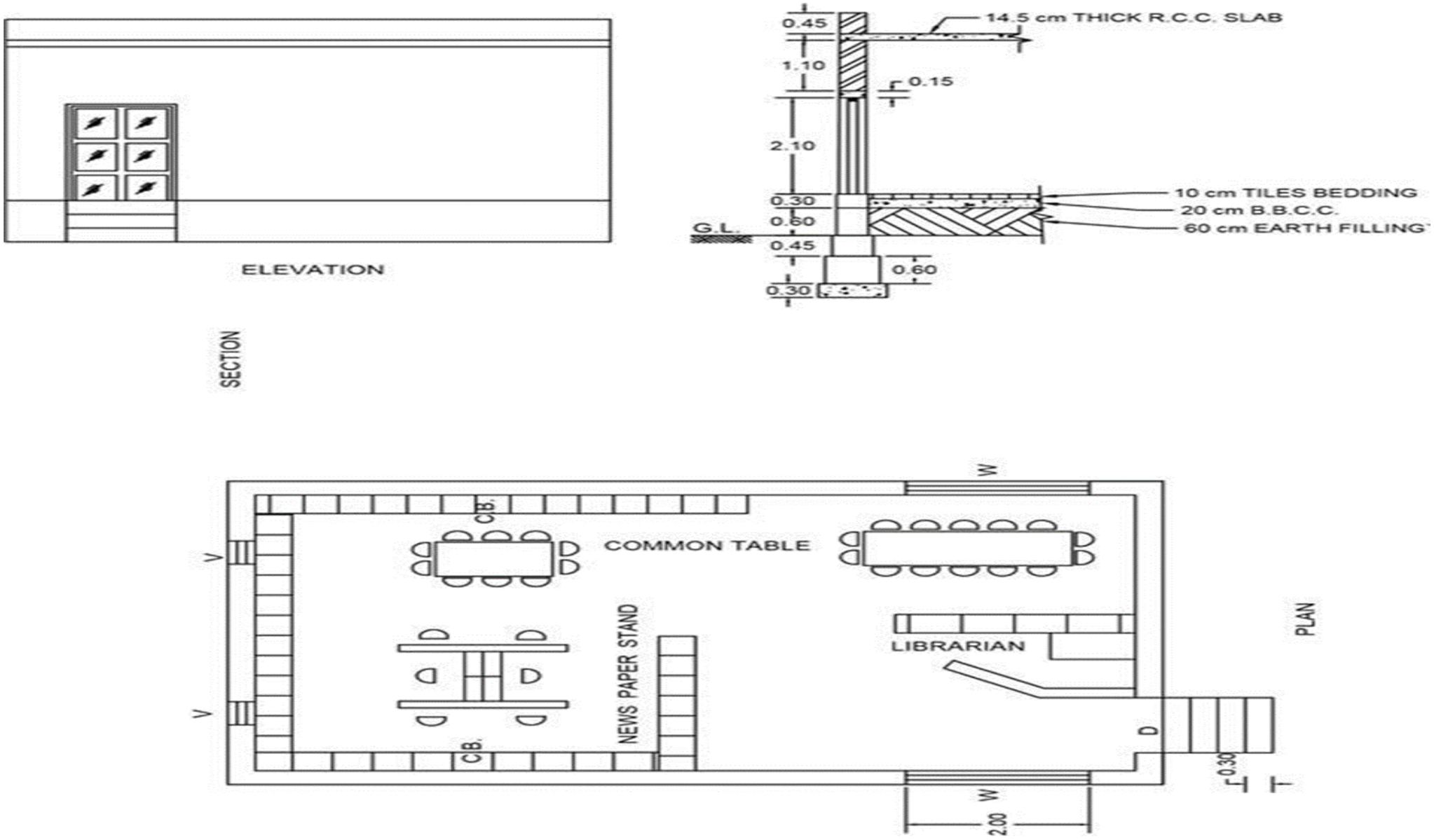


Figure 54: Design of Library

TABLE 29.2:PROP. CONSTRUCTION WORK OF LIBRARY AT, PATOSAN, TAL:- TALUKA PALANPUR, DIST:- BANASKANTHA

MEASUREMENT SHEET

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

ITEM NO.:- 4							
	Earth filling work		9.6	6	0.45	25.92	
ITEM NO.:- 5							
	D.P.C work						
	L=32.4 m	1	32.4	0.3		9.72	Rmt
ITEM NO.:- 6							
	Brick masonry work in						
	super structure						
	L=32.4 m	1	32.4	0.3	3.35	3.35	Cu.m.
	Deduction for door &						
	Window						
	Door – D	1	1.2	0.3	2.1	0.756	Cu.m.
	Window – W	2	2	0.3	1.2	1.44	Cu.m.
	Ventilator – V	2	0.5	0.3	0..5	0.5	Cu.m.
	Deduction for lintel						
	Door – D	1	1.5	0.3	0.15	0.0675	Cu.m.
	Window – W	2	2.3	0.3	0.15	0.207	Cu.m.
	Ventilator – V	2	0.8	0.3	0.15	0.072	Cu.m.
	Total Brick masonry						
	Work						
	= 32.56 – 5.038					27.552	Cu.m.
ITEM NO.:- 7							
	Lintel work as per						
	Above					2.692	Cu.m.
ITEM NO.:- 8							
	Internal plaster work	2	9.6		3.35	64.32	Sq.m.
		2	6.0		3.35	40.2	Sq.m.
	Celling	1	9.6	6		57.6	Sq.m.
	Deduction for door &						
	window						
	Window – W	½ x 2	2		1.2	2.4	Sq.m.
	Door – D	½ x 1	1.2		2.1	1.26	Sq.m.
	Ventilation – V	½ x 2	0.5		0.5	0.22	Sq.m.
	Total internal Plaster						
	work						

	=162.12 – 3.91					158.21	Sq.m.
ITEM NO.:- 9							
	White wash as per					158.21	Sq.m.
	above						
ITEM NO.:- 10							
	Brick masonry work	1	32.4	0.20	0.45	2.916	Cu.m.
	For parapet wall						
ITEM NO.:- 11							
	External plaster work						
	For long wall	2	10.2		4.845	98.80	Sq.m.
	For short wall	2	6.6		4.845	63.95	Sq.m.
	Inner side of parapetwall	1	32.4		0.45	14.58	Sq.m.
	Top of parapetwall	1	32.4	0.2		6.48	Sq.m.
	TOTAL					183.85	Sq.m.
	Deduction for door &						
	window						
	Door – D	½ x 1	1.2		2.1	1.26	Sq.m.
	Window – W	½ x 2	2		1.2	2.4	Sq.m.
	Ventilation – V	½ x 2	0.5		0.5	0.25	Sq.m.
	TOTAL DEDUCTION					3.91	Sq.m.
	Total External plaster work						
	=183.85 – 3.91					179.94	Sq.m.
ITEM NO.:- 12							
	External white wash as per above					179.94	Sq.m.
ITEM NO.:- 13							
	Flooring work	1	9.6	6		57.6	Sq.m.
	Door seal	1	1.2	0.3		0.36	Sq.m.
	Flooring for stair	3	1.2	0.3		1.058	Sq.m.
	Total Flooring work					59.04	Sq.m.
ITEM NO.:- 14							

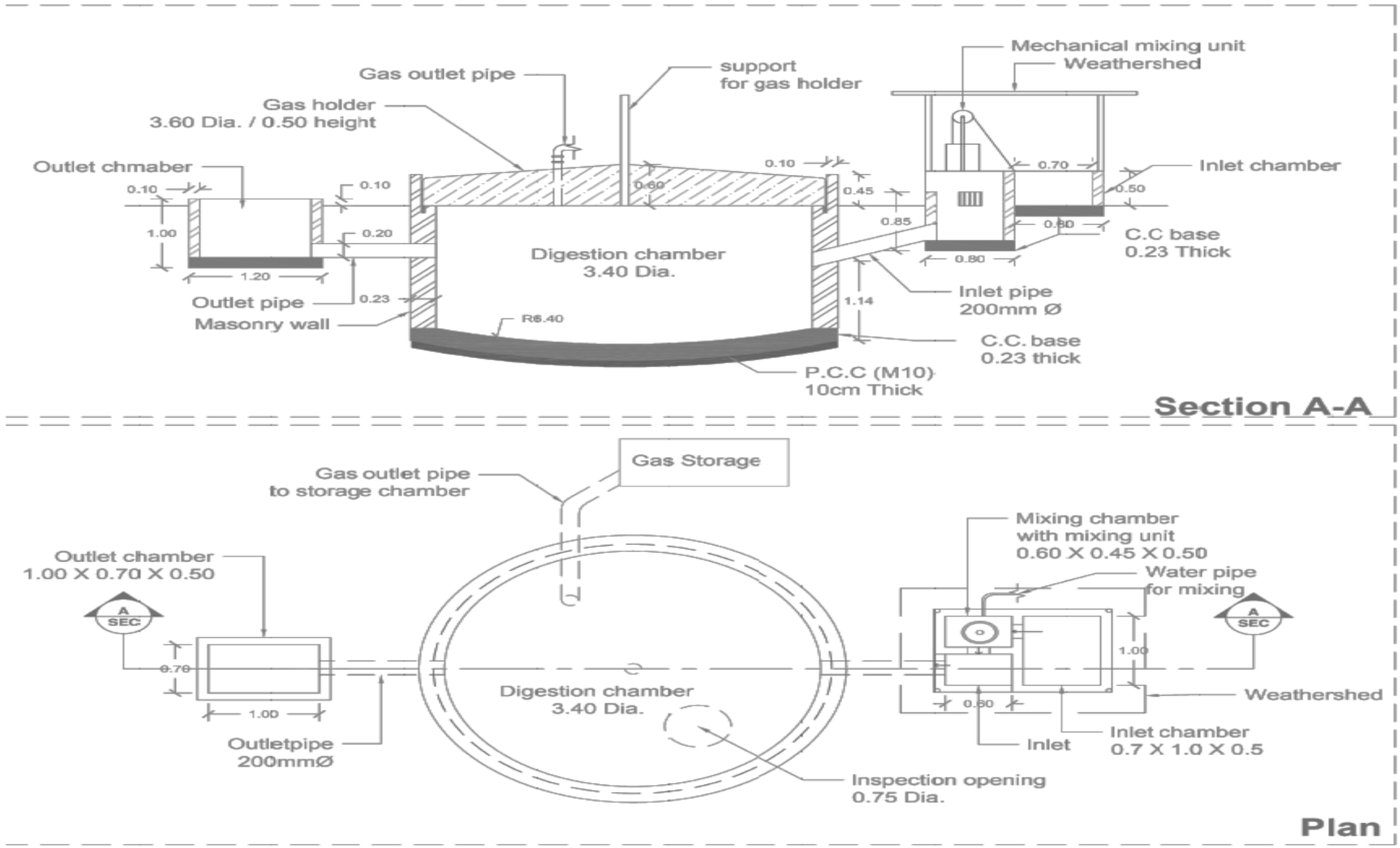
		2	6			12	Sq.m.
	Total Skirting work					31.2	Sq.m.
ITEM NO.:- 15							
	R.C.C Work for slab						
	L=10.2 m	1	10.2	6.6	0.145	9.76	Cu.m.
	B= 6.6 m						
	H= 0.145 m						
	R.C.C work for beam						
	L=6.6 m	4	6.6	0.3	0.5	3.96	Cu.m.
	B=0.3 m						
	H= 0.5 m						
ITEM NO.:- 16							
	Formwork for beam						
	Bottom	2	6	0.3		3.6	Sq.m.
	Side	8	6.6		0.5	26.4	Sq.m.
	end	8		0.3	0.5	1.2	Sq.m.
	Formwork for slab						
	Bottom	1	9	6		54	Sq.m.
	Long side	2	10.2		0.15	3.06	Sq.m.
	Short side	2	6.6		0.15	1.98	Sq.m.
	Total form work					90.24	Sq.m.

TABLE 29.2:PROP. CONSTRUCTION WORK OF LIBRARY AT, PATOSAN, TAL:- TALUKA PALANPUR, DIST:- BANASKANTHA

ABSTRACT SHEET

Sr.	Item description	Quantity	Rate	Per	Amount
1.	Excavation work	4967.75	4967.75	4967.75	4967.75
2.	P C.C	21870	21870	21870	21870
3.	Brickwork in Foundation	101773	101773	101773	101773
4.	Brickwork in superstructure	106638	106638	106638	106638
5.	Plastering	50722.5	50722.5	50722.5	50722.5
6.	Flooring	53136	53136	53136	53136
7.	R.C.C slab	47824	47824	47824	47824
8.	Beams	57420	57420	57420	57420
9.	Painting	8453.75	8453.75	8453.75	8453.75
				Total Rupees	452805
	Conti…			05.00% Rupees	22640.3
	10% contractor charges				45280.5
				2% water charges	9056.1
	Total Amount Rupees				529782
				Say Rupees	530000.00

8.5 Design of Bio Gas Plant



- Bio gas plant is one of the plants for renewable energy sources. It transforms rural village in to clean village and provide gas as energy source and gives fertilizer at end.
- Day to day operation
- Daily 5000 - 5500 kg cow dung is fed into the plant. The amount of cow dung fed varies with number of cattle present (500/animal/day). Poultry waste and kitchen waste can also be added if it is available.
- Equal amount of water is added in the inlet tank, mixed (manually), and let in the digester. Water is procured manually from nearby wells (Maximum 50 feet away).
- The gas collected in the dome after digestion is used as and when required. The usability of gas depends on its pressure inside the dome.
- The output slurry is dried and used as manure in beneficiary's own farms. Initial cost of the plant

BASIC THINGS:-
Total numbers of animals in village = 500
As per standard data assume per day dung of animal=10.5 Kg.
So total per day dung = 500 * 10.5 =5250 Kg. /day

DESIGN OF DIGESTER:-
Assume retention period (RT) = 70 days.
Assume mixing proportion of solid and water is 1:2.
Now total amount of slurry per day (Sd) = Total per day dung + Water amount
= 5250 + (2*5250)
= 15750 Kg. / day
= 15.75 3 / day
Digester volume (Vd) = Sd * RT
= 15.75 * 70
= 1102.5
Assume cylinder shaped biogas plant.
Provide total one numbers of units in different areas,
So, digester volume becomes for one unit = 1102.5/1
= 1102.5 3
So, provide = 1100 3
Total digester volume (Vd) = π2 h
1100 = π210 (assume h=10m) So dimensions of digester are H = 10 m
R = 6 m

DESIGN OF GAS HOLDER:-
Assume digester temperature= 26-28 ˚C
Now from following fig find Gd by taking RT=70 days Specific gas production Gd = 37 Lit. / Kg. / day
Daily gas production G = Gd X Feed volume

= 37 X 5250
= 194250 Lit.
= 194.25 3
Now assume gas holder capacity = 60
Gas holder volume = Daily gas production X Capacity of holder
= 194.25 X 0.6
= 116.55 3
So, take Gas holder volume = 120 3
Now for 1 unit provide volume of holder of each unit = 120 / 1
= 120
Take It = 120 m3Provide cylinder shaped holder; so…
Volume= π2h 120 = 3.14 X
2X1
(assume h=1m) R = 6m
So, dimensions of Gas holder are, H = 1 m
R = 6 m
Design of Inlets and Outlets:-
Total volume of slurry mixes per unit = 15.75 / 1
= 15.75 3 / day
Assume two-time filling operation in plant.
So, take total volume of slurry = 15.75 ÷ 2 = 7.87 3/ day
Take it = 8 3/ day Provide rectangular tank…
Total volume for one time mixing of slurry= L X B X H 8 = L X B X 1 (assume H=1m)
Dimension of inlet are L = 3 m
B = 3 m H = 1 m
Here 8 m3 / day required < 9 m3 / day provided.
Hence ok
Provide same size for outlet tank also.

Table 32 Measurement sheet for Bio gas Plant.

Sr. No.	Description of Item	Nos.	Length (m)	Width (m)	Height (m)	Quantity (cum)	Total Quantity
1.	Excavation for foundation.						
	Inlet chamber.	1	0.90	1.20	0.25	0.270	
		1	0.70	0.70	0.25	0.122	
		1	0.70	0.70	0.75	0.367	

	Digester chamber.	1	π x (3.4	86)^2	2.33	27.202	
	Outlet chamber.	1	0.90	1.00	01.00	0.900	
	For Inlet and Outlet pipe.	2	0.90	0.30	0.80	0.432	29.293cum
			Total excavation			29.293	
2.	P.C.C. in foundation.						
	Inlet chamber.	1	0.90	1.20	0.10	0.108	
		1	0.70	0.70	0.10	0.049	
		1	0.70	0.70	0.10	0.049	
	Digester chamber.	1.10	π x (3.4	86)^2	0.10	1.286	
	Outlet chamber.	1	0.90	1.00	0.10	0.090	
			Total P.C.C.			1.582	1.582cum
3.	Cement Concrete for foundations.						
	Inlet chamber.	1	0.90	1.20	0.23	0.248	
		1	0.70	0.70	0.23	0.112	
		1	0.70	0.70	0.23	0.112	
	Digester chamber.	1.10	π x (3.4	86)^2	0.23	2.960	
	Outlet chamber.	1	0.90	1.00	0.23	0.207	
		Tota	l C.C. work in foun		dation	3.639	3.639cum
4.	**Masonry work.**						6.375cum

	Inlet chamber.	1	4.80	0.10		0.50	0.240	
		1	1.40	0.10		0.70	0.098	

	Digester chamber. Length = $2\pi r$ $= (2\ X\ \pi\ X\ 1.93)$	1	12.12	0.23		1.77	4.934	
		1	17.34	0.10		0.45	0.780	
	Outlet chamber.	1	3.80	0.10		0.85	0.323	
		Total masonry work					6.375	
5.	Plastering double coat water proof.							
	Inlet chamber.	1	3.40	-		0.50	1.700	
		1	2.80	-		1.15	3.220	
	Digester chamber.	1	21.36	-		1.77	37.807	
		1	23.00	-		1.00	23.000	
	Outlet chamber.	1	3.40	-		0.85	2.890	68.617sq
			Total plastering wor			k	68.617	mt
6.	200mm Dia. Pipe required.	1	2.33mt					2.33mt
7.	Mechanical mixing unit.	1	1nos					1nos

Table 33 Abstract sheet For Bio gas Plant.

Description of item	Quantity	Unit Rate	Unit	Total amount (Rs.)
Excavation for foundation for depth 1.5mt to 3.0mt including sorting out and stacking of useful material and disposing off the excavated stuff up to 50mt lead.	29.293	93.20	Cum	2730.108
Providing and laying cement concrete 1:4:8 and curing complete in foundation.	1.582	1898.0	Cum	3002.636

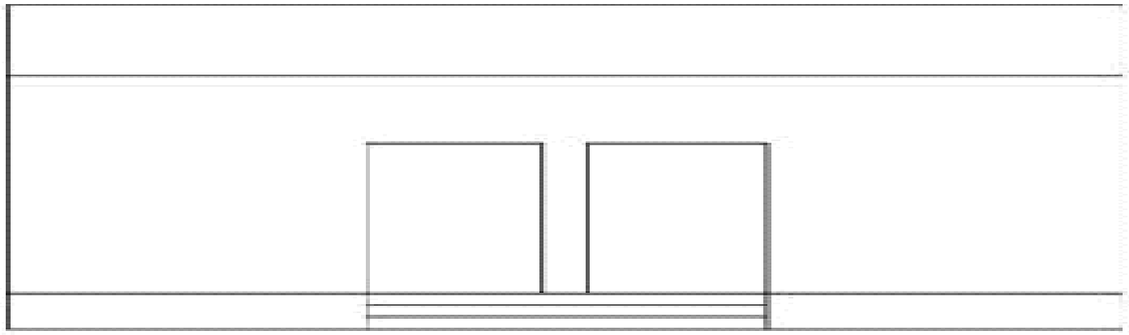
Providing and laying cement concrete work 1:1:2 and complete curing excluding cost of for work and reinforcement.	3.639	3327.00	Cum	12106.953

4.	Brick work using common burnt clay building brick in foundation in C: M (1:5).	6.375	3242.00	Cum	20667.750
5.	Providing 20mm thick plaster in single coat in single or half brick walls smooth in 1:3 (C:M).	68.617	137.00	Sq.mt.	9400.529
6.	R.C.C heavy duty pipe.	2.330	250.00	Rmt	582.500/-
		Total cost.			48490.476/-
		Add 2% water charge.			727.350/-
		Add 10% contactor's profit.			4849.047/-
		Subsidy Available by Govt.			-7000.00/-
		Net total cost			**47066.873/-**

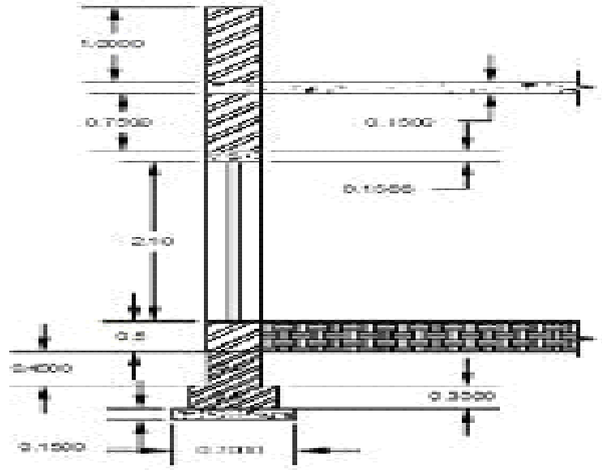
Table 34 Material Consumption sheet for Bio gas plant.

Sr. no.	Material	Quantity	Unit
1.	Cement (53grade)	72.00	Bags
2.	Sand	5.532	Cum
3.	Aggregate	4.244	Cum
4.	R.C.C. pipe	2.33	Rmt.
5.	Brick (19X9X9 cm)	3200	Nos.

8.6 Design Of Public Toilet



ELEVATION



SECTION AT X-X

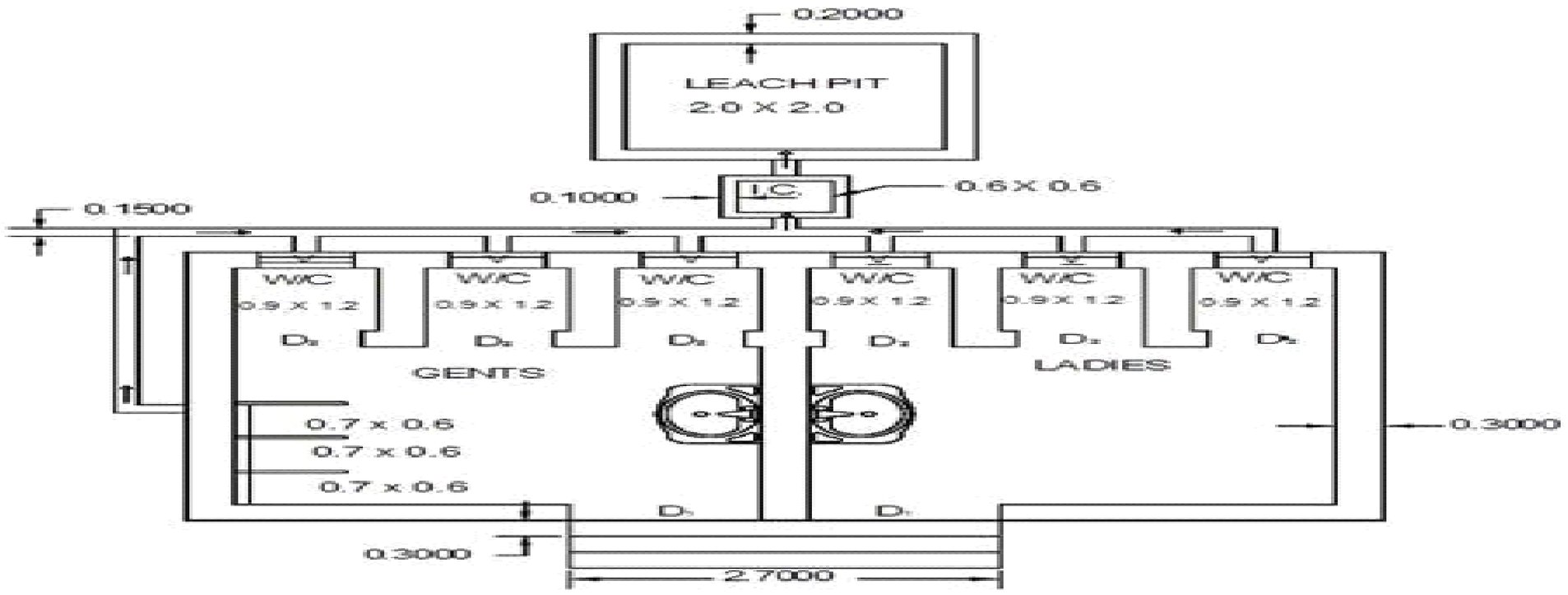


Fig. 56: Proposed Design of Public Toilet

TABLE 30: PROP. CONSTRUCTION WORK OF TOILET BLOCK
AT, PATOSAN, TAL:- TALUKA PALANPUR, DIST:- BANASKANTHA

MEASUREMENT SHEET

ITEM	DESCRIPTION	NO	L	B/W	H/D	QUANTIY	UNITS
ITEM NO.:- 1	Excavation for						
	Foundation L= 37.1	1	37.1	0.7	0.9	23.37	Cu.m.
ITEM NO.:- 2	C.C. work in foundation						
	L=37.1 m	1	37.1	0.7	0.15	3.89	Cu.m.
ITEM NO.:- 3	Brick masonry work in						
	Foundation (L=37.10) 1st step L=42 –14*(0.5/2) =38.5	1	38.5	0.5	0.30	5.77	Cu.m
	2nd step						
	L=42 –14*(0.3/2) =39.9m	1	39.9	0.3	0.95	11.37	Cu.m
	Total Brick masonry					17.14	Cu.m.
	work in foundation						
ITEM NO.:- 4							
	Earth filling work For Toilet For Open Space	 6 2	 0.9 3.3	 1.2 3.0	 0.45 0.45	 2.916 8.190	Cu.m.
ITEM NO.:- 5	Brick masonry work in						
	super structure						
	L=39.90m Deduction for door & Window	1	39.9	0.3	3.00	35.91	Cu.m.
	Door 1	2	1.2	0.3	2.1	1.512	Cu.m.

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

	Door 1	½ x 2	1.2		2.1	2.52	Sq.m.
	Door 2	½ x 6	0.6		0.5	0.9	Sq.m.
					Total	3.42	Sq.m.
	Total External plaster work =113.5 – 3.42					109.98	Sq.m.
ITEM NO.:- 9							
	Dedo work For Toilet					179.94	Sq.m.
	Side:1	2x6	0.9		1.0	10.8	Sq.m.
	Side:2	2x6	1.2		1.0	14.4	Sq.m.
	For Urinal	2	2.8		1.0	5.6	Sq.m.
					Total	30.8	Sq.m.
	Deduction						
	Door 2	6	0.9		1.0	5.4	Sq.m.
	Total Dedo work		(30.8-5.4)			25.4	Sq.m.
ITEM NO.:- 10							
	Flooring work						
	For Open Space	2	3.3	3.0		19.8	Sq.m.
	For Toilet For Door Sill	6	0.9	1.2		6.48	Sq.m.
	Door 1	2	1.2	0.3		0.72	Sq.m.
	Door 2	6	0.9	0.3		1.62	Sq.m.
	Total Flooring Work					28.62	Sq.m.
ITEM NO.:- 10							
	For R.C.C. slab	1	7.5	5.1	0.125	4.781	Cu.m.
ITEM NO.:- 11							
	For Lintel Work						
	(1)Ventilator	6	0.9	0.3	0.15	0.243	Cu.m.
	(2)Door:1	2	1.5	0.3	0.15	0.135	Cu.m.
	(3)Door:2	6	1.2	0.3	0.15	0.320	Cu.m.
					Total	0.698	Cu.m.

ITEM NO.:- 13							
	Internal White wash						
	=(internal P.L.-Dedo work)						
	=(98.64-30.8)					67.84	Sq.m.
ITEM NO.:- 14							
	External white wash (as per external plaster work)					109.98	Sq.m.
ITEM NO.:- 15							
	Excavation work for leach pit	1	2.4	2.4	2.5	14.1	Cu.m.
ITEM NO.:- 16							
	Brick work in leach pit						
	L=4(0.20+2.0+0.20) =8.8m	1	8.8	0.20	2.5	4.4	Cu.m.
ITEM NO.:- 17							
	Internal plaster work in leach pit						
	Side: 1	2	2.0		2.5	10	Sq.m.
	Side: 2	2	2.0		2.5	10	Sq.m.
ITEM NO.:- 18							
	Celling of leach pit(precast cover)	1	2.4	2.4	0.15	0.864	Cu.m.
ITEM NO.:- 19							
	Excavation work in inspection chamber	1	0.8	0.8	0.7	0.448	Cu.m.
ITEM NO.:- 20							
	Brick work in inspection chamber	1	2.8	0.10	0.7	0.20	Cu.m.
		33					
ITEM NO.:- 21							

	Internal plaster work in						
	inspection chamber						
	Side: 1	2	0.6		0.7	0.42	Sq.m.
	Side: 2	2	0.6		0.7	0.42	Sq.m.
ITEM NO.:- 22							
	R.C.C. cover for inspection chamber (precast cover)	1	0.8	0.8	0.1	0.064	Sq.m.
ITEM NO :- 23							
	PVC pipe 150mm dia. L=15.5m	1	15.5				Rmt

TABLE 30.1: PROP. CONSTRUCTION WORK OF TOILET BLOCK

ABSTRACT SHEET

Sr.	**Item description**	**Quantity**	**Rate**	**Per**	**Amount**
1.	Excavation work	23.37	155	Cu.m.	3622.35
2.	P C.C	3.89	3000	Cu.m.	11670
3.	Brickwork in foundation	17.14	3200	Cu.m.	54848
4.	Brickwork in Superstructure	28.36	3500	Cu.m.	99260
5.	Plastering	208.62	150	Sq.m.	31293
6.	Flooring	28.62	855	Sq.m.	24470.1
7.	R.C.C slab	4.781	4900	Cu.m.	23426.9
8.	Painting	208.62	25	Sq.m.	5215.5
9.	Dedo Work	25.4	1000	Sq.m.	25400

10.	P.V.C. Pipe	15.5	350	Rmt	5425

11.	Gully trap (150mmx100mm size)	6	64.00	NOS	384
12.	Urinal flat back	3	437	NOS	1311
13.	W/C pan	6	320	NOS	1920
14.	Wash basin	2	1114	NOS	2228
15.	Elbow	3	20.00	NOS	60.00
16.	T-Pipe	7	24	NOS	168.00
	Total Rupees				290701.85
	Conti.....05.00%Rupees				14535.09
	10% contractor charges				29070.18
	2% water charges				5814.03
	Total Amount Rupees				340121.16
	Say Rupees				341000.00
	(THREE LAC FOURTY ONE THOUSAND ONLY)				

8.7 Design Of Community Hall

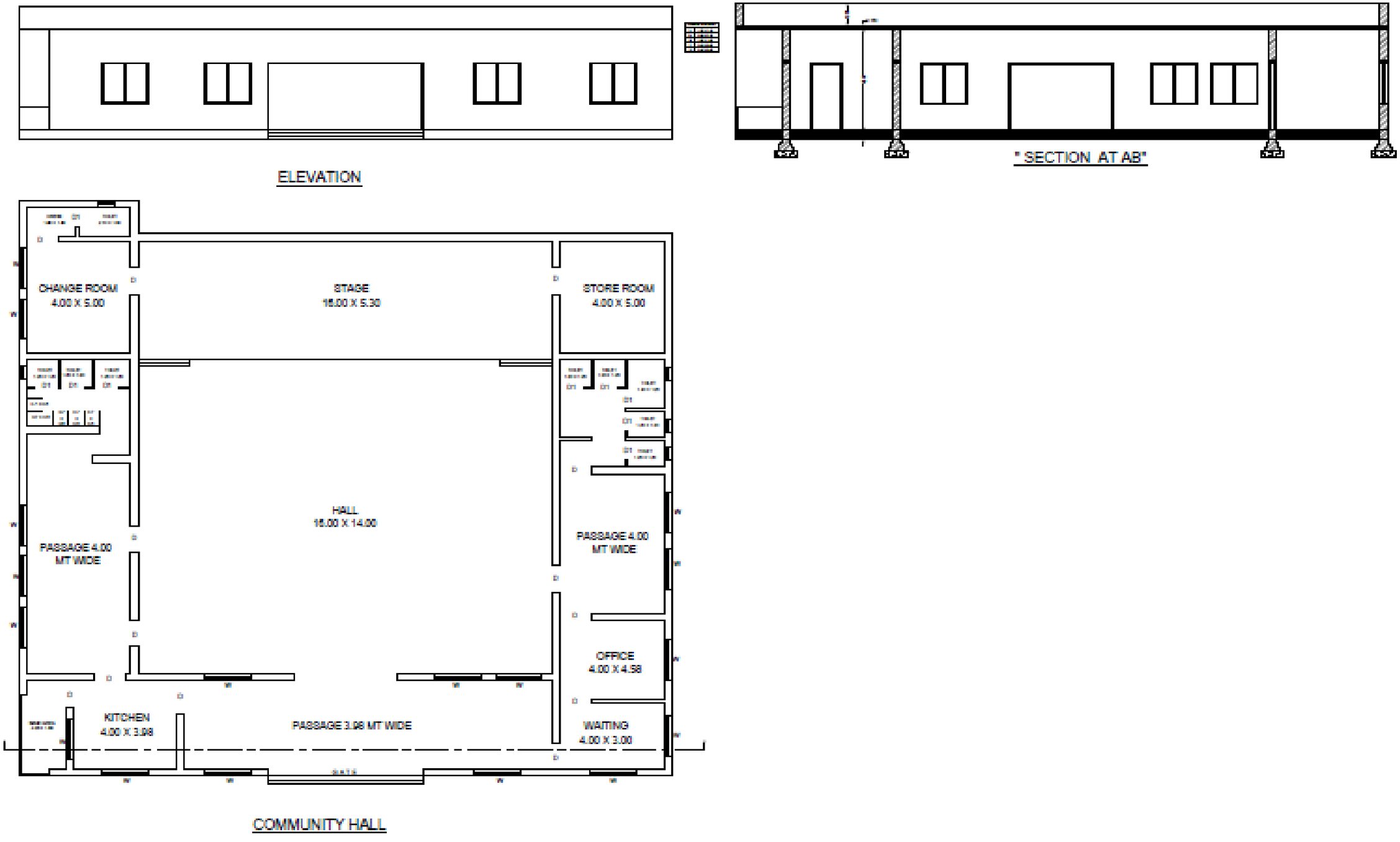


Fig.57: Design of Community Halls

TABLE 31: PROP. CONSTRUCTION WORK OF COMMUNITY HALL AT, PATOSAN, TAL:- TALUKA PALANPUR, DIST:- BANASKANTHA							
MEASUREMENT SHEET							
ITEM	DESCRIPTION	NO	L	B/W	H/D	QUANTIY	UNITS
ITEM NO.:- 1							
	Excavationfor Foundation						
	L=188	1	188	0.9	1.2	203.04	Cu.m.
ITEM NO.:- 2							
	C.C. work in foundation						
	L=188	1	188	0.9	0.2	33.84	Cu.m.
ITEM NO.:- 3							
	Brick masonry work in Foundation						
	1st step L=197–20*(0.6/2) =191	1	191	0.6	0.1	11.46	Cu.m
	2nd step L=197–20*(0.5/2)	1	192	0.5	0.1	9.6	Cu.m
	=192						
	3rd step						
	L=197–20*(0.4/2) =193	1	193	0.4	0.1	7.72	Cu.m
	4th step	1	194	0.3	0.7	40.74	Cu.m
	L=197 –20*(0.3/2) =194 Total Brick masonry					69.52	Cu.m.
	work in foundation						
ITEM NO.:- 4							
	Brick masonry work in						
+	super structure L=197	1	197	0.3	4	236.4	Cu.m.
	Deduction for door &						

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

INTERNAL PLASTER		14	4			84	
		5 5	5 6			25 30	

		3	3		4	36	
		16 5	6 5		4 4	384 100	
		5	5		4	100	
	TOTAL					754	**SQ.M**
ITEM NO.:- 9							
WHITE WASH PER ABOVE						754	SQ.M
ITEM NO 10							
	RCC WORK FOR SLAB L=25.2	1	25.2	24.18	0.15	91.4	CU.M
	B=24.18 H=0.15						

TABLE 31.1:PROP. CONSTRUCTION WORK OF
COMMUNITY HALL
AT, PATOSAN, TAL:-TALUKA PALANPUR DIST:- BANASKANTHA

ABSTRACT SHEET

Sr.	Item description	Quantity	Rate	Per	Amount
1.	Excavation work	203.04	155	Cu.m.	31472
2.	P C.C	33.84	3000	Cu.m.	101520
3.	Brickwork in Foundation	69.52	3200	Cu.m.	222464
4.	Brickwork in Superstructure	216.15	3500	Cu.m.	756525
5.	Plastering	754	150	Sq.m.	113100
6.	R.C.C slab	91.4	4900	Cu.m.	447860
7.	Painting	754	25	Sq.m.	18850
				Total Rupees	1491791
	Conti..... 05.00%Rupees				74589
	10% contractor charges				149179
				2% water charges	29836
				Total Amount Rupees	1745395
				Say Rupees	1745395

- **Recommendations of theDesign**

- Companies and governments that have advanced design strategies have more potential to apply sustainable design than others.

- **Suggestions / Benefit of thevillagers**

Villagers shall be highly benefitized with the scheme. The mentioned points summarized the benefits availed by the villagers.

- Social gathering and functions needs to be well organized in the villages.
- Social gathering and roaming is also required. For that the parks and public gardens are been proposed to be constructed.

➢ **Sustainable Design**

- The term sustainable design has been used in multiple disciplines, including but not limited to product design, architecture design, interior design, and graphic design.
- Sustainable design refers to the design process that integrates an environmentally friendly approach and considers nature resources as part of the design.
- Sherlyn Underwood, American Society of Interior Designers (ASID) Virginia chapter president and interior designer with Smith Lewis Architecture, defines sustainable design in the architectural sector this way:- Sustainable design is the practice of designing buildings so that they exist in harmony with natural systems

➢ **Physical design**

- Design of Community Hall is proposed.

➢ **Social design**

- Design of Government library is proposed as depicted earlier.

➢ **Socio-Cultural design**

- Design of Public park & Garden is proposed.

➢ **Smart Village Design**

- The key designs have been done to make the village smart.

9. CHAPTER 9 Proposing design for future Development of the Village for Part-II Design

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

- We give Design in this semester is below

- Public Health Centre
- Public Park
- Solar based water distribution pump station
- Library
- Public toilet
- Social Community Hall

- We give Design in next semester is below

- Government Grocery Shop
- Design of water tank
- Design of Solid Waste Management System
- Rain Water Harvesting on community hall
- Public Toilet Block
- Post office
- Public Library
- Anganwadi center
- Over headed tank
- Maintenance of School building
- Bus station

10. CHAPTER 10 Conculsion

- The following points can be summarized as the outcome of the study:

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

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

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

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

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12. CHAPTER 12 Annexure

12.1 Scanned copy (for Part-I), Original (for–Part-II) Ideal Village Survey Form

12.2 Scanned copy (for Part-I), Original (for–Part-II) Smart Village (Gujarati) Survey details

12.3 Scanned copy (for Part-I), Original (for–Part-II) <Allocated Village> Techno-Economic Survey Form.

12.4 Gap Analysis

12.5 Summary of All Villages Designs as Part-I and Part-II, in Table Format

12.6 Drawings A3 (If, A4 design is not visible then Only)

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

12.8 Village Interaction Report with the photograph as a report format

12.9 Sarpanch Letter (village design proposal shown to the Sarpanch interaction report)

12.10 TDO-DDO-Collector sending email of the Softcopy of the report (Finally in Part-II)

12.11 SAGY Questionnaire - Sarpanch Signature (Original Form(for–Part-II)

12.12 MISSION ANTYODAYA SURVEY (Original Form for–Part-II

12.13 Original Ideal Village PUNSARI Survey From

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For

Vishwakarma Yojana: Phase VIII

IDEAL VILLAGE SURVEY

An approach towards Rurbanisation for Village Development

Name of Village:	Patosan
Name of Taluka:	Tarod
Name of District:	Sabarkantha
Name of Institute:	L.D. college of engg. Amd.
Nodal Officer Name & Contact Detail:	
Respondent Name: (Sarpanch/ Panchayat Member/ Teacher/ Gram Sevak/ Aaganwadi worker/Village dweller)	
Date of Survey:	

1. **Demographical Detail:**

Sr. No.	Census	Population	Male	Female	Total House Holds
i)	2001	4681	2221	2456	1200 (Approx)
ii)	2011	5500	3246	2798	1450 (")

2. **Geographical Detail:**

Sr. No.	Description	Information/Detail
i)	Area of Village (Approx.) (In Hector) Coordinates for Location:	18-51-57 / 0.3.3926" N 73.1128" E
	Forest Area (In hect.)	219-60-45
	Agricultural Land Area (In hect.)	1015-63-62
	Residential Area (In hect.)	0.13 km^2
	Other Area (In hect.)	0.027 km^2
	Water bodies	
	Nearest Town with Distance:	

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7.	Name of Nearest Town with Distance:	Rojhad - 10 km.
8.	Distance to the nearest bus station (in kilometers):	Rojhad - 10 km.
9.	Whether village is connected to all road for the any facility or town or City?	yes, good Transportation.

III. OCCUPATIONAL DETAILS:

Name of Three Major Occupation groups in Village	1. Farmers
	2. Job
	3. others

Major crops grown in the village:	1. Cotton
	2. groundnuts
	3. wheat.

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	Tubewell (4 Nos.)	yes	-	well = 13 Nos. Bore = 512 Nos. hand pump = 3 Nos.
2.	**DUG WELL** Protected Well Un Protected Well				
3.	**WATER FROM SPRING** Protected Spring Unprotected Spring Rainwater Tanker Truck Cart With Small Tank	Available			
4.	**SURFACE WATER (RIVER/DAM/ LAKE/POND/STREAM/CANAL/** Irrigation Channel Bottled Water Hand Pump	✓ ✓	yes		4 Rs. / 20 lit 15 Rs / 20 lit.

	Other(Specify)**Lake/ Pond**	yes	yes		
Suggestions if any:					
B.	**Water Tank Facility**				
	Overhead Tank	Capacity: lit	17000		incapprochated
	Underground Sump	Capacity:			
Suggestions if any: Restoration is required.					
C.	**The Type of Drainage Facility**				
	A. UNDERGROUND DRAINAGE 1		yes.		Available whole village
Suggestions if any:					
D.	**Road Network :All Weather/ Kutchha (Gravel)/ Black Topped pucca/ WBM**				
	Village approach road	Good	yes		21.25 km bitumen
	Main road	Good	yes		bitumen c.c
	Internal streets	Good	yes		c.c Road
	Nearest NH/SH/MDR/ODR Dist. in kms.	MDR	yes.		10 km from Rojhad.
Suggestions if any: Arbori-culture is required.					
E.	**Transport Facility**				
	Railway Station (Y/N) (If No than Nearest Rly Station---Kms)	No			20 km Talod R.S.
	Bus station (Y/N) Condition: (If No than Nearest Bus Station---Kms)		yes		8-10 busies daily
	Local Transportation (Auto/ Jeep/Chhakda/ Private Vehicles/ Other)	good	yes.		Auto, Jeep, Private vehicles.
Suggestions if any:					
F.	**Electricity Distribution**				
	(Y/N) Govt./ Private (Less than 6 hrs./ More Than 6 hrs)	Good (govt.)	yes		more than 6 hr 24 hrs. 66 kv subst.

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	Power supply for Domestic Use	24 hr.			
	Power supply for Agricultural Use	8 hr.			
	Power supply for Commercial Use	24 hr.			
	Road/ Street Lights	LED Light			
	Electrification in Government Buildings/ Schools/ Hospitals	yes			
	Renewable Energy Source Facilities (Y/ N)	yes			
	LED Facilities	yes			

Suggestions if any:

G.	**Sanitation Facility**				
	Public Latrine Blocks If available than Nos.	yes 4 unit			mobile Toilet
	Location Condition	Good			
	Community Toilet (With bath/ without bath facilities)	yes (with Bath)			
	Solid & liquid waste Disposal system available	yes			
	Any facility for Waste collection from road	yes.			Not working condition

Suggestions if any:

H.	**Main Source of Irrigation Facility:**				
	TANK/POND STREAM/RIVER CANAL WELL TUBE WELL OTHER (SPECIFY)	Tank well Tubewell			

Suggestions if any:

I.	**Housing Condition:**				
	Kutchha/Pucca (Approx. ratio)	0-111			Pucca more than 90%

V. SOCIAL INFRASTRUCTURAL FACILITIES:

Sr. No.	Descriptions	Information/ Detail	Adequate	Inadequate	Remarks
J.	**Health Facilities:**				
	ICDS (Anganwadi)	8 NOS.	yes		well maintained
	Sub-Centre				
	PHC	1 NOS.	yes		
	BLOCK PHC				
	CHC/RH				
	District/ Govt. Hospital				
	Govt. Dispensary	1 NOS.	yes		
	Private Clinic				
	Private Hospital/ Nursing Home	3 NOS.	yes		
	AYUSH Health Facility				
	sonography /ultrasound facility				
	If any of the above Facility is not available in village than approx. distance from village: ..2.0..kms.				
Suggestions if any:					
K.	**Education Facilities:**				
	Aaganwadi/ Play group	8 NOS.	yes		Good condition
	Primary School	2 NOS.	yes		350 student
	Secondary school	9-12 std.	yes		650 student
	Higher sec. School				well maintained
	ITI college/ vocational Training Center ✓	Good	yes		Skill dev. centre.
	Art, Commerce& Science /Polytechnic/ Engineering/ Medical/ Management/ other college facilities	NO			20 kms Talod 20km Modasa.

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If any of the above Facility is not available in village than approx. distance from village: ....12.kms. (Dhansura)

Suggestions if any:

L.	Socio- Culture Facilities	Condition	Location	Available (YES)	Available (NO)
	Community Hall (With or without TV)	Good	Approach Area	yes	
	Public Library (With daily newspaper supply: Y/N)	Good	mobile van	yes	
	Public Garden			yes	
	Village Pond	1 NOS.	Rajhad Road		
	Recreation Center				
	Cinema/ Video Hall				
	Assembly Polling Station	Good		yes	
	Birth & Death Registration Office			yes.	

If any of the above Facility is not available in village than approx. distance from village: ..12....kms. Rajhad

Suggestions if any:

M.	Other Facilities	Condition	Location	Available (YES)	Available (NO)
	Post-office	Good	Gram	yes	
	Telecommunication Network/ STD booth				
	General Market			yes	
	Shops (Public Distribution System)			yes	
	Panchayat Building	Good	Gram	yes	
	Pharmacy/Medical Shop	2 NOS.	good	yes	
	Bank & ATM Facility	1 NOS.	good	yes	
	Agriculture Co-operative Society	2 NOS.		yes.	
	Milk Co-operative Soc.	1 NOS.		yes	
	Small Scale Industries				NO
	Internet Cafes/ Common Service Center/Wi Fi	free wifi		yes	
	Youth Club				
	Mahila Mandal	working		yes	

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

Suggestions if any:

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

VI. SUSTAINABLE /GREEN INFRASTRUCTURE FACILITIES:

Sr. No.	Descriptions	Information/ Details	Adequate	Inadequate	Remarks
1.	Adoption of Non-Conventional Energy Sources/ Renewable Energy Sources	bio-electric plant			electricity from solid waste
2.	Bio-Gas Plant Solar Street Lights Rain Water Harvesting System	Good	yes		
3.	Any Other				

VII. DATA COLLECTION FROM VILLAGE

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

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VIII. ADDITIONAL INFORMATION/ REQUIREMENT:

Sr. No.	Descriptions	Information/ Detail	Remarks
1.	Repair & Maintenance of Existing Public Infrastructure facilities, School Building Health Center Panchayat Building Public Toilets & any other	fumigates everyday (all public buildings)	
2.	Additional Information/ Requirement		
3.	During the last six months how many times CLEANING ..... FOGGING..... Drive was undertaken in the village?	monthly	

IX. Smart Village / Heritage Details

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

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

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

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Survey form of Smart Village

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SMART VILLAGE SURVEY

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

Name of District:	GANDHINAGAR
Name of Taluka:	GANDHINAGAR
Name of Village:	ADALAJ VILLAGE
Name of Institute:	L.D. COLLEGE OF ENGG. A'BAD
Nodal Officer Name & Contact Detail:	PROF. U. P. NIGAM 7597832470
Respondent Name: (Sarpanch/ Panchayat Member/ Teacher/ Gram Sevak/ Aaganwadi worker/Village dweller)	Thakor Kokilaben R. સરપંચ અડાલજ ગ્રામ પંચાયત તા.જિ.ગાંધીનગર
Date of Survey:	

I. DEMOGRAPHICAL DETAIL:

Sr. No.	Census	Population	Male	Female	Total Number of House Holds
1.	2001	9776	4995	4781	2150
2.	2011	12,000	6137	5890	2621

II. GEOGRAPHICAL DETAIL:

Sr. No.	Description	Information/Detail
1.	Area of Village (Approx.) (In Hector)Coordinates for Location:	2723 Hector 23.10°N 72.57°E
2.	Forest Area (In hect.)	0
3.	Agricultural Land Area (In hect.)	1488
4.	Residential Area (In hect.)	105
5.	Other Area (In hect.)	400 (Approx)
6.	Distance to the nearest railway station (in kilometers):	Gandhinagar (15 km)

7.	Name of Nearest Town with Distance	Gandhinagar, 15km
8.	Distance to the nearest bus station (in kilometers):	Adalaj chowkadi (0.5km)
9.	Whether village is connected to all road for the any facility or town or City?	Connected by SH 41, SG Highway.

III. OCCUPATIONAL DETAILS:

Name of Three Major Occupation groups in Village	1.	Aggricultured
	2.	Brick manufacturing
	3.	clay spot.

Major crops grown in the village:	1.	cotton
	2.	millet
	3.	Juvar

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	Step well	yes		use for heritage tourist place
2.	**DUG WELL** Protected Well Un Protected Well				
3.	**WATER FROM SPRING** Protected Spring Unprotected Spring Rainwater Tanker Truck Cart With Small Tank	Borewell 4 nos.	yes		
4.	**SURFACE WATER (RIVER/DAM/ LAKE/POND/STREAM/CANAL/** Irrigation Channel Bottled Water Hand Pump Other(Specify)**Lake/ Pond**	Available (Warmed & channel)			Not use for Irrigation

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Suggestions if any:

B.	Water Tank Facility				
	Overhead Tank	Capacity:	2 NOS.	2,30,000 lit cap. each	
	Underground Sump	Capacity:	2 NOS.	50,000 lit cap. each	

Suggestions if any: 2 overhead tank one is 2,30,000 lit, 2,50,000 lit capacity

C.	The Type of Drainage Facility				
	A. UNDERGROUND DRAINAGE 1 2 B. OPEN WITH OUTLET C. OPEN WITHOUT OUTLET	yes	–	–	–

Suggestions if any: Need maintenance.

D.	Road Network :All Weather/ Kutchha (Gravel)/ Black Topped pucca/ WBM				
	Village approach road	Bitumen (0 km)	yes	–	RCC Road also
	Main road	C. C	yes	–	
	Internal streets	C.C & block road	yes	–	Need in some area
	Nearest NH/SH/MDR/ODR Dist. in kms.	SH 41 (0.5KM)	–	–	S.H. Highway (0.5KM)

Suggestions if any: in some Internal Street, paiver block Road can provided

E.	Transport Facility				
	Railway Station (Y/N) (If No than Nearest Rly Station---Kms)	NO	-	–	Gandhinagar. (8 KM)
	Bus station (Y/N) Condition: (If No than Nearest Bus Station---Kms)	yes (0.5km)	–	–	No Building for pickup stand available.
	Local Transportation (Auto/ Jeep/Chhakda/ Private Vehicles/ Other)	Auto/ Jeep Am-ts	yes	–	connected by local Transportation Am-ts

Suggestions if any: pick up stand Building is Required.

F.	Electricity Distribution				
	(Y/N) Govt./ Private (Less than 6 hrs./ More Than 6 hrs)	yes (govt.)	yes	–	66 KVA Sub

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	Power supply for Domestic Use	good	Adequate	-	Available in whole village
	Power supply for Agricultural Use	good	yes	-	-
	Power supply for Commercial Use	-	yes	-	-
	Road/ Street Lights	87 Spots	-	-	35 circle lights
	Electrification in Government Buildings/ Schools/ Hospitals	good	yes		need maintenance
	Renewable Energy Source Facilities (Y/ N)	Available	-		1 NO. Biogas plant
	LED Facilities	yes			~~for street light only.~~

Suggestions if any: LED facilities are very limited, solar lights need maintenance

G.	Sanitation Facility				
	Public Latrine Blocks If available than Nos.	yes 2 NOS.	yes	-	Total household Latrine: 230 Completed: 80 remaining: 150
	Location Condition	good	-		
	Community Toilet (With bath/ without bath facilities)	yes	yes	-	without bath facilities
	Solid & liquid waste Disposal system available	No	-	-	Not available
	Any facility for Waste collection from road	Yes	-	-	-

Suggestions if any: Door to door collection system for solid waste.

H.	Main Source of Irrigation Facility:				
	TANK/POND STREAM/RIVER CANAL WELL TUBE WELL OTHER (SPECIFY)	Narmada. Tubewell	yes	-	available to every farm.

Suggestions if any:

I.	Housing Condition:				
	Kutchha/Pucca (Approx. ratio)	Pucca	yes	-	more 90% Pucca houses.

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V. SOCIAL INFRASTRUCTURAL FACILITIES:

Sr. No.	Descriptions	Information/ Detail	Adequate	Inadequate	Remarks
J.	**Health Facilities:**				
	ICDS (Anganwadi)				
	Sub-Centre	2 NOS.	yes		good infrastructure
	PHC	NO.			10 km (sugand village)
	BLOCK PHC				
	CHC/RH	1 NOS.	yes		
	District/ Govt. Hospital	1 NOS.	yes		
	Govt. Dispensary				
	Private Clinic				
	Private Hospital/ Nursing Home	4 NOS.	yes.		At dist. location
	AYUSH Health Facility				
	sonography /ultrasound facility				
	If any of the above Facility is not available in village than approx. distance from village: ...12...kms. (gandhinagar)				
Suggestions if any:					
K.	**Education Facilities:**				
	Aaganwadi/ Play group	8 NOS.	yes	-	well maintained
	Primary School (1 to 8)	6 NOS.	yes	-	need maintenance
	Secondary school (9 to 10)	3 NOS.	yes	-	seperate for boys & girls
	Higher sec. School (11 & 12)	1 NOS.	yes	-	
	ITI college/ vocational Training Center	NO.	-	-	12 km gandhinagar
	Art, Commerce& Science /Polytechnic/ Engineering/ Medical/ Management/ other college facilities	Grant in aid college	-		Pre PTC CPAD training Centre
	If any of the above Facility is not available in village than approx. distance from village: (2....kms. (gandhinagar)				

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Suggestions if any:

L.	Socio- Culture Facilities	Condition	Location	Available (YES)	Available (NO)
✓	Community Hall (With or without TV)	Newly Constructed	on approach road	yes	-
	Public Library (With daily newspaper supply: Y/N)	-	-	-	NO
	Public Garden	yes	good	yes	-
	Village Pond	2 nos.		yes	
	Recreation Center	good (Step well)	Gpanchayat	yes	
	Cinema/ Video Hall	-	-	-	NO
	Assembly Polling Station			yes	
	Birth & Death Registration	Thrash	E - Gram		

If any of the above Facility is not available in village than approx. distance from village: ..12....kms. (gandhinagar)

Suggestions if any: village need public library.

M.	Other Facilities	Condition	Location	Available (YES)	Available (NO)
	Post-office	good	Gramtal	yes	-
	Telecommunication Network/ STD booth	good	near by Panchayat	yes	-
	General Market	good	Panchayat	yes	-
	Shops (Public Distribution System)	good	approach road	yes	-
	Panchayat Building	good	Adalaj vav	yes	-
	Pharmacy/Medical Shop			yes	-
	Bank & ATM Facility	good	Panchayat	yes	-
	Agriculture Co-operative Society	-	-	-	NO
	Milk Co-operative Soc.	Not		yes	-
	Small Scale Industries			yes	-
	Internet Cafes/ Common Service Center/Wi Fi	-	-	-	NO
	Youth Club	-	-	-	NO
	Mahila Mandal	-	-	-	NO

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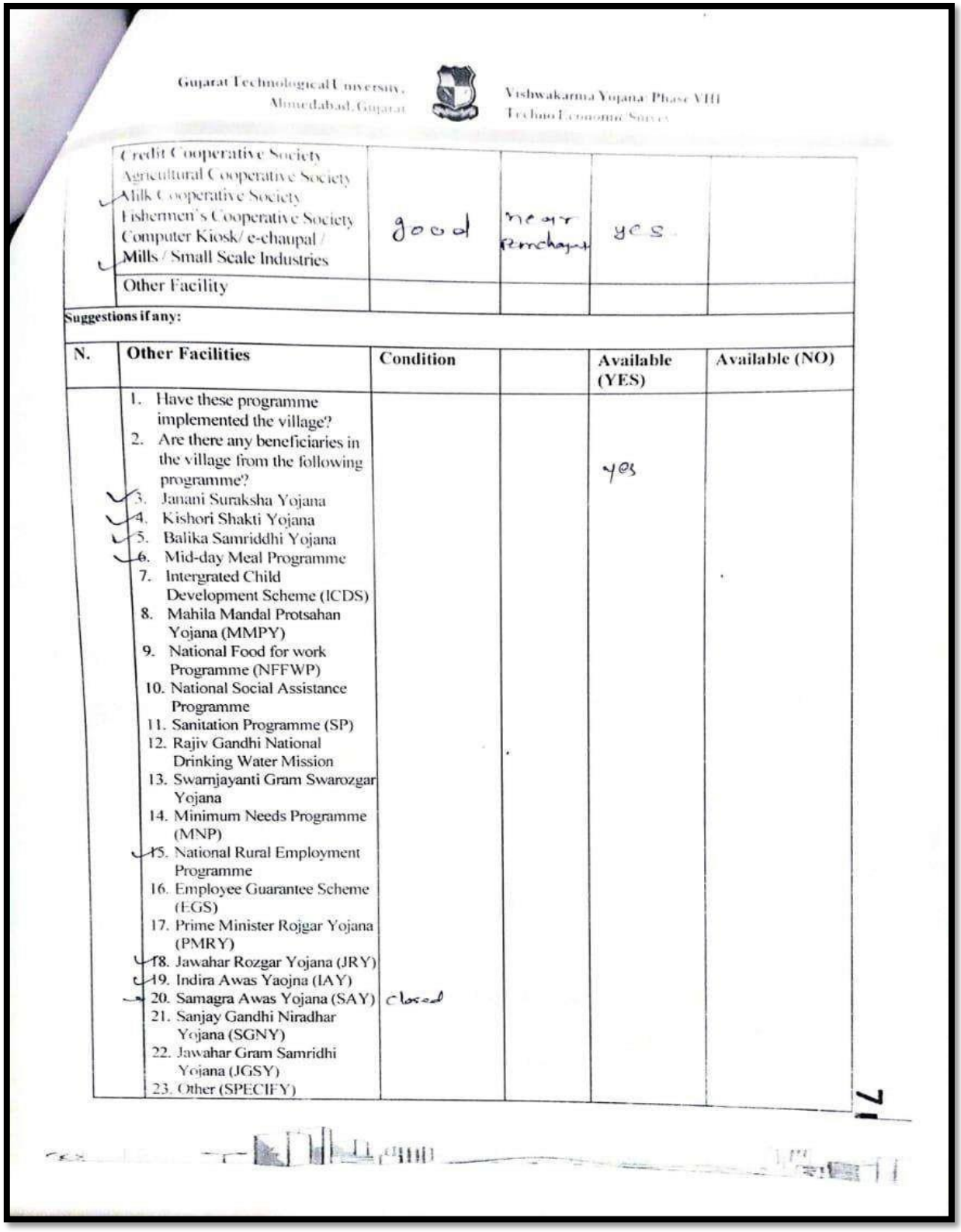

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Vishwakarma Yojana: Phase VIII
Techno Economic Survey

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

Suggestions if any:

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

VI. SUSTAINABLE /GREEN INFRASTRUCTURE FACILITIES:

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

VII. DATA COLLECTION FROM VILLAGE

Sr. No.	Descriptions	Information/ Details	Adequate	Inadequate	Remarks
1.	Village Base Map Available: Hard Copy/Soft Copy	Hard Copy		yes	
2.	Recent Projects going on for Development of Village	Road development		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

18

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

IX. Smart Village / Heritage Details

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

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

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

સરપંચ
અડાલજ ગ્રામ પંચાયત
તા.જિ.ગાંધીનગર

Survey form of Allocated Village

Gujarat Technological University, Ahmedabad, Gujarat

Vishwakarma Yojana: Phase VIII
Techno Economic Survey

Techno Economic Survey

Vishwakarma Yojana: Phase VIII

[redacted] VILLAGE SURVEY

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

Name of District:	Banaskantha
Name of Taluka:	Palanpur
Name of Village:	Patosan
Name of Institute:	L.D. College of Engineering, Ahmedabad
Nodal Officer Name & Contact Detail:	Prof. Utkarsh P. Niyam
Respondent Name: (Sarpanch/ Panchayat Member/ Teacher/ Gram Sevak/ Aaganwadi worker/Village dweller)	Sarpanch
Date of Survey:	13/10/2020

I. DEMOGRAPHICAL DETAIL:

Sr. No.	Census	Population	Male	Female	Total Number of House Holds
1.	2001				
2.	2011	3222	1680	1540	540

II. GEOGRAPHICAL DETAIL:

Sr. No.	Description	Information/Detail
1.	Area of Village (Approx.) (In Hector)Coordinates for Location:	1,006 Hector
2.	Forest Area (In hect.)	101 Hector
3.	Agricultural Land Area (In hect.)	250 Hector
4.	Residential Area (In hect.)	100 Hector
5.	Other Area (In hect.)	—
6.	Distance to the nearest railway station (in kilometers):	17 km (Palanpur Railway Station)

7.	Name of Nearest Town with Distance:	Gadh (5 km)
8.	Distance to the nearest bus station (in kilometers):	–
9.	Whether village is connected to all road for the any facility or town or City?	Yes

III. OCCUPATIONAL DETAILS:

Name of Three Major Occupation groups in Village	1. Open 2. OBC 3. SC
Major crops grown in the village:	1. Bajra 2. Wheat 3.

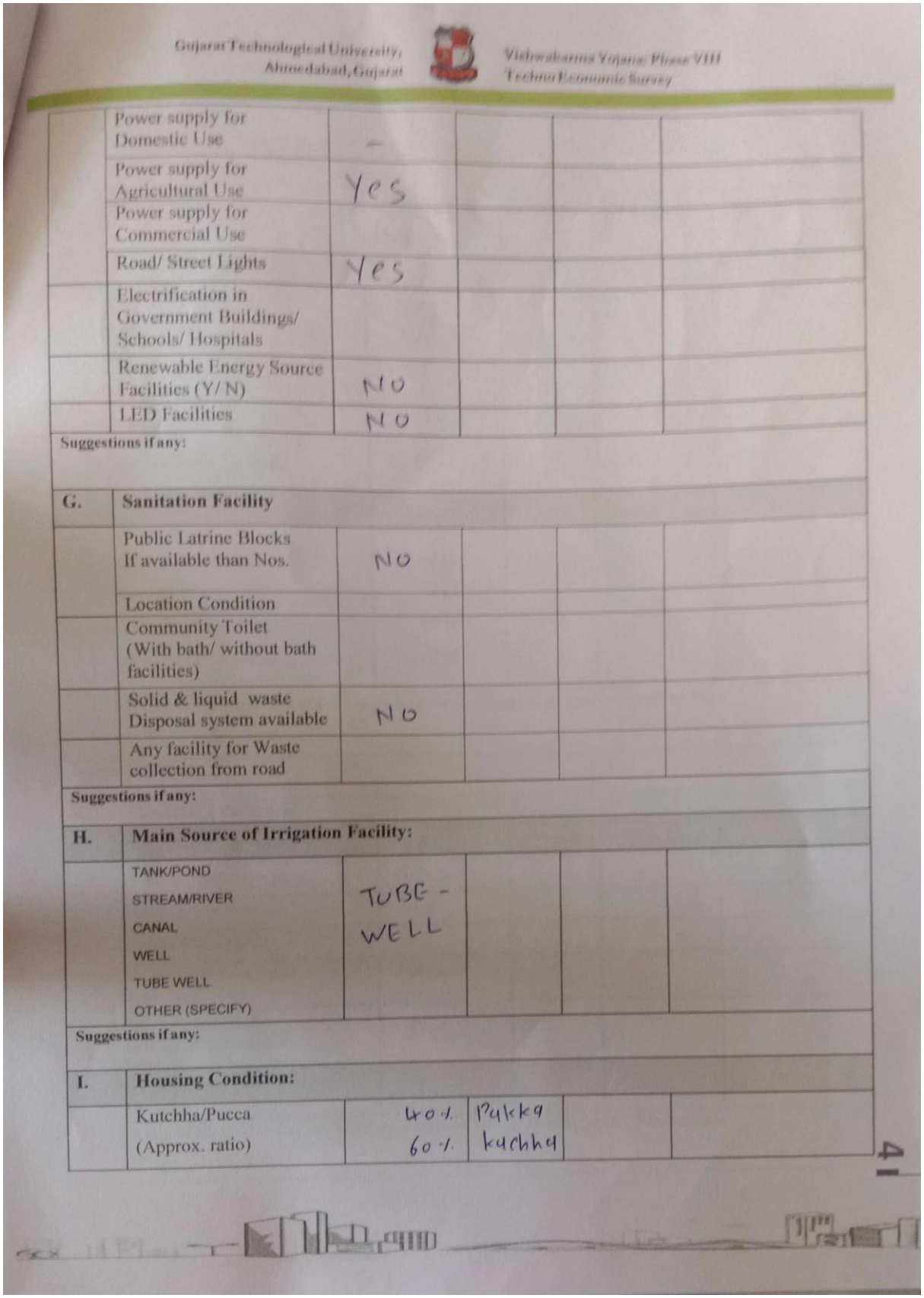
IV. PHYSICAL INFRASTRUCTURE FACILITIES:

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

21

Suggestions if any:						
B.	**Water Tank Facility**					
	Overhead Tank	Capacity:	1,00,000 Liters			
	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					
	Main road					
	Internal streets					
	Nearest NH/SH/MDR/ODR Dist. in kms.					
Suggestions if any:						
E.	**Transport Facility**					
	Railway Station (Y/N) (If No than Nearest Rly Station---Kms)	No				
	Bus station (Y/N) Condition: (If No than Nearest Bus Station---Kms)	No				
	Local Transportation (Auto/ Jeep/Chhakda/ Private Vehicles/ Other)	Auto, Jeep				
Suggestions if any:						
F.	**Electricity Distribution**					
	(Y/N) Govt./ Private (Less than 6 hrs./ More Than 6 hrs)	more than 6 hrs				

3



Gujarat Technological University, Ahmedabad, Gujarat

Vishwakarma Yojana: Phase VIII
Techno Economic Survey

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

Suggestions if any:

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

Suggestions if any:

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

Suggestions if any:

I.	**Housing Condition:**				
	Kutchha/Pucca (Approx. ratio)	40% 60%	Pukka kuchha		

4

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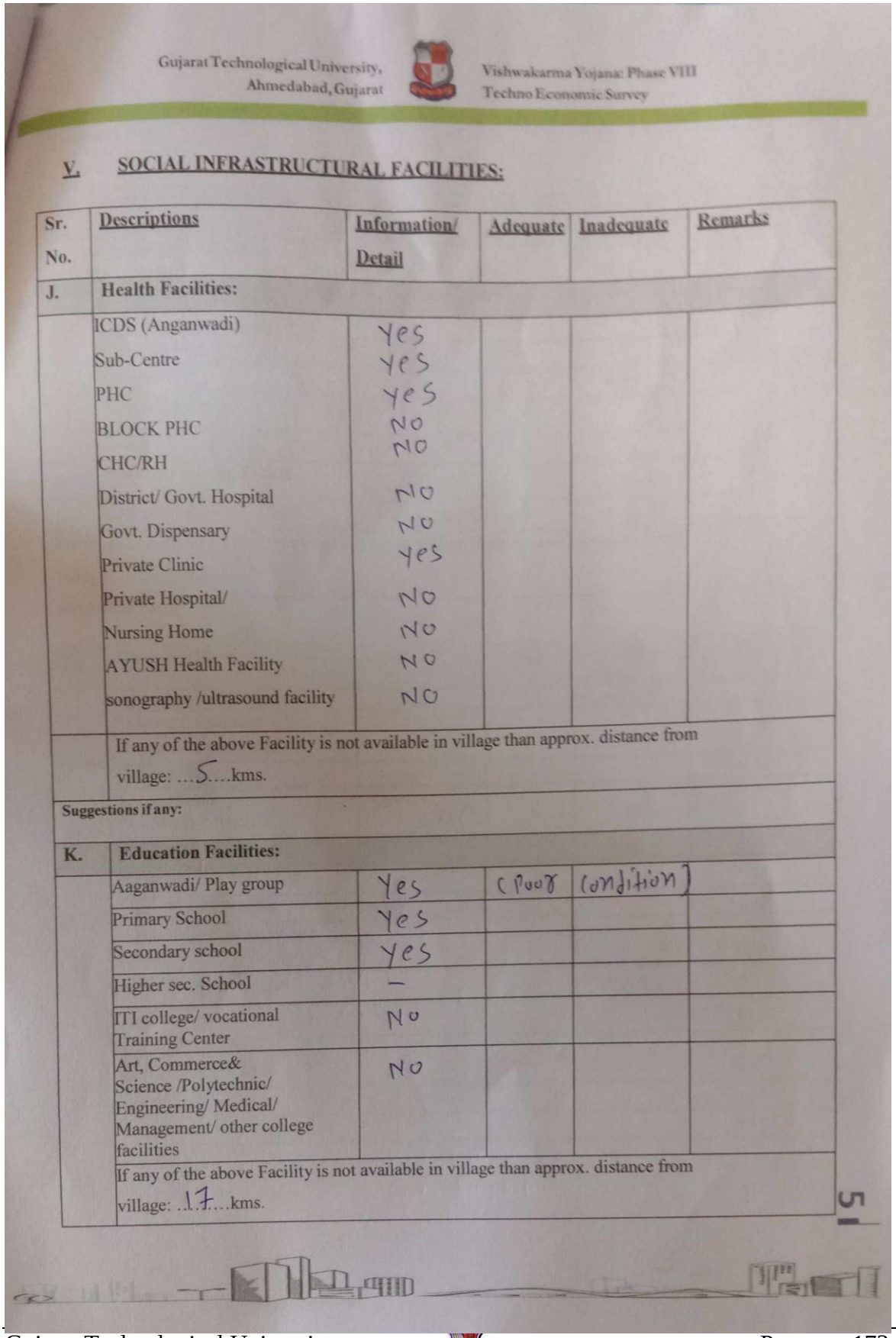


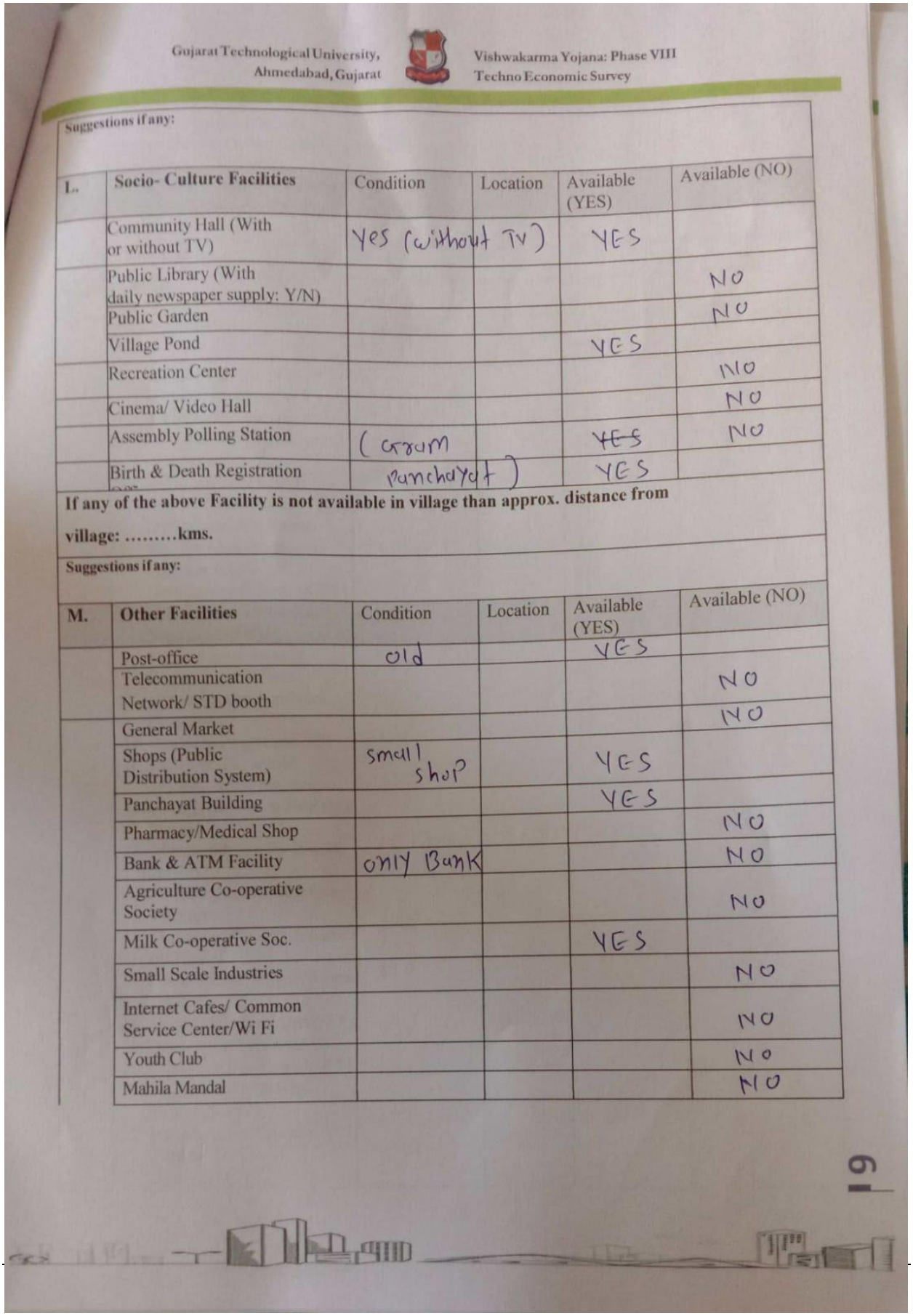
Gujarat Technological University, Ahmedabad, Gujarat

Vishwakarma Yojana: Phase VIII
Techno Economic Survey

V. SOCIAL INFRASTRUCTURAL FACILITIES:

Sr. No.	Descriptions	Information/ Detail	Adequate	Inadequate	Remarks
J.	**Health Facilities:**				
	ICDS (Anganwadi)	Yes			
	Sub-Centre	Yes			
	PHC	Yes			
	BLOCK PHC	No			
	CHC/RH	No			
	District/ Govt. Hospital	No			
	Govt. Dispensary	No			
	Private Clinic	yes			
	Private Hospital/	No			
	Nursing Home	No			
	AYUSH Health Facility	No			
	sonography /ultrasound facility	No			
	If any of the above Facility is not available in village than approx. distance from village: ...5....kms.				
Suggestions if any:					
K.	**Education Facilities:**				
	Aaganwadi/ Play group	Yes	(Poor	condition)	
	Primary School	Yes			
	Secondary school	Yes			
	Higher sec. School	–			
	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: ..17...kms.				

5



Gujarat Technological University, Ahmedabad, Gujarat

Vishwakarma Yojana: Phase VIII
Techno Economic Survey

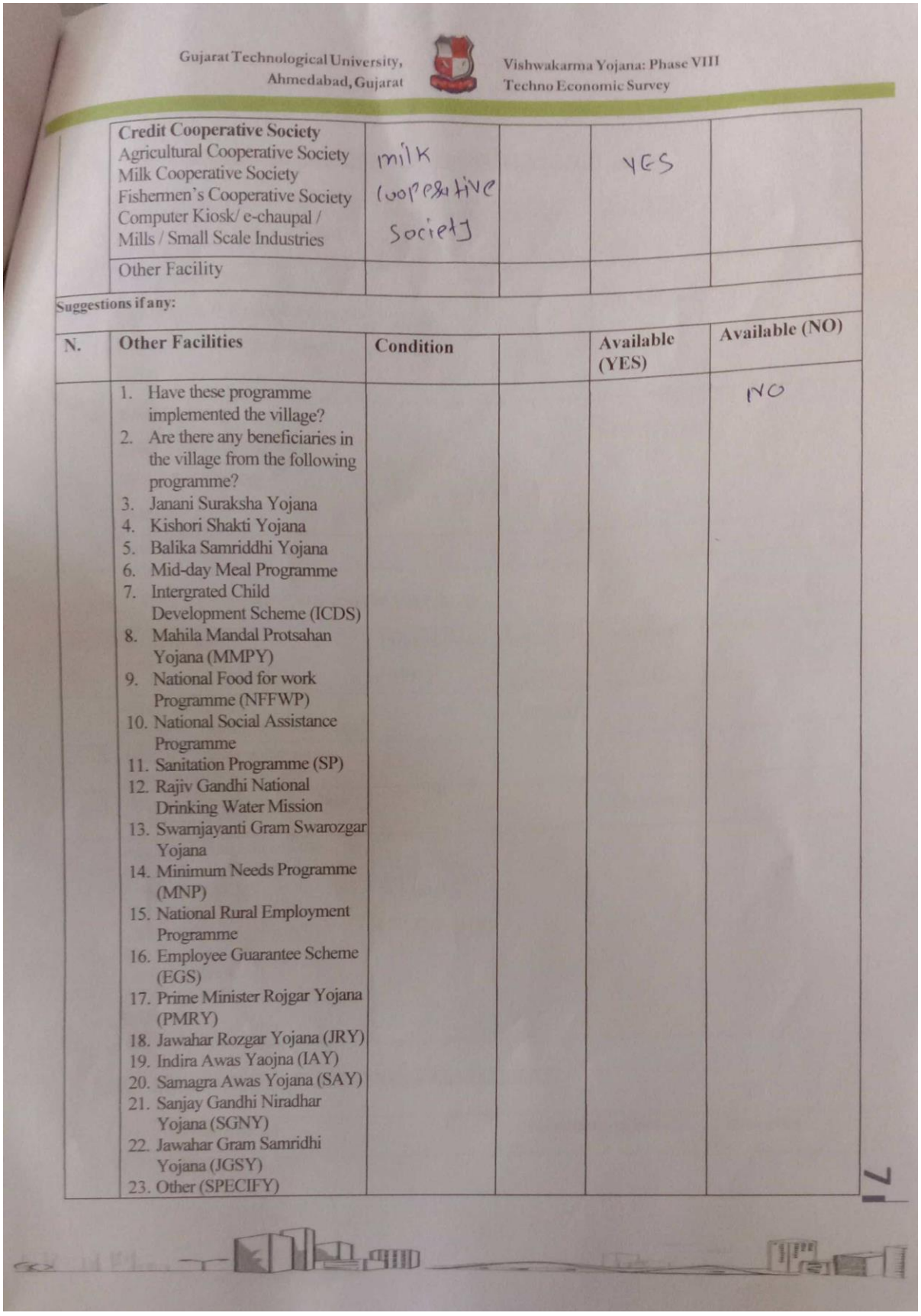
Suggestions if any:

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

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

Suggestions if any:

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



Gujarat Technological University, Ahmedabad, Gujarat

Vishwakarma Yojana: Phase VIII
Techno Economic Survey

	Credit Cooperative Society Agricultural Cooperative Society Milk Cooperative Society Fishermen's Cooperative Society Computer Kiosk/ e-chaupal / Mills / Small Scale Industries	milk cooperative society		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?				
	3. Janani Suraksha Yojana				
	4. Kishori Shakti Yojana				
	5. Balika Samriddhi Yojana				
	6. Mid-day Meal Programme				
	7. Intergrated Child Development Scheme (ICDS)				
	8. Mahila Mandal Protsahan Yojana (MMPY)				
	9. National Food for work Programme (NFFWP)				
	10. National Social Assistance Programme				
	11. Sanitation Programme (SP)				
	12. Rajiv Gandhi National Drinking Water Mission				
	13. Swarnjayanti Gram Swarozgar Yojana				
	14. Minimum Needs Programme (MNP)				
	15. National Rural Employment Programme				
	16. Employee Guarantee Scheme (EGS)				
	17. Prime Minister Rojgar Yojana (PMRY)				
	18. Jawahar Rozgar Yojana (JRY)				
	19. Indira Awas Yaojna (IAY)				
	20. Samagra Awas Yojana (SAY)				
	21. Sanjay Gandhi Niradhar Yojana (SGNY)				
	22. Jawahar Gram Samridhi Yojana (JGSY)				
	23. Other (SPECIFY)				

7

VI. SUSTAINABLE /GREEN INFRASTRUCTURE FACILITIES:

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

VII. DATA COLLECTION FROM VILLAGE

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

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	Required	
2.	Additional Information/ Requirement		
3.	During the last six months how many times CLEANING ..... FOGGING..... Drive was undertaken in the village?		

IX. Smart Village / Heritage Details

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

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

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

12.14 Original Patosan Village Techno - Economic Survey Form SAGY Questionnaire with the Sarpanch Signature

12.15 Gap Analysis

Facilities	Planning Commission/UDPFI Norms	Village Name:	PATOSAN	
		Population:		1533
		Existing	Required as per Norms	Gap
Social Infrastructure Facilities				
Education				
Anganwadi	Each or Per 2500 population	3	0	**3**
Primary School	Each Per 2500 population	1	0	**1**
Secondary School	Per 7,500 population	0	1	**1**
her Secondary School	Per 15,000 Population	0	0	**0**
College	Per 125,000 Population	0	0	**0**
ech. Training Institute	Per 100000 Population	0	0	**0**
Agriculture Research Centre	Per 100000 Population	0	0	**0**
Health Facility				

Govt/Panchayat Dispensary or Sub PHC or Health Centre	Each Village	1	0	**1**
PHC & CHC	Per 20,000 population	1	0	**1**
Child Welfare and Maternity Home	Per 10,000 population	0	0	**0**
Hospital	Per 100000 Population	0	0	**0**
Public Latrines	1 for 50 families (if toiletis not there in home, especially for slum pockets & kutchahouse)	0	1	**1**
Physical Infrastructure Facilities				

Transportation		**Adequate**	**Inadequate**	
Pucca Village Approach Road	Each village		NO	
Bus/Auto Stand provision	All Villages connected by PT (ST Bus or Auto)		YES	
Drinking Water (Minimum 70 lpcd)		**Adequate**	**Inadequate**	
Over Head Tank	1/3 of Total Demand		YES	
U/G Sump	2/3 of Total Demand		YES	
Drainage Network		**Adequate**	**Inadequate**	
open			YES	
cover			YES	
Waste Management System		**Adequate**	**Inadequate**	Inadequate
Electricity Network		**Adequate**	**Inadequate**	Inadequate
Socio- Cultural Infrastructure Facilities				
Community Hall	Per 10000 Population	0	1	**1**
community hall cum Public Library	Per 15000 Population	0	1	**1**
Cremation Ground	Per 20,000 population	0	0	**0**
Post Office	Per 10,000 population	1	0	**1**

Gram Panchayat Building	Each individual/group panchayat	1	0	**1**
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**

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

Sr. No	Village	Part- I	Part –II
1.	**Magodi (Gandhinagar)**	Rain water harvesting system (Civil)	Gruh Udhyog + Shopping Centre (Civil)
		Public Toilet Block (Civil)	Public Garden (Civil)
		Primary Health Center (Civil)	Public Library (Civil)
		Community Hall (Civil)	Veterinary Clinic (Civil)
		Skill Development Centre (Civil)	Fire Station (Civil)
		Museum (Civil)	Arts and Commerce College (Civil)
		Public Announcement System (Electrical)	GSM Based Well Water Level Monitor System (Electrical)
		Gas Leakage Alarm System(Electrical)	Automatic Phase Sequence Selector System (Electrical)
		Solar Based Pump set For Agriculture (Electrical)	Soft Starter Using 3 Phase Induction Motor (Electrical)
2.		Primary Health Centre (Civil)	Community Hall (Civil)

	Ropda (Ahmedabad)	Post Office (Civil)	Library (Civil)
		Bank (Civil)	E - Seva Kendra (Civil)
		Garden (Civil)	Animal Hospital (Civil)
		Bus Station (Civil)	Skill Development Centre (Civil)
		Road (Civil)	Fire Station (Civil)
		Green Building (Electrical)	Brightness Control Presence Sensor for Vehicle (Electrical)
		Application of motion sensor in building lightning installation for energy saving and reduce carbon footprint. (Electrical)	Irrigation Water Pump Controller using GSM (Electrical)
		LPG leakage protection system (Electrical)	Beacon Flasher using Micro Controller (Electrical)
3.	**Shela Gam (Ahmedabad)**	Design of Public Garden (Civil)	Road design (Civil)
		Public Health center (Civil)	Post office (Civil)
		Bio gas Plant (Civil)	Bus station (Civil)
		Public Toilet (Civil)	Common market yard (Civil)
		Public Library (Civil)	Atm design (Civil)
		Rainwater Harvesting (Civil)	Community center (Civil)
		Solar panel (Electrical)	Street pole design (Electrical)
		Smart bin concept (Electrical)	Solar pump design (Electrical)
		Wi-Fi tower (Electrical)	E-Panchayat design (Electrical)

4.	**Lapkaman (Ahmedabad)**	Public Toilet (Civil)	Solid waste management (Civil)
		Library (Civil)	Road maintenance (Civil)
		Primary Health Centre (Civil)	Rain water harvesting (Civil)
		Septic Tank (Civil)	Bio gas plant (Civil)
		Road maintenance (Civil)	Market yard (Civil)
		Community Hall (Civil)	Road design (Civil)
		Smart Irrigation System (Electrical)	Hybrid handicapped electric vehicle (Electrical)
		Automatic solar tracking syste	Smart dustbin management system (Electrical)
		GSM board synchronization with agriculture pump (Electrical)	Automatic bird repeller (Electrical)
5.	**Khodiyar (Ahmedabad)**	Public Toilet (Civil)	Gram Panchayat House (Civil)
		Medical Shop (Civil)	Hospital (Civil)
		Library (Civil)	Crematoria (Civil)
		Garden (Civil)	Road Pavement (Civil)
		Post Office (Civil)	Bus stand
		Bio Gas Plant (Civil)	Aanganwadi
6.	**Patosan (Banaskantha)**	Primary Health Centre (Civil)	Rain water Harvesting
		Solar Water Distribution System (Civil)	Pickup stand
		Park (Civil)	Krishi seva kendra
		Library (Civil)	Gram Panchayat

		Community Hall (Civil)	Bus stand
		Toilet (Civil)	Gram Panchayat building

12.17 Sarpanch Approval

L. D. College of Engineering, Ahmedabad-380 015
एल. डी. कोलेजऑफ इंजीनियरिंग, अहमदाबाद ३८००१५
Phone: 079-26306752 (Office), 26303190 Fax: 079-26303105, 26304118
Website: www.ldce.ac.in
Email:ldce_cidp@yahoo.com

ન. એલ.ડી.સી.ઇ./સીવીલ/વિશ્વકર્મા યોજના-૨૦૨૦/વિવિધ/366

તા. 16/06/2020

પ્રતિ,
સરપંચશ્રી
ગ્રામ: પટોસણ
તાલુકા: પાલનપુર
જિલ્લા: બનાસકાંઠા

વિષય: ગુજરાત ટેક્નોલોજીકલ યુનિવર્સિટી ના બેનર હેઠળ વિશ્વકર્મા યોજના-૨૦૨૦ (ફેઝ-૮) દ્વારાગામ ના વિકાસ માટે ની બાબત.

માનનીય સરપંચ શ્રી,

ઉપરોક્ત વિષય અન્વયે જનાવવાનું કે ગુજરાત ટેક્નોલોજીકલ યુનિવર્સિટી, ગાંધીનગર હેઠળ ચાલતી વિશ્વકર્મા યોજના-૨૦૨૦ (ફેઝ-૮) માં લા. દ. ઇજનેરી કોલેજ ના વિદ્યાર્થી દ્વારા ગુજરાત રાજ્યના ગામના વિકાસમાં ભાગીદાર થઇ વિકાસ ના કામો ચાલતા રહે અને આ કાર્યક્રમના ભાગરૂપે ગામની સમસ્યાઓનું ટેક્નોલોજી ની સહાય થી નિરાકરણ લાવી શકવાના પ્રયત્નો કરવામાં આવશે. જે અંતર્ગત આ વર્ષ માં આ કાર્યક્રમ હેઠળ આપ શ્રી ના ગામ પર પસંદગી ઉતારવામાં આવેલ છે. તો આપશ્રી ને અત્રે ની સંસ્થાના વિદ્યાર્થીઓને તેમના પ્રોજેક્ટ કાર્ય માટે જરૂરી મદદ કરવા યોગ્ય કરશોજી.

આભાર સહ,

સરપંચ
ગ્રામ પંચાયત પટોસણ

ખાતાના વડા (સિવિલ)
અધ્યાપક અને ખાતાના વડા
સિવિલ ઇજનેરી વિભાગ
લા. દ. ઇજનેરી મહાવિદ્યાલય
અમદાવાદ

બિડાણ: (1). પ્રોજેક્ટના કાર્ય અંતર્ગત લીધેલ વિદ્યાર્થીઓની યાદી.

L. D. COLLEGE OF ENGINEERING AHMEDABAD

CIVIL ENGINEERING DEPARTMENT

Date 19|09|2020

Ref. No. LDCE/CED/VY/Phase VIII 400

List of students of B.E. final year under Vishwkarma Yojana

Sr.No	Group No.	Student Name	Students Contact No.	Village Name	Enrollment Number	Students Branch
1	1	Paridiya Mahit P	7096525453	BOPDA, AHMEDABAD	170280106080	CIVIL
2		Patel Jigar Sureshbhai	7203859340		170280106066	CIVIL
3		MITESH NITINBHAI CHAUHAN	9376075384		170280109020	Electrical
4	2	Meet Jainam Rajeshbhai	9664955395	SHELA GAM, AHMEDABAD	170280106047	CIVIL
5		Sarvaiya Dilipbhai Bhupatbhai	9723139708		170280106095	CIVIL
6		JAY NAVINBHAI THAKKAR	7778059657		180283109026	Electrical
7	3	Panchal Sureshbhai Ganpatbhai	7622902391	LAPKAMAN, AHMEDABAD	170280106051	CIVIL
8		Parmar Piyush Haribhai	8200796342		170280106058	CIVIL
9		Sonawane Rushikesh Ravindra	7203868757		180283109023	Electrical
10	4	TAILOR RITIK HARISHBHAI	9908677561	MAGODI, GANDHINAGAR	180283106029	CIVIL
11		PANCHAL RITU SURESHBHAI	7069726002		180283106017	CIVIL
12		DIPAK VITHALBHAI CHAVDA	8264130785		180283109004	Electrical
13	5	Rao Mitulkumar Bharatbhai	7485893087	PATOSAN, BANASKANTHA	170280106090	CIVIL
14		KANER BHARATBHAI VIRAJIBHAI	9773446772		170280106036	CIVIL
15	6	patel vaibhav vishnubhai	7820051719	KHODIYAR, AHMEDABAD	170280106076	CIVIL
16		Shah Suney Kalpeshbhai	7048311024		170280106101	CIVIL

Prof. Utkarsh P. Nigam (Asst. Prof., Civil Engg. Dept.)

Nodal officer (Vishwkarma Yojana)

LDCE Ahmedabad

Head (Civil Engineering Department)

LDCE Ahmedabad

Prof. & Head

Civil Engineering Department

L. D. College of Engineering

Ahmedabad-380015

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

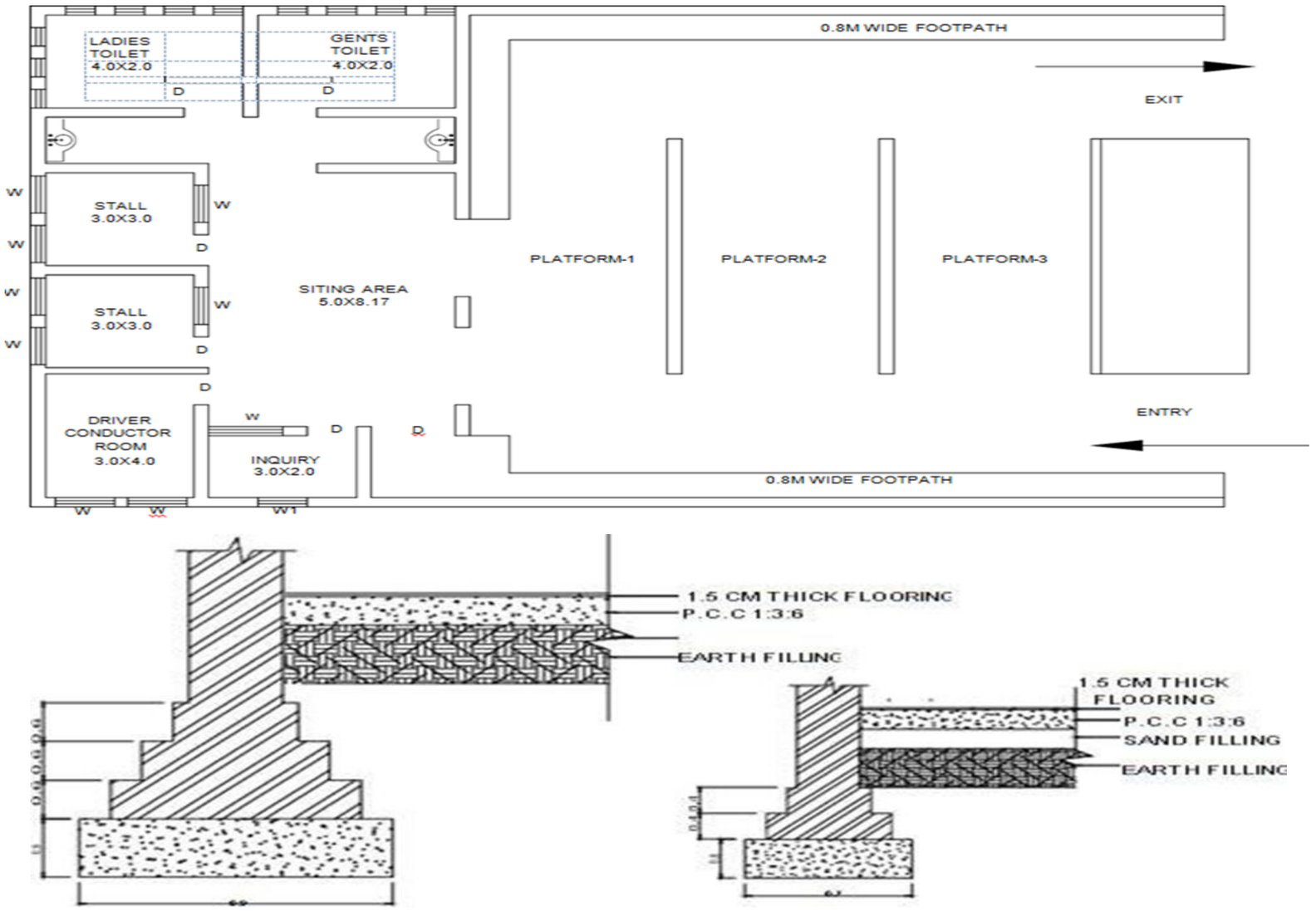


Fig. 60 Plan, Section & Elevation: Bus Stand

Table 33 Measurement Sheet of Bus Stop

TABLE 33: PROP. CONSTRUCTION WORK OF BUS STOP AT-PATOSAN, TAL:- PALANPUR, DIST:BANASKANTHA							
MEASUREMENT SHEET							
ITEM	DESCRIPTION	NO	L	B/W	H/D	QUANTIY	UNITS
ITEM NO.:- 1							
	Excavation for						
	Foundation						
	L= 86.4 m	1	86.4	0.9	0.9	69.984	Cu.m.
	TOTAL QTY					69.984	Cu.m.
ITEM NO.:- 2							
	C.C. work in foundation						
	L=86.4 m	1	86.4	0.9	0.8	23.33	Cu.m.
	TOTAL QTY					23.33	Cu.m
ITEM NO.:- 3							
	Brick masonry work in						
	Foundation						
	1st step						
	L=88.8 m	1	88.8	0.6	0.3	15.98	Cu.m.
	2nd step						
	L= 89.6 m	1	89.6	0.5	0.3	13.44	Cu.m.
	3rd step	1	90.4	0.4	0.6	21.70	Cu.m.
	L= 90.4 m						
	Total Brick masonry					51.12	Cu.m.
	work in foundation						
ITEM NO.:- 4							
	Earth filling work	1	4	2	0.45	3.6	Cu.m
			4	2	0.45	3.6	Cu.m

		1	3	3	0.45	4.05	Cu.m
		1	3	3	0.45	4.05	Cu.m
		1	3	4	0.45	5.4	Cu.m
		1	3	2	0.45	2.7	Cu.m
		2	5	8.17	0.45	18.38	Cu.m
		2	1.5	4	0.45	0.154	Cu.m
		1	1	4	0.45	3.6	Cu.m
		1	1.2	2	0.45	1.08	Cu.m
	TOTAL					51.86	Cu.m
ITEM NO.:- 5							
	Brick masonry work in						
	super structure						
	L=93.9 m	1	93.9	0.3	3.0	84.51	Cu.m.
	Deduction for door &						
	Window						
	Door – D	7	1.2	0.3	2.1	5.202	Cu.m.
	Window – W	9	1.2	0.3	1.8	5.832	Cu.m.
	Window – W 1	1	0.9		1.8	0.456	Cu.m.
	Ventilator – V	11	0.6	0.3	0..6	1.188	Cu.m.
	Deduction for lintel	1	93.9	0.3	0.6	4.225	
	Total Brick masonry						
	Work						
						71.692	Cu.m.
ITEM NO.:- 6							
	Lintel work as per						
	Above					4.225	Cu.m.
ITEM NO.:- 7							
	Internal plaster work	4	4			48	Sq.m.
		2	2			12	Sq.m.
		4	4			48	Sq.m.
		2	2			12	Sq.m
		3	3		3	27	Sq.m
		2	3		3	18	Sq.m
		3	3		3	27	Sq.m

		2	3		3	18	Sq.m
		2	3		3	18	Sq.m
		2	4		3	24	Sq.m
		3	2		3	18	Sq.m
		2	3		3	18	Sq.m
		2	15		3	9	Sq.m
	TOTAL					297	Sq.m
ITEM NO.:- 8							
	White wash as per					297	Sq.m.
	Above						
ITEM NO.:- 9							
	Flooring work	1	4		2	8	Sq.m
		1	4		2	8	Sq.m
		1	3		3	9	Sq.m
		1	3		3	9	Sq.m
		1	3		4	12	Sq.m
		1	3		2	6	Sq.m
		1	5		8.17	40.85	Sq.m
		2	1.5		4	12	Sq.m
		2	1		4	8	Sq.m
		1	1.2		2	2.4	Sq.m
	Total Flooring work					115.85	Sq.m
ITEM NO.:- 10							
	Skirting work	2	9.6			19.2	Sq.m.
		2	6			12	Sq.m.
	Total Skirting work					31.2	Sq.m.
ITEM NO.:- 11							
	R.C.C Work for slab						
	L=16.4 m	1	16.4	8.9	0.15	25.45	Cu.m.
	B= 8.9 m						
	H= 0.15 m						

Table 33.1 Abstract Sheet of Bus Stop

PROP. CONSTRUCTION WORK OF BUS STOP AT- PATOSAN, TAL:- PALANPUR, DIST:BANASKANTHA					
ABSTRACT SHEET					
Sr.	**Item description**	**Quantity**	**Rate**	**Per**	**Amount**
1.	Excavation work	69.984	155	Cu.m.	10847
2.	P C.C	23.33	3000	Cu.m.	69990
3.	Brickwork in Foundation	51.12	3200	Cu.m.	163584
4.	Brickwork in Superstructure	71.692	3500	Cu.m.	250922
5.	Plastering	297	150	Sq.m.	44550
6.	Flooring	115.85	855	Sq.m.	99051
7.	R.C.C slab	25.45	4900	Cu.m.	124705
8.	Painting	297	25	Sq.m.	7425
				Total Rupees	771074
				Conti… .... 05.00% Rupees	38553
				10% contractor charges	77107
				2% water charges	15421
				Total Amount Rupees	902155
				Say Rupees	9,00,000

1.2 Design Of Aanganwadi Kendra

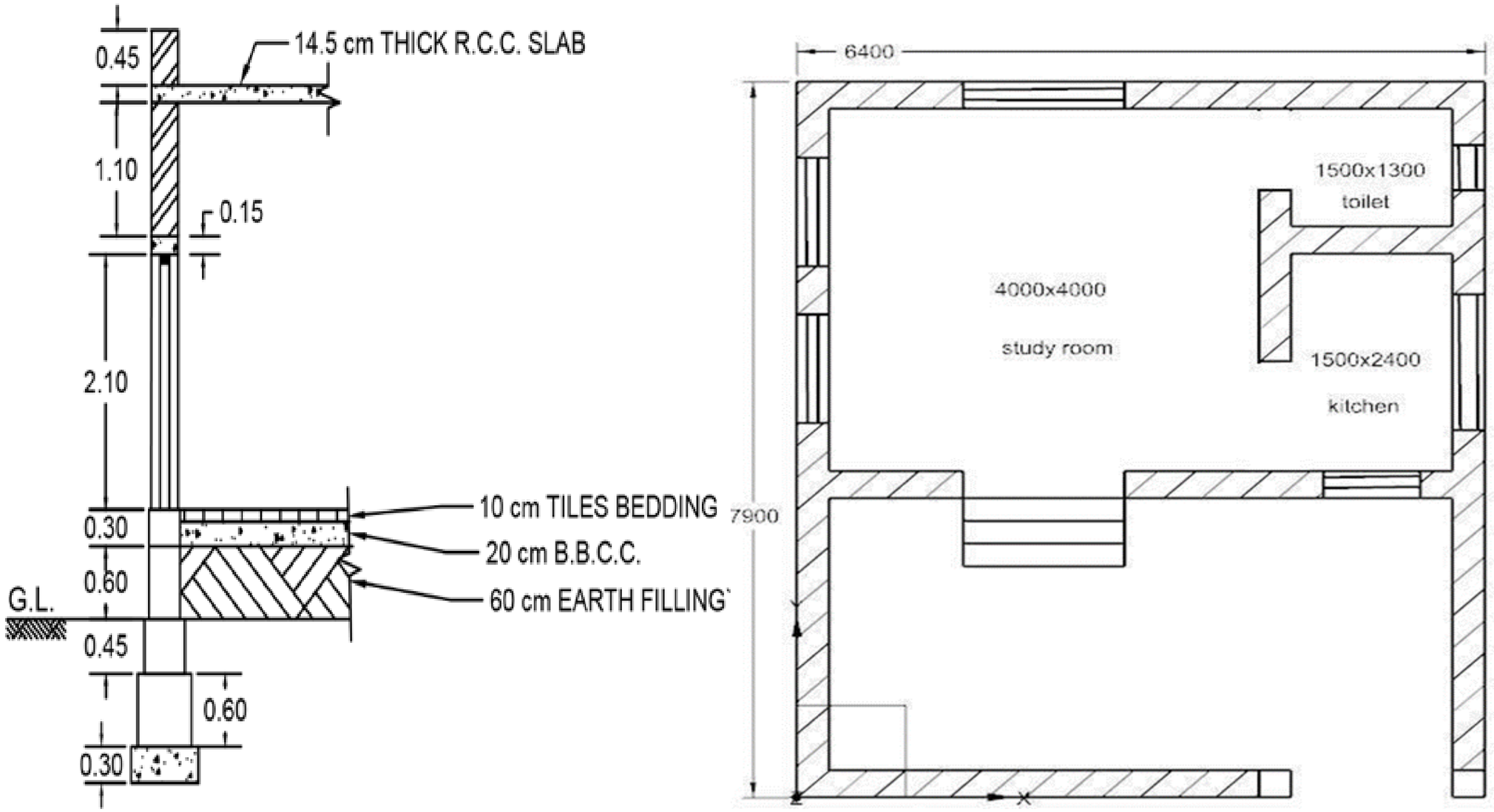


Fig 59 Anganwadi Center (Plan & Section)

Table 32 Measurement Sheet of Anganwadi center

PROP. CONSTRUCTION WORK OF ANGANVADI AT- PATOSAN, TAL:- PALANPUR, DIST:BANASKANTHA							
MEASUREMENT SHEET							
ITEM	DESCRIPTION	NO	L	B/W	H/D	QUANTIY	UNITS
ITEM NO.:- 1							
	Excavation for						
	Foundation						
	L= 49.5 m	1	49.5	0.75	1.35	50.12	Cu.m.
	TOTAL QTY					50.12	Cu.m.
ITEM NO.:- 2							
	C.C. work in foundation						
	L=49.5 m	1	32.4	0.75	0.3	11.13	Cu.m.
	TOTAL QTY					11.13	Cu.m
ITEM NO.:- 3							
	Brick masonry work in						
	Foundation						
	1st step						
	L=47.7 m	1	47.7	0.6	0.6	17.17	Cu.m.
	2nd step						
	L= 48.15 m	1	48.15	0.45	0.45	9.75	Cu.m.
	Total Brick masonry					26.32	Cu.m.
	work in foundation						
	Brick masonry work						
	for step						
	1st step	1	1.5	0.9	0.25	0.3375	Cu.m.
	2st step	1	1.5	0.6	0.25	0.225	Cu.m.
	3st step	1	1.5	0.3	0.25	0.1125	Cu.m.
	Total Brick masonry					0.675	Cu.m.
	work for step						

ITEM NO.:- 4							
	Earth filling work						
	Study Room	1	4	4	0.45	7.2	Cu.m.
	Kitchen	1	1.5	2.4	0.45	1.62	Cu.m.
	Toilet	1	1.5	1.3	0.45	0.87	Cu.m.
					Total	9.70	Cu.m.
ITEM NO.:- 5							
	D.P.C work						
	L=49.5 m	1	49.5	0.3		14.85	Rmt
ITEM NO.:- 6							
	Brick masonry work in						
	super structure						
	L=49.5 m	1	49.5	0.3	3.35	49.74	Cu.m.
	Deduction for door &						
	Window						
	Door – D1	1	1.5	0.3	2.1	0.945	Cu.m.
	Door – D2	1	1.2	0.3	2.1	0.756	Cu.m.
	Door – D3	1	0.9	0.3	2.1	0.567	Cu.m.
	Window – W1	2	1.5	0.3	1.2	1.08	Cu.m.
	Window – W2	2	1.2	0.3	1.2	0.864	Cu.m.
	Window – W3	1	0.9	0.3	1.2	0.324	Cu.m.
	Ventilator – V	1	0.5	0.3	0.5	0.075	Cu.m.
	Deduction for lintel						
	Door – D1	1	1.5	0.3	0.15	0.0675	Cu.m.
	Door – D2	1	1.2	0.3	0.15	0.054	Cu.m.
	Door – D3	1	0.9	0.3	0.15	0.040	Cu.m.
	Window – W1	2	1.5	0.3	0.15	0.135	Cu.m.
	Window – W2	2	1.2	0.3	0.15	0.108	Cu.m.
	Window – W3	1	0.9	0.3	0.15	0.040	Cu.m.
	Ventilator – V	1	0.5	0.3	0.15	0.0225	Cu.m.
			Total Deduction			5.078	Cu.m.
	Total Brick masonry						
	Work						
	=49.74– 5.078					44.662	Cu.m.
ITEM NO.:- 7							
	Lintel work as per						
	Above					44.662	Cu.m.

ITEM NO.:- 8							
	Internal plaster work(12mmthick)						
	Study room	2	4		3.35	26.8	Sq.m.
		2	4		3.35	26.8	Sq.m.
		1	4	4		16	Sq.m.
	kitchen	2	1.5		3.35	10.05	Sq.m.
		2	2.4		3.35	16.08	Sq.m.
		1	1.5	2.4		3.6	Sq.m.
	Toilet	2	1.5		3.35	10.05	Sq.m.
		2	1.3		3.35	8.71	Sq.m.
		1	1.5	1.3		1.95	Sq.m.
					Total	120.04	Sq.m.
	Deduction In internal plaster						
	Door – D1	½ x 1	1.5		2.1	1.575	Sq.m.
	Door – D2	½ x 1	1.2		2.1	1.26	Sq.m.
	Door – D3	½ x 1	0.9		2.1	0.945	Sq.m.
	Window – W1	½ x 2	1.5		1.2	1.8	Sq.m.
	Window – W2	½ x 2	1.2		1.2	1.44	Sq.m.
	Window – W3	½ x 1	0.9		1.2	0.54	Sq.m.
	Ventilator – V	½ x 1	0.5		0.5	0.125	Sq.m.
					Total	7.685	Sq.m.
	Total internal Plaster						
	Work						
	=120.04 –7.685					112.35	Sq.m.
ITEM NO.:- 9							
	White wash as per					112.35	Sq.m.
	Above						
ITEM NO.:- 10							
	Brick masonry work	1	14.7	0.20	0.45	1.323	Cu.m.
	For parapet wall						
ITEM NO.:- 11							
	External plaster work						
	For long wall	2	4.6		4.845	44.57	Sq.m.
	For short wall	2	6.4		4.845	62.01	Sq.m.
	Inner side of parapetwall	1	14.7		0.45	6.661	Sq.m.

	Top of parapetwall	1	14.7	0.2		2.94	Sq.m.
	TOTAL					116.18	Sq.m.
	Deduction for door &						
	window						
	Door – D1	½ x 1	1.5		2.1	1.575	Sq.m.
	Window – W1	½ x 2	1.5		1.2	1.8	Sq.m.
	Window – W2	½ x 2	1.2		1.2	1.44	Sq.m.
	Window – W3	½ x 1	0.9		1.2	0.54	Sq.m.
	Ventilator – V	½ x 1	0.5		0.5	0.125	Sq.m.
					Total	5.48	Sq.m.
	Total External plaster work						
	=116.18 – 5.48					179.94	Sq.m.
ITEM NO.:- 12							
	External white wash as per above					179.94	Sq.m.
ITEM NO.:- 13							
	Flooring work						.
	Study Room	1	4.0	4.0		16.00	Sq.m.
	Kitchen	1	1.5	2.4		3.60	Sq.m.
	Toilet	1	1.5	1.3		1.95	Sq.m.
	Step:						
	Riser	2	1.5		0.15	0.45	Sq.m.
	Tread	3	1.5	0.25		1.125	Sq.m.
	Door Sill						
	Door1	1	1.5	0.3		0.45	Sq.m.
	Door2	1	1.2	0.3		0.36	Sq.m.
	Door3	1	0.9	0.3		0.27	Sq.m.
	Total Flooring work					24.20	Sq.m.
ITEM NO.:- 14							
	Skirting work						
	Study Room	2	4			8.0	Rmt
		2		4		8.0	Rmt
	Kitchen	2	1.5			3.0	Rmt
		2		2.4		4.8	Rmt
	Door1	2	1.5			3.0	Rmt
	Door2	2	1.2			2.4	Rmt
	Door3	2	0.9			1.8	Rmt

	Total Skirting work					31.00	Rmt
ITEM NO.:- 15							

	Plaster Work on Compound Wall						
	Internal plaster	2	3		1.5	9.0	Sq.m.
		1	6.1		1.5	9.15	Sq.m.
	External Plaster						
		2	3.3		1.5	9.9	Sq.m.
		1	6.4		1.5	9.6	Sq.m.
	Top of compound wall	1	9.7	0.3		2.91	Sq.m.
				Total		40.56	Sq.m.
	Deduction For Gate	1	1.5		1.5	2.25	Sq.m.
	Total Plaster on Compound Wall	40.56-2.25				38.31	Sq.m.
ITEM NO.:- 16							
	R.C.C Work for slab						
	L=4.6 m	1	4.6	6.4	0.145	1.484	Cu.m.
	B= 6.4 m						
	H= 0.145 m						

PROP. CONSTRUCTION WORK OF BUS STOP AT-PATOSAN, TAL:- PALANPUR, DIST:BANASKANTHA

ABSTRACT SHEET

Sr.	Item description	Quantity	Rate	Per	Amount
1.	Excavation work	50.12	155	Cu.m.	7768.6
2.	P C.C	11.13	3000	Cu.m.	33390
3.	Brickwork in foundation	26.32	3200	Cu.m.	84224
4.	Brickwork in superstructure	44.66	3500	Cu.m.	156310
5.	Plastering	330.6	150	Sq.m.	49590
6.	Flooring	24.20	855	Sq.m.	20691
7.	R.C.C slab	1.484	4900	Cu.m.	7271.6
8.	White Washing	292.29	15	Sq.m.	4384.35
9.	Painting	330.6	25	Sq.m.	8265
				Total Rupees	371894.55
				Conti… .... 05.00% Rupees	18594.72
				10% contractor charges	37189.45
				2% water charges	7437.89

	Total Amount Rupees	435115.34
	Say Rupees	436000.00
	(FOUR LAKH THIRTY SIX THOUSAND ONLY)	

13.3Rain Water Harvesting System

Existing Situation:

The rain water harvesting facility is not present in the village. There are also trouble in the drinking water. Refer the Figure number 52.

We propose the rain water harvesting design.
Data:
To design rain water harvesting system we found out average rainfall data of last 10 years is 928 mm in ahmedabad
We design this system on toilet block in village.
Average rainfall: 928mm = 0.93 meter = 3.04 foot = 37 inch.

Catchment area of rainfall= 7ft X 13ft = 91ft2
= 2.13m X 3.96m =8.43m2
Volume of rainfall water= catchment area X rainfall
= 8.43 X 0.93
=7.84m3 = 7840 liter /year We can provide tank is about 8 cubic meter capacities.

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

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

Filter: The filter is used to remove suspended pollutants from rainwater collected over roof. A filter unit is a chamber filled with filtering media such as fiber, coarse sand and gravel layers to remove debris and dirt from water before it enters the storagetank.
Storage tank:the storage tank can construct underground inrectangular shape with RCC work. Overflow tank:The overflow tank is provided for safety against overflow of storagetank

COMPONENT DETAILS OF RWH Model

Component	Width(m)	Length(m)	Height(m)
filter tank	1	1	1

underground tank	2	2	2
over flow tank	1	1	1

Excavation Work

Description	Length(m)	Width(m)	Height(m)	Volume(m3)
FILTER TANK	-	-	-	0
WATER TANK	2 .15	2.15	2.1	9.7
OVER FLOW TANK	1.15	1.15	1.1	1.462
			Total	11.162

RCC WORK:

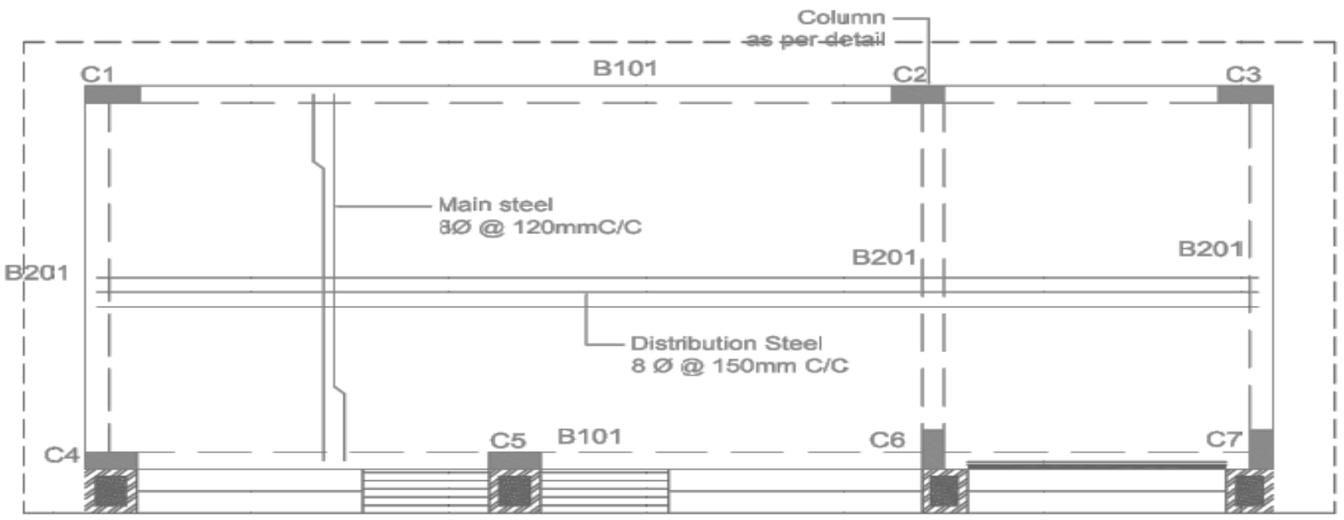
	Description	Numbers	Dimension			Volume (m3)
			Length (m)	Width (m)	thickness (m)	
FILTER TANK	bottom slab	1	1	1	0.15	0.15
	side wall	4	1	1	0.15	0.6
	top slab	1	1	1	0.1	0.1
WATER TANK	bottom slab	1	2	2	0.15	0.6
	side wall	4	2	2	0.15	2.4
	top slab	1	2	2	0.1	0.4
Deduction	opening cover	1	0.5	0.5	0.1	-0.025

OVER FLOW TANK	bottom slab	1	1	1	0.15	0.15

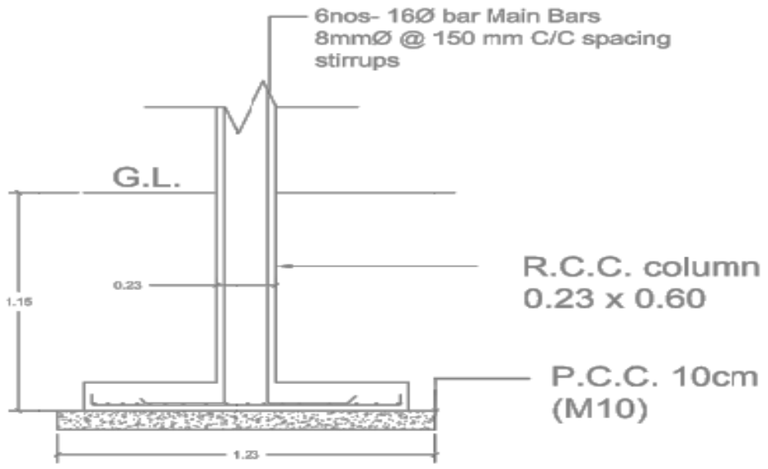
Abstract sheet of RWH

ABSTRACT SHEET(RWH)					
Item No.	Description	Quantity	Rate	Per	Total amount
1	Earth Work	11.162	320	m^3	3571.84
2	R.C.C. work	5.075	3429.3	m^3	17403.6975
			Total		20975.5375
		Contractor's Profit(5% of total cost)			1048.776875
		Contingency+water Charges+Plumbing(5%+1.5% of total cost)			1363.409938
	Overall cost of RWH				23387.72431 ≈23390 Rs.

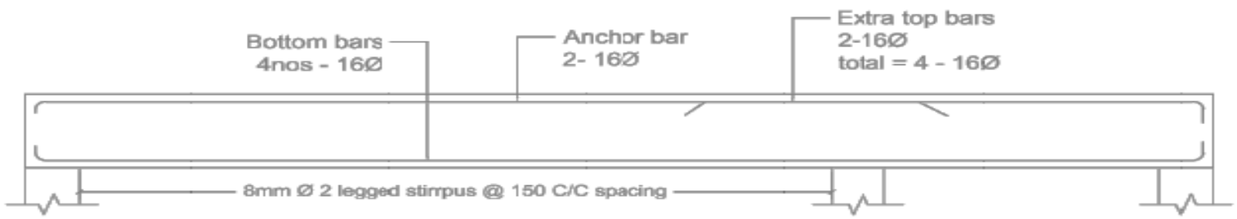
13.4



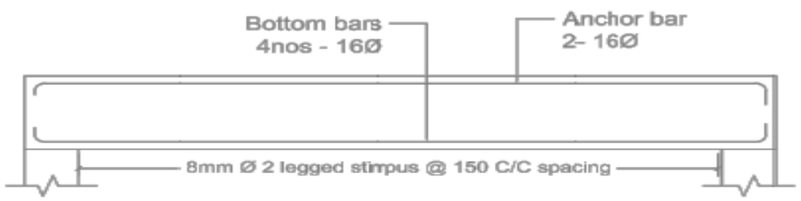
STRUCTURAL LAYOUT



Section of Footing

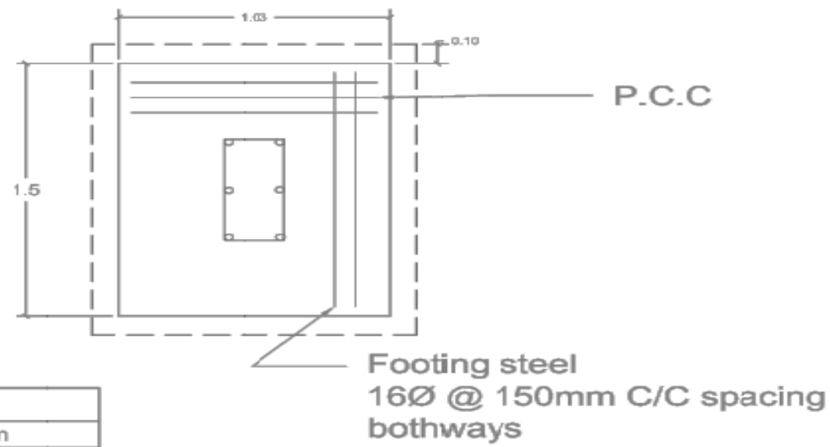


DETAIL OF B101 (230 x 450)



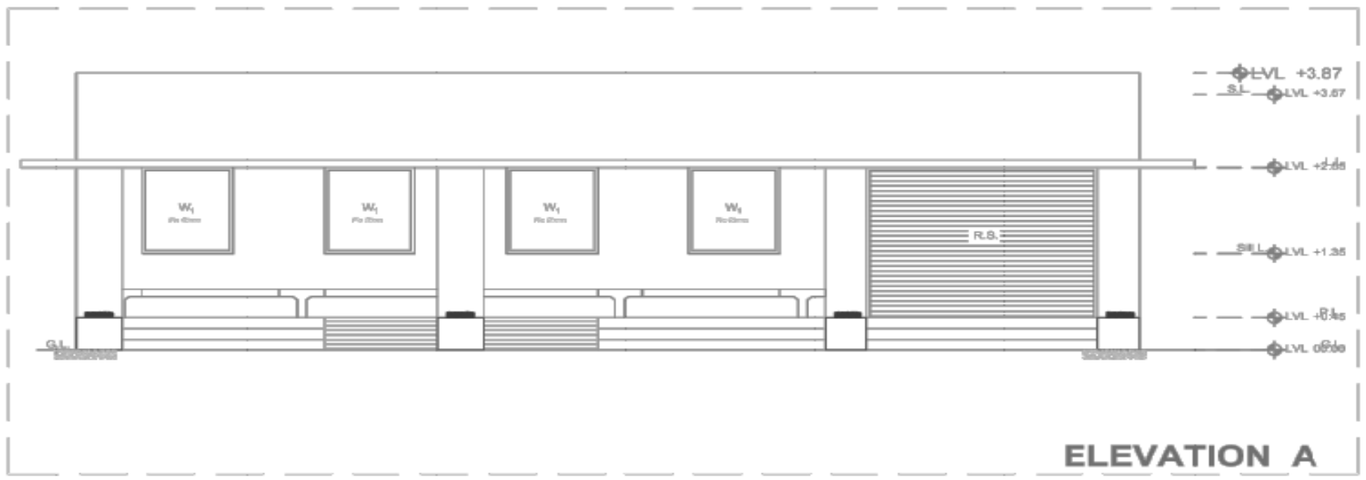
DETAIL OF B201 (230 x 450)

Schedule for Cover	
Footing	50mm
Column	40mm
Beam	30-20mm
Slab	20mm

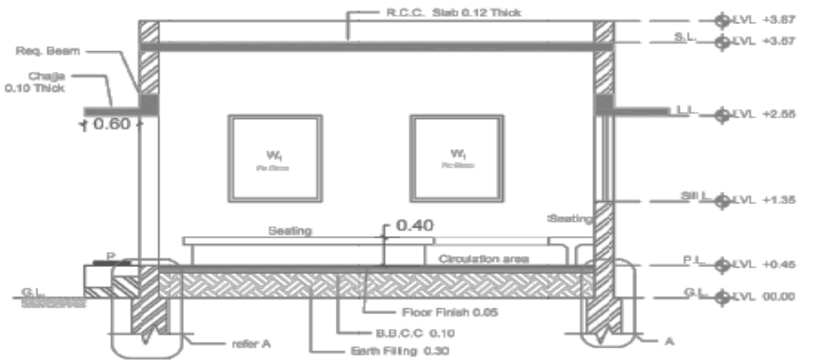


Footing Plan

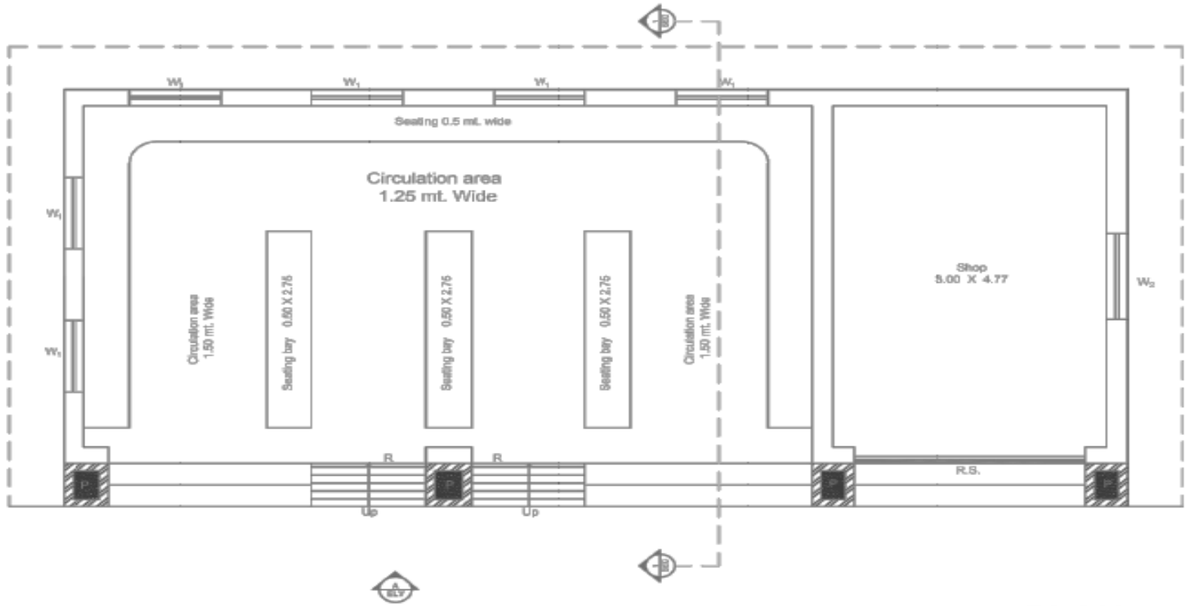
Design of pick up stand



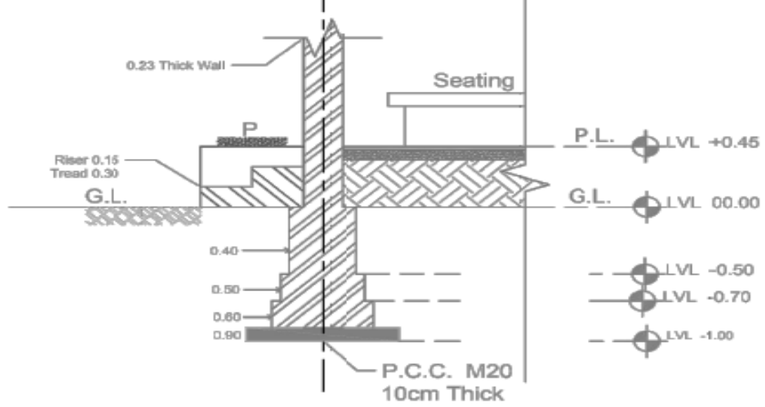
ELEVATION A



SECTION 1-1



PLAN



DETAIL A

Design of pick up stand

Table 38 Measurement Sheet for Pick up stand.

Sr. No.	Item description	L (mt)	B (mt)	H (mt)	Q	TOTAL Q
1.	Excavation for foundation.	25.00	0.90	1.0	22.500	
	Excavation for column.	7 X1.03	1.50	1.15	12.437	34.937 cum
2	Masonry in Foundation.					
	For 0.90 mt. width	33.00	0.90	0.10	2.970	
	For 0.60 mt width	33.00	0.60	0.30	5.940	
	For 0.50 mt width	33.00	0.50	0.20	3.300	
	For 0.40 mt width	33.00	0.40	0.50	6.600	18.81 cum
3.	Back filling in plinth.					12.023 cum
4.	Masonry in plinth.	37.69	0.23	0.45	3.900	3.90 cum
5.	Masonry in super structure.	37.69	0.23	2.10	18.204	
		37.69	0.23	0.60	5.201	
		23.38	0.23	0.30	1.6132	
		9.54	0.23	0.30	0.658	
	Planter	0.9 X4	0.10	0.45	0.162	
	Stair	7.27	0.476		3.460	
	Deduction					
	Gap	3.48	0.23	2.10	1.680	
	Gap	3.75	0.23	2.10	1.811	
	R.S.	2.54	0.23	2.10	1.227	
	W_1	1.0 X 6	0.23	1.20	1.656	
	W_2	1.20	0.23	1.20	0.331	
		Net masonry work in superstructure				22.593 cum
6.	P.C.C. in foundation.	37.02	0.90	0.10	3.330	3.330 cum
7.	R.C.C. in Chajja.	21.744		0.10	2.174	
	Lintel on walls (consider through lintel).	37.69	0.30	0.23	2.600	4.774
8.	R.C.C. Slab 0.12 mt thick.	11.69	5.23	0.12	7.336	7.336 cum
9.	Earth filling in plinth.	8.00	4.77	0.30	11.448	
		3.00	4.77	0.30	4.293	15.741 cum
10.	B.B.C.C.	8.00	4.77	0.10	3.816	
		3.00	4.77	0.10	1.431	5.247 cum
11.	Floor finish.	8.00	4.77	-	38.16	
		3.00	4.77	-	14.31	52.47 cum
12.	Plastering (smooth internal).	8.00	-	3.00	24.00	
		4.77 X 2	-	3.00	28.620	66.810 sq.mt
		3.00	-	3.00	9.000	

	4.77 X 2	-	3.00	9.540	
Deduction for windows.	1.0 X 6 X 0.50	-	1.20	3.600	
	1.0 X 0.5	1.2	1.2	0.720	
External plastering.	11.69	-	3.87	-	45.24 sq.mt
White washing.	As per above				112.65 sq.mt
Painting.	As per above				112.65 sq.mt

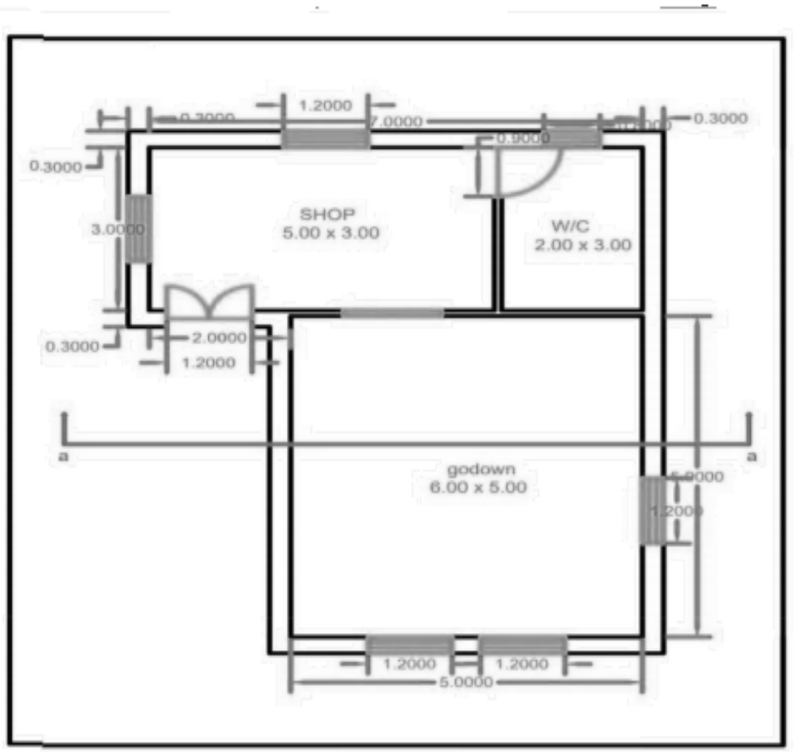
Table 39 Abstract sheet for Pick Up stand.

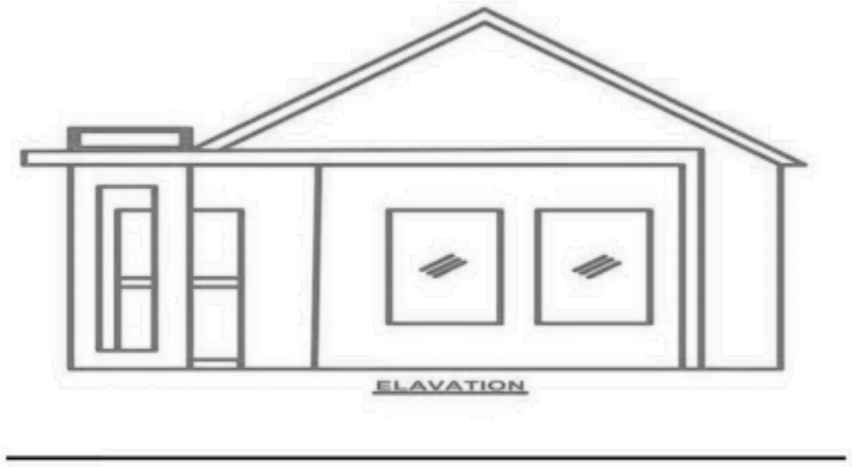
Sr. No.	Item description	Quantity	Rate	Per unit	Total Rs.
1.	Excavation for foundation up to 1.5 mt. depth and 30mt lead.	34.937	93.20	Cum.	3256.128
2.	Second class Masonry in Foundation.	18.810	3200.00	Cum.	68144.000
3.	Back filling in foundation trench.	12.023	70.00	Cum.	841.6100
4.	Masonry in plinth.	3.900	3050.00	Cum.	11895.000
5.	First class Masonry in super structure.	22.593	3270.00	Cum.	73879.110
6.	P.C.C. in foundation.	3.330	2048.00	Cum.	6819.884
7.	R.C.C. work for chajja and lintel, lintel, column.	10.774	13000.0	Cum.	140062.0
8.	R.C.C. Slab 0.12 mt thick.	7.336	8800.00	Cum.	64556.80
9.	Earth filling in plinth.	15.741	120.00	Cum.	1888.920
11.	Floor finish.	52.470	370.00	Sq.mt	19413.900
12.	Plastering (smooth internal) 15mm thick.	66.810	156.00	Cum.	10422.360
13.	External plastering 20 mm thick finish with paint.	45.240	156.00	Sq.mt.	8550.360
14.	White washing on both sides.	112.6	7.80	Sq.mt	878.770

		5			
15.	Painting.	112.65	72.00	Sq.mt	8110.800
				Cost	2,12,211.933
				Add 2% water charges	4244.238
				Add 10% contractor's profit	21,221.190
				Total cost for one unit	**2,37,677.361**
				For two units	**4,75,354,72**

Table 40 Material Consumption sheet
for Pick up stand (For one unit).

Sr. No.	**Item**	**Quantity**	**Unit**
1.	Cement	369.66	Bags
2.	Sand	23.195	Cum
3.	Aggregate	16.87	Cum
4.	Brick	12000	Nos.
5.	Steel	16mm Dia. = 980	Kg.
		8mm Dia. = 390	





13.5 Kisan seva kendra

: Measurement sheet						
sr no	Particular	No`s	L	B	H	Total
1	Excavation in ordinary	1	53.5	0.7	0.8	29.96
	Soil					
	net CL:106.32					
2	P.C.C (1:4:8)	1	53.5	0.7	0.3	11.23
	For foundation					
3	Brick masonry upto	1				
	plinth level					
	L=106.92					
	1st step	1	53.5	0.4	0.2	4.2
		1	45.6	0.3	0.2	2.73
		1	62.5	0.2	0.7	8.75
	Total					29.64
4	Damp proof concrete	1	53.5	0.3		16.05
5	Brick masonry	1	90.76	0.3	3	85.36
	for wall					
	DEDUCTION					
	D1	3	1.1	0.3	2.1	2.07
	W1	2	1.5	0.3	1.2	1.08
	W2	6	1.2	0.3	1.2	2.6
6	RCC for slab	1	5.5	5.5	0.1	7.06
7	RCC work for lintel					
	& chajja					
	D	3	1.8	0.6	0.1	0.324
	W1	2	1.5	0.3	0.15	0.185
	W2	6	1.2	0.2	0.15	0.216
	TOTAL					0.675
8	Flooring work	3	5.5	5.5		70.6
9	wood work/					
	door & window					
	D	3	1.1		2.1	6.93
	W1	2	1.5		2.1	6.3
	W2	6	1.2		2.1	15.12

10	Smooth plaster					
	Inside	12	5.5		3	125
	DEDUCTION					5.75
	TOTAL					99.25
11	Outer plaster	1	43.65		3	130.95
	DEDUCTION					5.75
12	Parapet wall	2	16.2	0.3	0.6	5.832
		2	5.8	0.3	0.6	2.088

Abstract sheet

No	Item	Quantity	Rate	Per	mount
1	Excavation in foundation (1.18	29.96	205	m3	6141.8
	m depth including sorting out				
	and stacking of useful materials				
	and disposing of the excavated				
	stuff up to 50 meter lead)				
2	P.C.C 1:3:6 using 40mm/20mm	11.23	3103	m3	34862
	and down size graded stone				
	aggregates including machine				
	mixing , providing formwork if				
	required , placing compacting				
	by hand ramming,curing etc				
	Complete				
3	Brick masonary upto plinth level	16.05	3200	m3	51360
	(providing and constructing				
	230mm& above thickness brick				
	masonary in CM 1:5 using				
	bricks having minimum compressive				
	strength 35 Kg/cm2)				
4	DPC providing and laying 50mm thick	31.89	300	m3	9567
	DPC in PCC 1:2:4 mix with 6 to 12 mm				

	size HBG aggregate in two layers of 20				
	mm thick with two coats of hot bitumen				

5	Brick masonary above plinth upto slab	89.93	3321	m3	298657.5
	level (providing and constructing 230mm				
	& above thickness brick masonary in CM				
	1:5 using brick having minimum				
	compressive strength 35kg/cm2)				
`	RCC Work for slab providing mixing and	9.07	4937	m3	44778.59
	placing RCC 1:1.5:3 mix for footings				
	& pilecaps with OPC/PPC using 20mm and				
	down size graded crushed aggregate				
	including providing and fixing necessary				
	plywood /steel shuttering scaffolding				
	machine mixing , compacting by vibrator				
	curing hacking the surface to receive				
	plaster etc complete				
7	RCC work for lintel specification same as	0.675	4937	m3	3332.47
	Above				
8	Flooring work providing and laying 300mm				
	300mm matt finish 1st quality ceramic				
	tiles of 6/8 thick flooring of approved				
	make & shade & flakes with straight edges				
	& perfect corner laid at right angle as				
	per design & pattern over a bedding of				
	cement mortar of 30mm to 60mm thick				
	Cover				
9	Wood work for door window providing	28.35	2500	m3	70875
	& fixing door shutter made of aluminium				
	panel sheets 3"_1.5" aluminium style &				
	rails EPDN rubber for pasted sealing with				
	aluminium frame , hinges, handles, bolts				
	Etc				

10	Smooth plaster inside providing and laying	192.25	130	m3	24992
	15mm thick smooth cement plastering				

	with Niru/lime finish in 1:4 CM in single				
	coat to all the interiou wall				
11	Outer plaster (CM 1:4) same as above	125.2	130	m3	16276
12	Brick work for parapet wall	7.92	3321	m3	26303
				total	587144
	3% electrification and plumbing work				20000
	Total				590000

13.6

Smart design–design of pavement in graveyard with paver block There are many advantages of Concrete Pavers as compared to OtherPaving Solutions.

Versatility& safety Low cost
Unlimited paver styles and
colors Custom designs
Easy installation
Maintenance Free
Superior physical characteristics
DURABILITY 50 years + life
expediency No cracking
4time stronger then poured
concrete Withstands freeze-thaw
conditions
Pavers are a flexible system and allow for movemt

LOW MATERIAL & INSTALLATION COST

ThecostofConcretepaversismuchlessthanothertypeofpavingproductssince they are manufactured with machines as compared to other naturally occurring products.Concrete pavers are usually less expensive than clay pavers, granite pavers or sandstone pavers. When considering maintenance and replacement costs,concrete pavers offer an economical long-term alternative to other types of paving options. For small and simple projects cost can be also reduced by a home owner installing the pavement themselves using installation guides provided by the manufacturer of the paver products.

HIGH STRENGTH

Concrete pavers are manufactured in a steel mold under exacting factory conditions & tight dimensional tolerances, thus resulting in a product that is many times stronger than regular poured concrete and more durable than black asphalt. They can withstand years of abuse and last for generations. In addition these interlocking paving units allow for expansion and contraction without producing surface cracks unlike monolithic concrete surfaces and stamped concrete. Each unit has joints that allow for a small amount of movement without cracking.

MAINTENANCE

Pavers are low-maintenance and offer low life-cycle costs than any other paving products such as Asphalt, poured concrete, and stamped concrete. Pavers are easily maintained by regular sweeping and occasional rinsing. In the case tough stains, pressure washing with appropriate cleaning solutions or a simple spot treatment with a brush, cleaning solvent & water. Pavers can be repaired by lifting the affected area, re- grading and re-compacting the base and bedding sand and reinstalling the same pavers. It is an inexpensive procedure that leaves no unsightly repair patches. Concrete pavers also provide a functional and easy way for conducting maintenance to the under base or underground utilities. Simply remove

and reinstate the same pavers

Cost Estimate of Pavement with paver block

Rubberised PVC moulds for paver block 100 sq. Ft. = 262

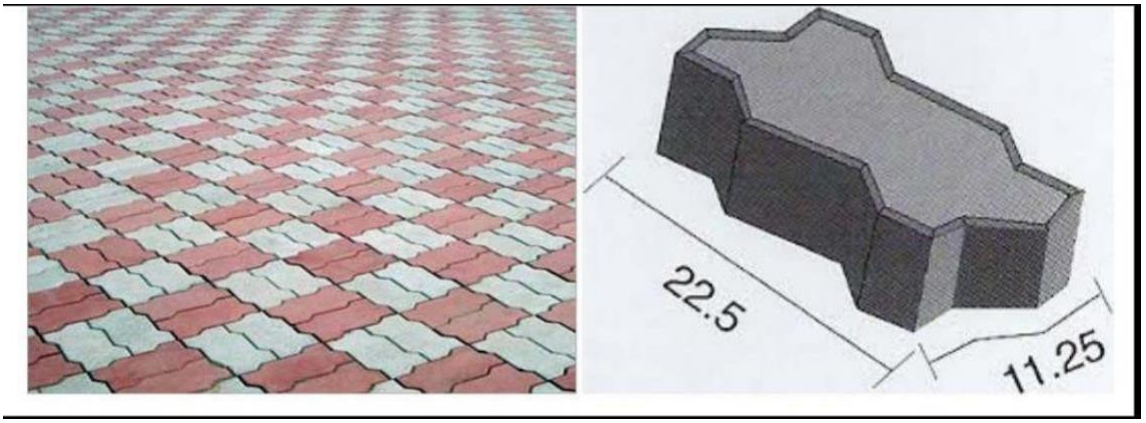
piece For unipaver paver block 450 Rs. Per square meter For Milano Paverblock 450 Rs. Per square meter 2

We have 300 sq.m. Area 300 m = 3230 Sq. ft. in grave yard of Nyara village100 Sq. ft. = 262 piece

So, 3230*262 = 8463 piece required.

Cost of Paver block per square meter is Rs. 450/-300*450 = 1,35,000/- Rs 2

So, for 300 m area We required 8463 paver blocks and its cost is around 1,35,000 Rs.



Workout for materials for brickwork (1 : 6)
Volume of total brickwork = 31.312m3
Cement = 1.5656m3
= 1.5656/0.035 = 44.73 ~ 45 bags

Sand (F.A.) = 9.39m

Bricks = 13226.24 ~ 13227nos

Table 24 QUANTITY and rateanalysis

Sr. no.	Particulars	Qty	Rate	Per	Amount
1	Cement	98	225	Bag	22,050
2	Sand (Fine aggregate)	15.353	616	m3	9,457.45
3	Coarse aggregate	7.246	750	3 M	5,437.5
4	Bricks	13230	4	Piece	52,920
5	Steel	413	37	Kg	15,281
				Total cost	105146 /-

TOTAL ESTIMATED COST (in rupees) = 1,10,944+1,05,146 = 2,16,090/-

Chapter 14.Technical option with case studies

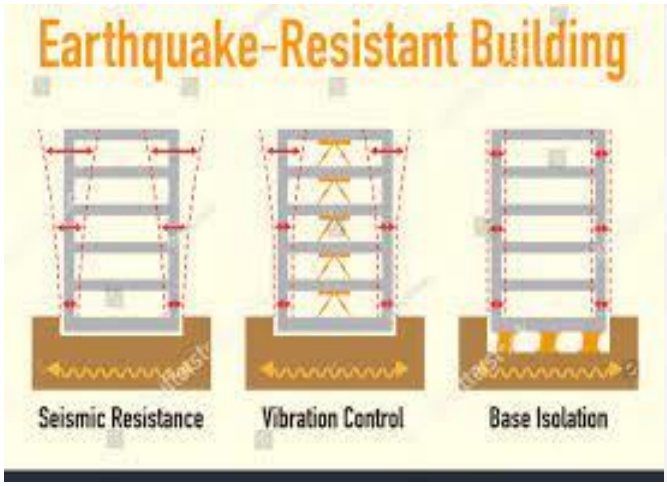
Advanced Earthquake Resistant

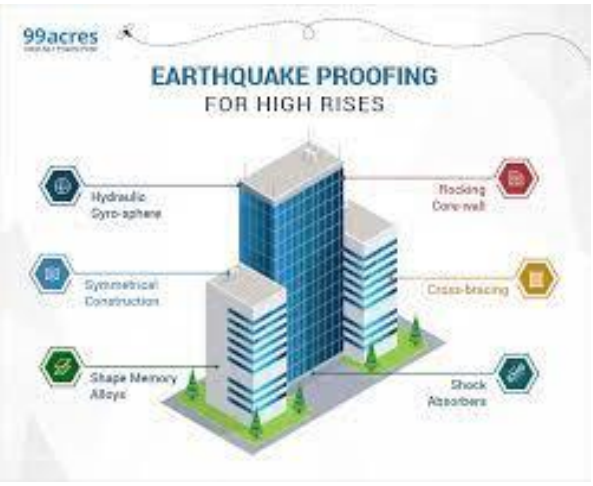
Earthquake-resistant structure, **Building designed to prevent total collapse**, preserve life, and minimize damage in case of an earthquake or tremor. ... If a skyscraper has too flexible a structure, then tremendous swaying in its upper floors can develop during an earthquake.

Care must be taken to provide built-in tolerance for some structural damage, resist lateral loading through stiffeners (diagonal sway bracing), and allow areas of the building to move somewhat independently.

Guidelines for Earthquake Resistant Construction:-

- In addition to the main earthquake design code 1893 the BIS(Bureau of Indian Standards)has published other relevant earthquake design codes for earthquake resistant construction Masonry structures (IS-13828 1993).
- Horizontal bands should be provided at plinth ,lintel and roof levels as per code
- Providing vertical reinforcement at important locations such as corners, internal andexternal wall junctions as per code.
- Grade of mortar should be as per codes specified for different earthquake zones.
- Irregular shapes should be avoided both in plan and vertical configuration.
- Quality assurance and proper workmanship must be ensured at all cost without anycompromise.
  In RCC framed structures (IS-13920)
- In RCC framed structures the spacing of lateral ties should be kept closer as per the code
- The hook in the ties should be at 135 degree instead of 90 degree for better anchoragement.
- The arrangement of lateral ties in the columns should be as per code and must be continuedthrough the joint as well.
- Whenever laps are to be provided, the lateral ties (stirrups for beams) should be at closerspacing as per code.





To prevent the disaster in future earthquake, the retrofitting play an important role in the structural fundamentals. When we concentrated on the world retrofitting first question plugged in our mind. What is the retrofitting? In general way if we can explain the retrofitting can be define as a techniques which is use to maintain a structure to resist any lateral force such as seismic forces. Due to seismic activity the seismic force worked in to wave form. The seismic waves effect on the building structure in the form of lateral loading. To prevent the structure from these lateral loading there are following methods, which is use for retrofitting. For different types of building structure such as masonry structure, RC frame structure, we use different type of techniques which is point out as below. Concrete jacketing is considered as an important method for strengthening and repairing RC beam. Jacketing of RC beam is done by enlarging the existing cross-section with a new layer of concrete that is reinforced with both longitude and transverse reinforcement. Use of steel plates retrofitting has been used as a method of enhance the shear strength and ductility of square reinforcement (RC) column. Wrapping with fibre reinforced polymer sheets to improve the seismic capability of structure. Retrofitting is the process of additional of new features. The older buildings, heritage structure, bridge etc. Retrofitting reduces the vulnerability of damage of an existing structure during a near future seismic activity.

Requirement of Retrofitting

Seismic retrofitting are required to improve basic error in the structure, which is arrive at any time of construction in beginning of the construction phase till end of the construction such as:-
Design errors before or after construction, Insufficient concrete production in the construction, Bad execution processes, Due to earthquake effects, Due to accidental causes such as fire, explosion and collision, Due to lack of detailing.

Basic Retrofitting Techniques

There are following techniques are present in the local and global market which is use forretrofitting of structure these strategies is

1) Global Techniques and Strategies Surface treatment (shotcrete), stitching and grout/ epoxyinjection, re-pointing, bamboo reinforcement, post tensioning (rubber tyres), PP strip reinforcement, steel mesh cage, plastic carries bag net are the basic global techniques.
2) Local Techniques Steel jacketing, concrete jacketing, use of steel plate, wrapping with fiberreinforcement polymer sheets.

Equipment and Software for Analysis the Retrofitted Structure

In the present time there are various software are present in the market for seismic analysis ofstructure and a basic equipment which is use for seismic analysis are point out as below.

1) Equipment for Seismic Analysis Shaking table test (1D and 3D present in local market)
2) Software for Seismic Analysis
ETAAB, SAP2000, ANSYS for better result. Staad pro also good software for seismic analysis butretrofitted structure cannot be analysis by this software.

14.1.1 Advance Practices in Construction field in Modern Material, Techniques and Equipment's (Detail)

To understand all how and about of super performing construction materials we must study materials according to their use from very root to tip. By that way we can easily conclude and infer about the application, implementation and feasibility of that particular construction material. Elements of construction where these smart materials and techniques shall be implemented are: Foundation, Plinth, Beam, Column, Wall, Sill, Window, Door, Roof, Parapet, Skylights, Finishing Works.

Construction materials are said to be super performing when they:-

Save overall building energy, Make building esthetically pleasing, Cut cost of construction, Easily available, Increase life span of building, Upgrade building quality, Make the building safe for living.

Other Super Performing Multi Purposed Material

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

Some Repurposed Materials and techniques:-

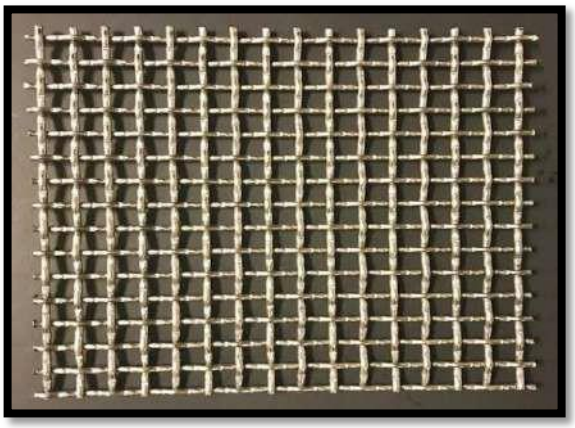
- **Rubber Sidewalks:** Sidewalks or walkways made using used tires and hard boardingsheets.
- **Strawboard:** Made from agro waste mainly.
- **Bagasse Boards:** Boards made of material left from sugarcane after extracting juice.
- **Natural Fiber Insulation:** Insulation panels made out of used cloths.

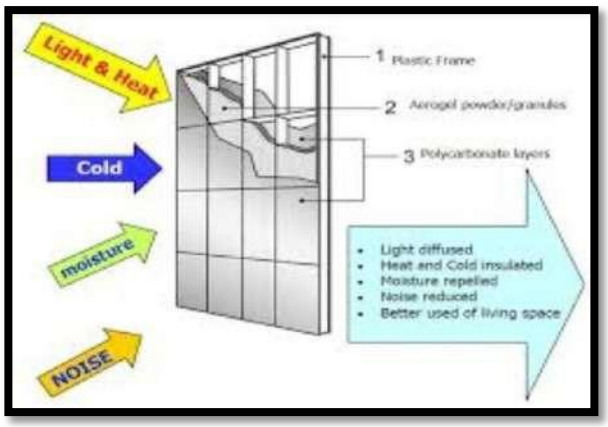
- **Frit:** Fine powdered glass from waste with ceramics remolded for reuse**.**
- **Acousti-cell:** Boards made for acoustics from rubber shredding.
- **Plasphalt:** Plastic blended with asphalt on roads for waste management.
- **Fly-Ash Concrete:** Using Fly-ash residue as strengthening material with cement

Super Performing Safe material

Material		**Uses**	**Advantages**
1	High Performance Conc.	Beam	On long span structures like bridges and halls
2	Light Transmitting Conc.	Interior walls	Energy Saving
3	Pervious Conc.	Paving, Parking, Walkways	Will be permeable for water supporting water table recharge
4	Floating Conc.	Marine architecture	Will save construction cost
5	Weave Metal Mesh	Half walls, Fences, Acoustic walls	Cost and time effective
6	Aerogel	Skylight, Thermal panels	Heat resistive, transparent
7	Super Black	Paints, Varnishes and Finishes	Less Reflective, absorptive
8	Banner work	Shading device, Landscape element	Time, Cost, Energy efficient
9	Geoweb	Vertical Gardening, Green walls	Energy conserving, Water conserving
10	Framing Track	Flexible boundaries and Fences	Quick and versatile
11	3D Molded Plywood	Furniture, Formworks	Time Saving, Repetitive design

12	Braille Tiles	On Floor or Walls	Signage for Blinds
13	Rubber Side Walks	Foot path, Walkways	Waste managing, Time saving, Eco-Friendly
14	Natural Fiber Insulation	Thermal Panels, Blocks	Re-Used Technique i ,Re purposed
15	Fly Ash Concrete	Beams, Columns, Slab	Repurposed , Provides strength to base material





›llapse preventing Structure, Bombproof fibre material, High pressure metal laminates, Stratifiedwood panels, Metafloor.

Use of Modern Equipment to Save Time:

One of the benefits of using modern construction equipment is that one can save time; thus it reduces the risk of project delay, decreases the unpredictability nature of project budget rise/jump and few other benefits. Modern equipment have proved to reduce time, number of required labors over time in the fields of excavation, lifting heavy weights, transferring materials from one place to another, batching, mixing of materials, soil compaction etc.

Light transmitting concrete:-

Light transmitting concrete, known as LiTraCon concrete, is literally the brightest concrete development in recent years. Strands of optical fibers are cast by the thousands into concrete to transmit light, either natural or artificial, into all spaces surrounding the resulting translucent panels.

The main theme of this project is use optical fibers in concrete, which is energy saving and green technology. It lends great energy saving in closed and non-ventilated spaces. Due to small size of the fibers, they blend into concrete becoming a component of the material like small piecesof aggregate. By using plastic optical fibers in concrete specimens, light transmission occurs through optical fibers, which make it possible to see light, shades and even colors through very thick walls. The test results showed that light transmitting concrete did not have much reduction in strength parameter when compared to conventional concrete. The present investigation aims at producing the concrete specimen by using plastic optical fiber and comparing it with conventional concrete. Different tests are carried out the concrete specimen like compressive strength test and light transmitting test. The cost of the light transmitting concrete is compared to the conventional concrete.

Cost analysis:-

The cost of material for light transmitting concrete and conventional concrete are compared.

Conventional concrete:-

Material	**Weight (Kg)**	**Rate (Rs/Kg)**	**Unit**	**Amount (Rs)**
Cement	11.88	350rs/bag	kg	83.16
Fine Aggregate	32.58	5000rs/ton	Cu.m	162.9
Coarse Aggregate	19.35	350rs/ton	Cu.m	6.75
Water	5.985	10rs/lit	lit	59.85
			Total	313

Light transmitting concrete:-

Material	**Weight (Kg)**	**Rate (Rs/Kg)**	**Unit**	**Amount (Rs)**
Cement	11.88	350rs/bag	kg	83.16
Fine Aggregate	32.58	5000rs/ton	Cu.m	162.9
Coarse Aggregate	19.35	350rs/ton	Cu.m	6.75
Water	5.985	10rs/lit	lit	59.85
optical fibre	0.325	(850rs/kg)	kg	276.25
			Total	520

The cost of light transmitting concrete is slightly more than the

conventional concrete. But at day time the light transmitting concrete reduces lighting cost, also it reduce the electricity usage of daytime. It provides both good aesthetic and structural stability. In large and tall buildings can share the lighting when the ceiling are transparent or translucent. It reduces the day time usage of lights. So it becomes advantages.

Engineering Aspects of Soil mechanics - Environmental Impact Assessment

An Environmental Impact Assessment (EIA) study plays a vital role, and is a major prerequisite, in strengthening undertakings to prevent negative impacts, irreversible destruction and abuse of the environment of construction projects and activities. In most countries, it is a compulsory requirement for the approval of any infrastructure project with perceived substantial impacts on the environment. If properly conducted, it ensures an improved and effective project implementation. Hence, the expertise and financial capability of companies and the government can be put to use in the formulation of a meaningful EIA.

Geotechnical projects are often undertaken with constrained budgets so not only is the environmental impact high but the added value low compared with, for example, a worker in a service industry. However, service industries cannot exist without the work of the geotechnical engineer and analysis of the whole supply chain is key. Those higher up the chain 'buy in' their environmental impact from those lower down the chain. To reduce the overall environmental impact, the higher members of the chain must be persuaded to spend some of the added value that they create to reduce the impact generated by those lower down the chain.

A good example of this is in the management of the use of hardwoods. Many companies will not now use or sell hardwoods that do not come from sustainable forestry even if this leads to higher costs. Reducing wood use is not effective; ensuring that the wood that is used is sustainably produced is the key issue. It follows that reducing geotechnical activity will not improve sustainability. Better geotechnical practice will help but ultimately the greatest reduction in impact will be achieved when those higher up the chain recognise that they buy in their environmental impact and that they can achieve the greatest reductions

in the total impact by recycling some of their added value to activities lower down the supply chain. This points towards the radicalconclusion that the geotechnical engineer should refuse to work on projects where the funding is insufficient to provide a sustainable (and harmonious) solution.

Water Supply-Sewerage System-Waste Water-Sustainable developmenttechniques

The uncontrolled disposal to the environment of municipal, industrial and agricultural liquid, solid, and gaseous wastes constitutes one of the most serious threats to the sustainability of human civilization by contaminating the water, land, and air and by contributing to global warming. With increasing population and economic growth, treatment and safe disposal of wastewater is essential to preserve public health and reduce intolerable levels of environmental degradation. In addition, adequate wastewater management is also required for preventing contamination of water bodies for the purpose of preserving the sources of clean water. Effective wastewater management is well established in developed countries but is still limited in developing countries. In most developing countries, many people lack access to water and sanitation

services. Collection and conveyance of wastewater out of urban neighborhoods is not yet a service provided to all the population, and adequate treatment is provided only to a small portion of the collected wastewater. In slums and peri-urban areas throughout the world, it is common to see raw wastewater flowing in the streets.

The inadequate water and sanitation service is the main cause of diseases in developing countries.In the year 2011, the population of the planet was 7 billion. Population growth forecasts indicate rapid global population growth that will reach 9 billion in 2030.

The forecasts also indicate that: Most of the population growth will occur in developing countries, while the population of developed countries will remain constant at about 1 billion; and a strong migration from rural to urban areas will take place. Considering the expected population growthand the order of priorities in the development of the water and sanitation sector in developing countries—water supply and sewerage first, and only then wastewater treatment—as well as the financial difficulties in these countries, it cannot be assumed that the current low percentage of the coverage of wastewater treatment in these countries will increase in the future, unless a new, innovative strategy is adopted and affordable wastewater treatment options are used.

A key component in any strategy aimed at increasing the coverage of wastewater treatment should be the application of appropriate wastewater treatment technologies that are effective, simple to operate, and low cost (in investment and especially in operation and maintenance). Appropriate technology processes are also more environment-friendly since they consume less energy and thereby have a positive impact on efforts to mitigate the effects of climate change. Also, with 6 Consilience modern design, appropriate technology processes cause less environmental nuisance than conventional processes—for example they produce lower amounts of excess sludge and their odor problems can be more effectively controlled.

Appropriate technology unit processes include the following: Preliminary Treatment by Rotating Micro Screens, Vortex Grit Chambers,

Lagoons Treatment (Anaerobic, Facultative and Polishing), including recent developments in improving lagoons performance, Anaerobic Treatment processes of various types, mainly, Anaerobic Lagoons, Upflow Anaerobic Sludge Blanket (UASB) Reactors, Anaerobic Filters and Anerobic Piston Reactor (PAR), Physicochemical processes of various types such as Chemically Enhanced Primary Treatment (CEPT), Constructed Wetlands, Stabilization Reservoirs for wastewater reuse and other purposes, Overland Flow, Infiltration-Percolation, SepticTank and Submarine and Large Rivers Outfalls.

Out of these processes, various combinations can be set up. Combinations can also include some other simple processes such as Sand Filtration and Dissolved Air Floatation (DAF), which are not considered appropriate processes per se but are in fact appropriate processes. One interesting combined process is the generation of effluents suited for reuse in irrigation based on pretreatment by one of the mentioned unit processes followed by a stabilization reservoir.

Collection and conveyance of wastewater out of urban neighborhoods is not yet a service provided to all the population, and adequate treatment is provided only to a small portion of the collected wastewater. In slums and peri-urban areas throughout the world, it is common to see raw wastewater flowing in the streets. In addition, adequate wastewater management is also required for preventing contamination of water bodies for the purpose of preserving the sources of clean water.

CHAPTER 15.Smart and/or Sustainable features of Chapter 8 & 13 designs, Impact on society.

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

with doing small changes, Period, Amount Expenditure and Benefit –

a) Immediately b) Within 1 year c) Long term (3-5 years) along with cost estimation.

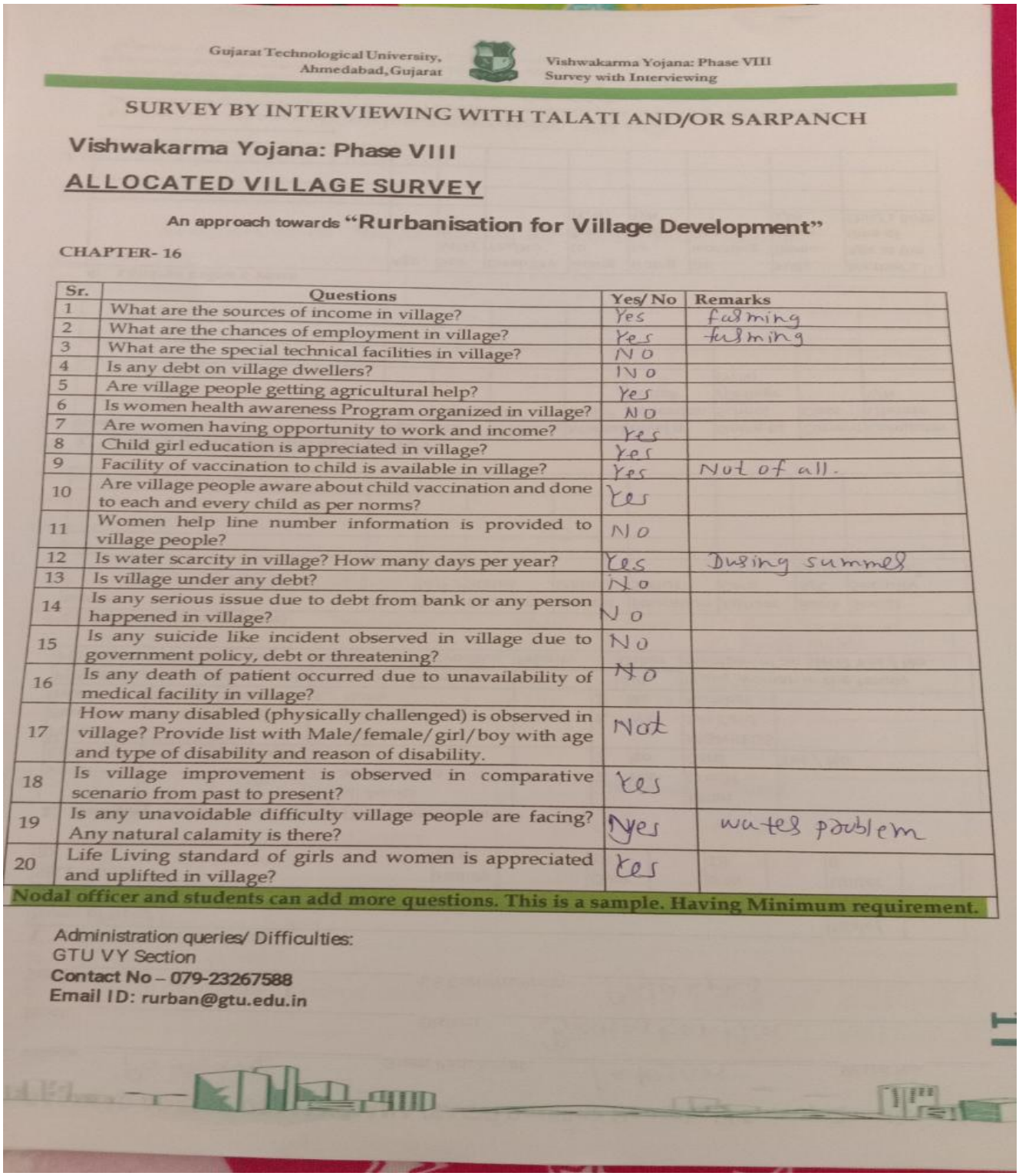
b) If possible, List the sources of the funding available with the Village gram panchayat

Table 71 Civil Designs Expenditure and benefits

SR NO.	DESIGN	PERIOD	AMOUNT EXPENDITURE(In Rs.)	BENEFITS
1.	RAIN WATER HARVEST	Within 1year	177900.489/-	Rain water harvesting will resolve water issue in village & promote both water & energy consumption.
2.	PUBLIC TOILET BLOCK	Long term	692837.7651/-	Ease of use, acceptability & asignificant reduction in bad odour and more hygiene environment.
3.	PRIMARY HEALTH CENTRE	Long term	1961192.493/-	It will improve people's health & wellbeing by supporting them to manage their complex and chromic conditions also it will lead to get emergency treatment.

4.	**COMMUNITYHALL**	**Long term**	**2399679.559/-**	It will provide meeting space & a area to perform recreational activities as well as local gathering.
5.	**SKILL DEVELOPMENT CENTRE**	**Long term**	**1654274.829/-**	To provide adequate training inmarket – relevant skills.
6.	**MUSEUM**	**Long term**	**555623.2305/-**	Museum will provide an effective way of learning.
7.	**PUBLIC LIBRARY**	**Long term**	**2406248.43/-**	By providing library it gives us adisciplined area to study.
8.	**GRUH UDHYOG-SHOPPING MALL**	**Long term**	**2843870.515/-**	Gruh udhyog help to recruits more people & provide employment as well anchorage cottage industries.
9.	**VETERINARY CLINIC**	**Long term**	**1537386.669/-**	Vet clinic help your pet stay healthy longer & to discuss pet care issues such as diet, exercise, medication, etc.
10.	**PUBLIC GARDEN**	**Within 1 year**	**155162.837/-**	It will help to improve our physical and psychological health, strengthen our community
11.	**FIRE STATION**	**Long term**	**3578271.466/-**	Certainty of avoiding the outbreak & spread of fire as well as protecting multiple hazards with just one system.
12.	**COLLEGE**	**Long**	**9403735.337/-**	Increases access to job

Chapter 16 .Survey By Interviewing With Talati And/Or Sarpanch



Gujarat Technological University, Ahmedabad, Gujarat

Vishwakarma Yojana: Phase VIII
Survey with Interviewing

SURVEY BY INTERVIEWING WITH TALATI AND/OR SARPANCH

Vishwakarma Yojana: Phase VIII

ALLOCATED VILLAGE SURVEY

An approach towards "Rurbanisation for Village Development"

CHAPTER- 16

Sr.	Questions	Yes/ No	Remarks
1	What are the sources of income in village?	Yes	farming
2	What are the chances of employment in village?	Yes	farming
3	What are the special technical facilities in village?	NO	
4	Is any debt on village dwellers?	NO	
5	Are village people getting agricultural help?	Yes	
6	Is women health awareness Program organized in village?	NO	
7	Are women having opportunity to work and income?	Yes	
8	Child girl education is appreciated in village?	Yes	
9	Facility of vaccination to child is available in village?	Yes	Not of all.
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?	Yes	During summer
13	Is village under any debt?	NO	
14	Is any serious issue due to debt from bank or any person happened in village?	NO	
15	Is any suicide like incident observed in village due to government policy, debt or threatening?	NO	
16	Is any death of patient occurred due to unavailability of medical facility in village?	NO	
17	How many disabled (physically challenged) is observed in village? Provide list with Male/female/girl/boy with age and type of disability and reason of disability.	Not	
18	Is village improvement is observed in comparative scenario from past to present?	Yes	
19	Is any unavoidable difficulty village people are facing? Any natural calamity is there?	Yes	water problem
20	Life Living standard of girls and women is appreciated and uplifted in village?	Yes	

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

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

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

IRRIGATION ACTIVITY:-

Irrigation is the artificial application of water to the soil through various systems of tubes, pumps,and sprays. Irrigation is usually used in areas where rainfall is irregular or dry times or drought is expected. There are many types of irrigation systems, in which water is supplied to the entire field uniformly. Irrigation water can come from groundwater, through springs or wells, surface water, through rivers, lakes, or reservoirs, or even other sources, such as treated wastewater or desalinated water. As a result, it is critical that farmers protect their agricultural water source to minimize the potential for contamination. As with any groundwater removal, users of irrigation water need to be careful in not pumping groundwater out of an aquifer faster than it is being recharged.

Types of Irrigation Systems:-

There are many different types of irrigation systems, depending on how the water is distributed throughout the field. Some common types of irrigation systems include:

1. Surface irrigation

Water is distributed over and across land by gravity, no mechanical pump involved.

2. Localized irrigation

Water is distributed under low pressure, through a piped network and applied to each plant.

4. Drip irrigation

A type of localized irrigation in which drops of water are delivered at or near the root of plants. In this type of irrigation, evaporation and runoff are minimized.

4. Sprinkler irrigation

Water is distributed by overhead high-pressure sprinklers or guns from a central location in the field or from sprinklers on moving platforms.

5. Center pivot irrigation

Water is distributed by a system of sprinklers that move on wheeled towers in a circular pattern. This system is common in flat areas of the United States.

6. Lateral move irrigation

Water is distributed through a series of pipes, each with a wheel and a set of sprinklers, which are rotated either by hand or with a purpose-built mechanism. The sprinklers move a certain distance across the field and then need to have the water hose reconnected for the next distance. This system tends to be less expensive but requires more labor than others.

7. Sub-irrigation

Water is distributed across land by raising the water table, through a system of pumping stations, canals, gates, and ditches. This type of irrigation is most effective in areas with high water tables.

8. Manual irrigation

Water is distributed across land through manual labor and watering cans. This system is very labor intensive.

Types of Agriculture:-

Although agriculture is not uniform across the world, it is the most widespread activity. It is classified based on the type of crop being grown, scale of cultivation, intensity, mechanization level, combinations of livestock and how farm produce is distributed. The following are the different types of agricultural activities worldwide:

1. Shifting Cultivation

Shifting cultivation is commonly practiced in the tropics. It involves forest clearance through burning and slashing. The cleared land is cultivated until its fertility declines, or for three to five years or until native flora and weeds overtake it. When that happens, farmers abandon the land for a fallow period and clear another forest area for cultivation It is a type of subsistence farming usually done manually. People in the tropical regions such as south-east Asia tend to adopt this type of agricultural activity with a focus on growing grains.

However, due to the pressure environmentalists and activists exert to support environment protection from such unsustainable practices, the activity is declining.

2. Commercial Plantations

Also known as tree crop farming, industrialized agriculture or plantation farming, commercial plantations cover large land areas. Even if practiced on a smaller piece of land, the activity has a high commercial value. It involves the cultivation of tropical crops such as tea, rubber, coffee, coconut, cocoa, grapes, apples, spices, oranges, avocado, mangoes and palm oil.

It is commonly practiced in regions with European colonial influence such as Africa, Asia and Latin America. Colonial governments established most of the plantations in their colonies to supply the European markets with tropical

crops. It requires high capital to establish with the majority of the crops grown being tree crops.

Some plantation farms have processing factories. Various farming techniques are adopted to increase farm yield because the goal of such farms is to make profits.

6. Mixed Farming

Also known as grain and livestock farming, mixed farming involves the growing of crops and rearing of animals. It has its origins in the humid, mid-latitudes, excluding Asia. It is an agricultural activity with its roots mainly in Europe. Mixed farming develops in close relation to market infrastructure. It is commonly practiced in New Zealand and Great Britain. Mixed farming involves continuous cropping and the growth of crops with varying maturity periods on the same piece of land. It does well in areas with sufficient rainfall or proper facilities for irrigation.

7. Specialized Horticulture

Increased demand for horticultural products in highly urbanized areas with dense populations led to the development of specialized horticulture. It has been successfully adopted in northern Hungary, France and the Swiss Lake regions for vineyard cultivation.

8. Subsistence Farming

Subsistence farming involves growing crops and keeping animals for the sole purpose of feeding the farmer and his family. It involves the use of simple farm tools on small pieces of land. Most subsistence farmers are believed to be poor and thus cannot afford to buy improved seeds and fertilizers. Therefore, they farm on land with low soil fertility or rough terrains. Subsistence farming has low productivity and does not involve the use of irrigation systems orelectricity, facilities often unavailable to such farmers. Since the food grown is often consumed by the farmer and his household, almost none is sold for an extra coin.

9. Intensive Subsistence Farming with/without Rice as a Dominant Crops

Tropical regions with dense populations and high rainfall are the areas where intensive subsistence farming is practiced. Rice is the major crop grown because it can fee and employ many people in every unit area. It is mainly

adopted in south-east Asia and farmers make use of animal and manual power to carry out farming activities. Most farmers use manures to improve the productivity of their farms per unit area.

Just like subsistence farming with rice as the main crop, this activity is practiced in areas with low rainfall. Apart from rice, farmers grow other grain crops such as millet and wheat. The agricultural activity is practiced in Central America and southern Africa and areas in northern Africa, Asia and the Middle East without much rainfall throughout the year.

10. Mediterranean Agriculture

Mediterranean agriculture involves the rearing of animals and growing of crops in the rugged, Mediterranean terrain. Small animals and crops such as citrus fruits, vineyards and wheat are the crops mainly grown in the region. Horticulture is also practiced with the majority of crops sown in winter due to winter rains.

11. Dairy Farming

Dairy farming involves the rearing of cattle for milk. With its origins in Europe, the activity is highly developed in Sweden and Denmark. However, it has spread to other parts of the world and is practiced in areas near markets. It thrives in regions that enjoy temperate climate

Chapter 18.Social Activities – Any Activates Planned By Students

e.g., Teaching Learning activities, awareness camp, business idea for SELF HELP GROUP OR ANY OTHER

As the Coronavirus tsunami sweeps cities and towns across India, the vulnerable children who already grappled with issues like lack of education and healthcare, compromised safety and abuse, are at a high risk of suffering even more. The pandemic threatens to reverse the gains made for children and jeopardizes their future gravely. To win this war against COVID-19, we have to ensure that everyone who is eligible gets vaccinated. Many people are still not taking the vaccine as there has been a lot of misinformation surrounding the vaccines and their development.

In this ongoing Covid-19 Pandemic, there is a great need to create awareness about vaccination. Through this effort, we will be able to motivate the community to get vaccinated.

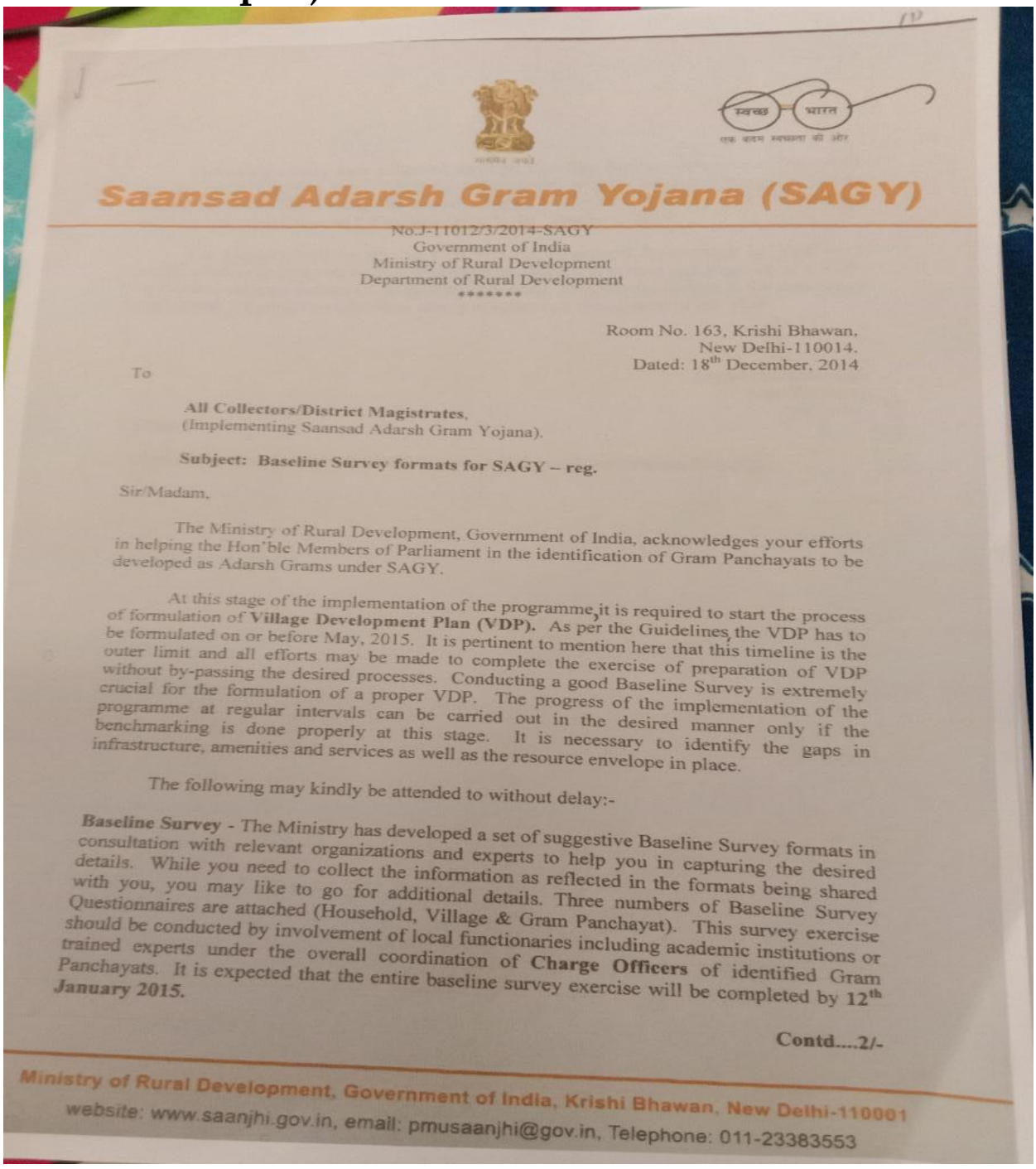
To raise awareness among the people and debunk the myths related to vaccinations, we have initiated the COVID 19 Vaccination Awareness Campaign in Patosan

Following activities were conducted recently in Village:-

- Creating awareness about what is Covid-19 virus, how it
- spreads and explaining how to keep Social distancing to stop
- spread of virus.
- Demonstrating how wearing of masks can reduce the risk of
- infecting others and protecting ourselves.
- Correct method of using and discarding the masks.
- Demonstration of correct method of washing hand with soap
- and Effective use of sanitizers.
- We have initiated the COVID 19 Vaccination
- Awareness Campaign in Patosan
- We have also made a awareness poster for sticking at
- different places in village.
- Our team has met many villagers and visited many

- houses to create awareness about vaccination
- We have visited in personal at villager's house and aware to the whole family.
- Also we have said that if you vaccinated you not only get shield but also you secures your
- love ones to get infected by covid.
- As per the conversation we are able to convenience many peoples to take vaccine.
- We have tried our best to not to listen rumors believe in our health workers and government.
- At end we also said them to respect our frontline workers and coordinate in this vaccination drive.

Chapter 19.<<ALLOCATED VILLAGE>> SAGY Questionnaire Survey form with the Sarpanch Signature (Scanned copy attachment in the soft copy report and Original copy in hardbound report)



Saansad Adarsh Gram Yojana (SAGY)

No.J-11012/3/2014-SAGY
Government of India
Ministry of Rural Development
Department of Rural Development
****

Room No. 163, Krishi Bhawan,
New Delhi-110014.
Dated: 18th December, 2014

To

All Collectors/District Magistrates,
(Implementing Saansad Adarsh Gram Yojana).

Subject: Baseline Survey formats for SAGY – reg.

Sir/Madam,

The Ministry of Rural Development, Government of India, acknowledges your efforts in helping the Hon'ble Members of Parliament in the identification of Gram Panchayats to be developed as Adarsh Grams under SAGY.

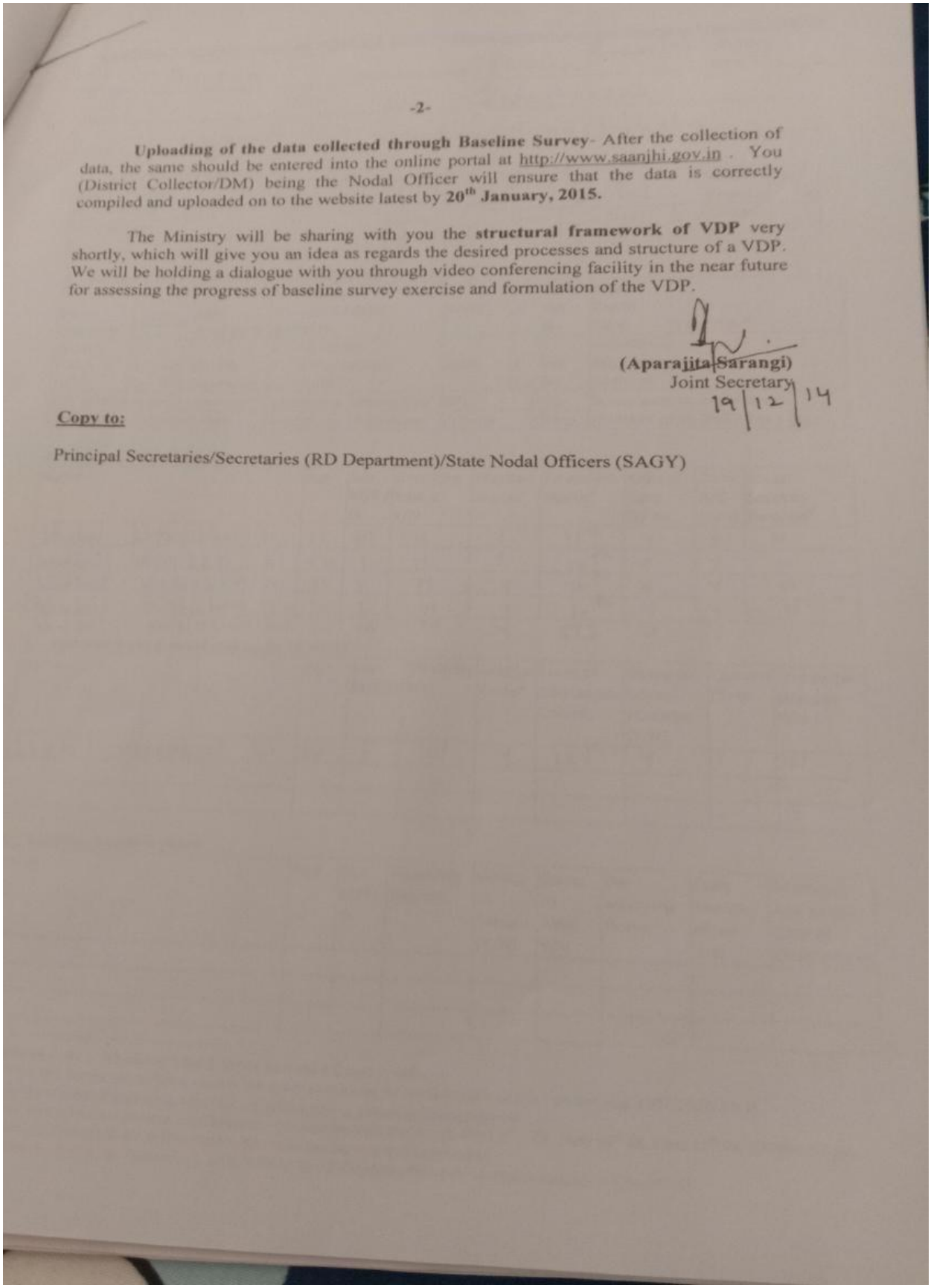
At this stage of the implementation of the programme, it is required to start the process of formulation of **Village Development Plan (VDP).** As per the Guidelines, the VDP has to be formulated on or before May, 2015. It is pertinent to mention here that this timeline is the outer limit and all efforts may be made to complete the exercise of preparation of VDP without by-passing the desired processes. Conducting a good Baseline Survey is extremely crucial for the formulation of a proper VDP. The progress of the implementation of the programme at regular intervals can be carried out in the desired manner only if the benchmarking is done properly at this stage. It is necessary to identify the gaps in infrastructure, amenities and services as well as the resource envelope in place.

The following may kindly be attended to without delay:-

Baseline Survey - The Ministry has developed a set of suggestive Baseline Survey formats in consultation with relevant organizations and experts to help you in capturing the desired details. While you need to collect the information as reflected in the formats being shared with you, you may like to go for additional details. Three numbers of Baseline Survey Questionnaires are attached (Household, Village & Gram Panchayat). This survey exercise should be conducted by involvement of local functionaries including academic institutions or trained experts under the overall coordination of **Charge Officers** of identified Gram Panchayats. It is expected that the entire baseline survey exercise will be completed by 12th ***January 2015.***

Contd....2/-

Ministry of Rural Development, Government of India, Krishi Bhawan, New Delhi-110001
website: www.saanjhi.gov.in, email: pmusaanjhi@gov.in, Telephone: 011-23383553



-2-

Uploading of the data collected through Baseline Survey- After the collection of data, the same should be entered into the online portal at http://www.saanjhi.gov.in . You (District Collector/DM) being the Nodal Officer will ensure that the data is correctly compiled and uploaded on to the website latest by **20th January, 2015.**

The Ministry will be sharing with you the **structural framework of VDP** very shortly, which will give you an idea as regards the desired processes and structure of a VDP. We will be holding a dialogue with you through video conferencing facility in the near future for assessing the progress of baseline survey exercise and formulation of the VDP.

(Aparajita Sarangi)
Joint Secretary
19/12/14

Copy to:

Principal Secretaries/Secretaries (RD Department)/State Nodal Officers (SAGY)

SAANSAD ADARSH GRAM YOJANA (SAGY) Baseline Household Survey Questionnaire

Village: Patosan Gram Panchayat: Patosan Gram Panchayat Ward No.

Block: District: Banaskantha

State: Gujarat L S Constituency: Banaskantha.

1. Family Identity and Size

Name of Head of Household	Bhemji bhai	kalu bhai	bhatol	Male/ Female	2/4
SECC Survey ID:	Family Size 6	Over 18 5	6 to 18 1	Under 6	0

2. Category & Entitlement Details (Tick as appropriate)

Social Category[1]	OBC	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]
bhatol bhemjibhai k.	55	M	N	Y	12th	Y	Y	N
bhatol vimben b.	50	F	N	Y	10th	Y	Y	N
bhatol vassaben b.	35	F	N	Y	10th	Y	Y	N
bhatol pinkiben b.	30	F	N	Y	10th	Y	Y	N
bhatol mitinbhai b.	25	M	N	Y	ITI	Y	Y	

3. Children from 6 years and up to 18 years

Name	Age	Sex M/F/O	Disability Y/N	Marital Code*	Level of Education: Code#	Going to School /College (Y/N)	Current Class	Computer Literate Y/N
bhatol Aastiben b.	18	F	N	Y	12th	Y	Y	N

4. Children below 6 years

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

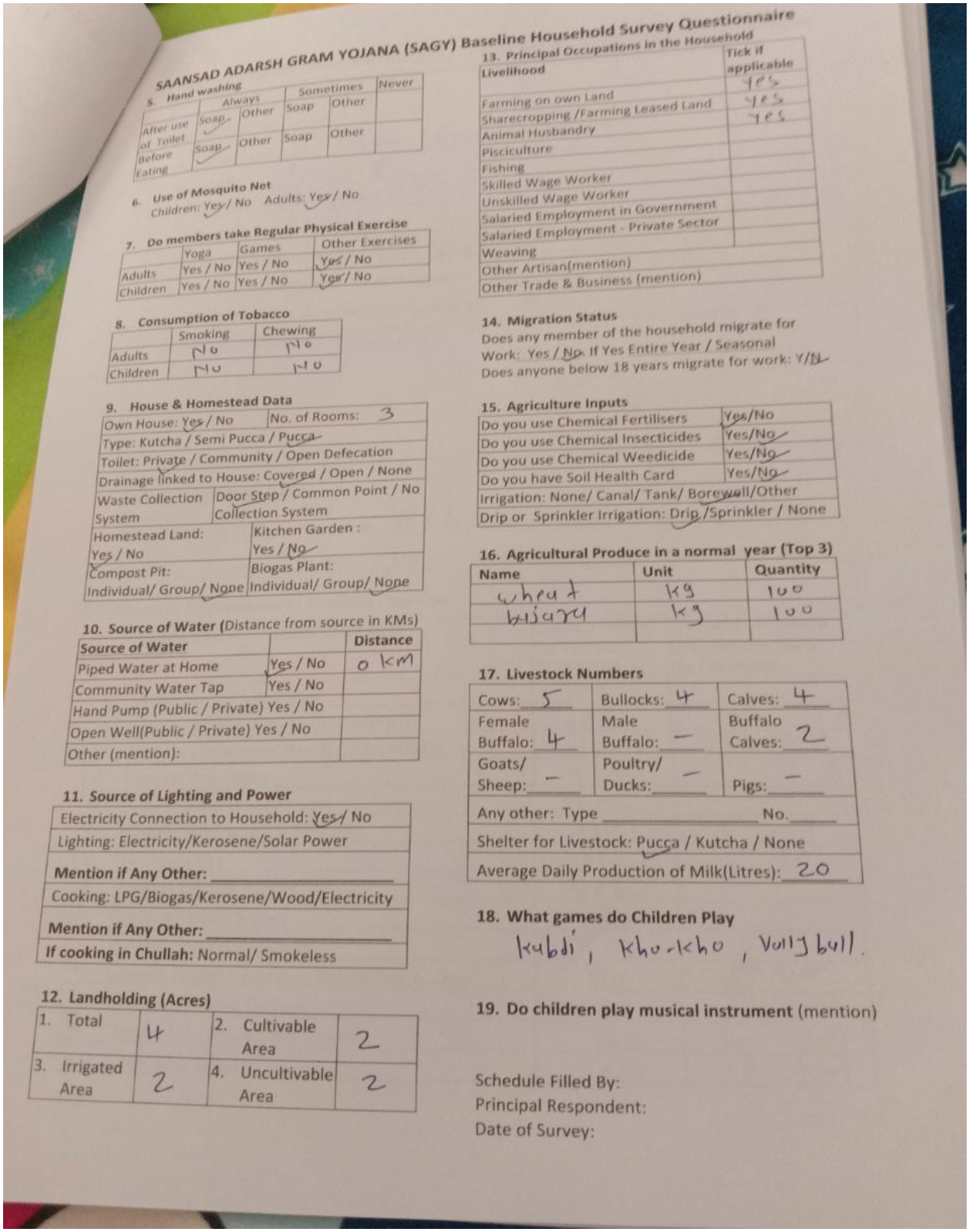
[1] Scheduled Caste 1, Scheduled Tribe 2, Other Backward Castes 3, Other 4

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

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

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

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



SAANSAD ADARSH GRAM YOJANA (SAGY) Baseline Household Survey Questionnaire

5. Hand washing

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

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

7. Do members take Regular Physical Exercise

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

8. Consumption of Tobacco

	Smoking	Chewing
Adults	No	No
Children	No	No

9. House & Homestead Data

Own House: Yes / No	No. of Rooms: 3
Type: Kutcha / Semi Pucca / Pucca	
Toilet: Private / Community / Open Defecation	
Drainage linked to House: Covered / Open / None	
Waste Collection System	Door Step / Common Point / No Collection System
Homestead Land: Yes / No	Kitchen Garden : Yes / No
Compost Pit: Individual/ Group/ None	Biogas Plant: Individual/ Group/ None

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

Source of Water		Distance
Piped Water at Home	Yes / No	0 KM
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	4	2. Cultivable Area	2
3. Irrigated Area	2	4. Uncultivable Area	2

13. Principal Occupations in the Household

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

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

15. Agriculture Inputs

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

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

Name	Unit	Quantity
wheat	kg	100
bajara	kg	100

17. Livestock Numbers

Cows: 5	Bullocks: 4	Calves: 4
Female Buffalo: 4	Male Buffalo: –	Buffalo Calves: 2
Goats/ Sheep: –	Poultry/ Ducks: –	Pigs: –
Any other: Type _____		No. _____
Shelter for Livestock: Pucca / Kutcha / None		
Average Daily Production of Milk(Litres): 20		

18. What games do Children Play
kabdi, kho-kho, Volly ball.

19. Do children play musical instrument (mention)

Schedule Filled By:
Principal Respondent:
Date of Survey:

Saansad Adarsh Gram Yojana (SAGY) Panchayat Details Survey Questionnaire
(Note: Please aggregate information from village level questionnaires wherever relevant)

I. Basic Information

a. Gram Panchayat: Patesan Grampunchayat
b. Block: Palanpur
c. District: Bansakantha
d. State: Gujarat
e. Lok Sabha Constituency: Banuskantha
f. Number of Wards in the Gram Panchayat: _____
g. Number of Villages in the Gram Panchayat: 1
h. Names of Villages: Patosan

Demographic Information

Number of Households 540 Total Population 3222 Male 1680 Female 1540

SC HHs 150 ST HHs 100 OBC HHs 240 Other HHs 50

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)	NO	17 km
d.	Nearest Post Office	Yes	
e.	Nearest Bank Branch (Any)	Yes	
f.	Nearest Bank with CBS Facility	NO	5 km
g.	Nearest ATM	NO	5 km
h.	Nearest Primary School	Yes	
i.	Nearest Middle School	Yes	
j.	Nearest Secondary School	Yes	
k.	Nearest Higher Secondary School / +2 College	No	5 km
l.	Nearest Graduate College	NO	5 km
m	Nearest ITI / Polytechnic Centre	NO	10 km
n	Kisan Seva Kendra	NO	17 km

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	Yes	
p	Nearest Agro Service Centre	Yes	
p	MSP based Government Procurement Centre		No
q	Milk Cooperative /Collection Centre		No
r	Veterinary Care Centre		No
s	Ayurveda Centre		No
t	E – Seva Kendra	Yes	
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 1 Public 1 Private –

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

V. Education, ICDS

a. Number of Angan Wadi Centres: 4

b. Number of villages without Angan Wadi Centres_____

Names of such villages: _____

c. Schools (Number)

Primary Private: 1 Primary Govt.: –

Middle Private: – Middle Govt.: _____

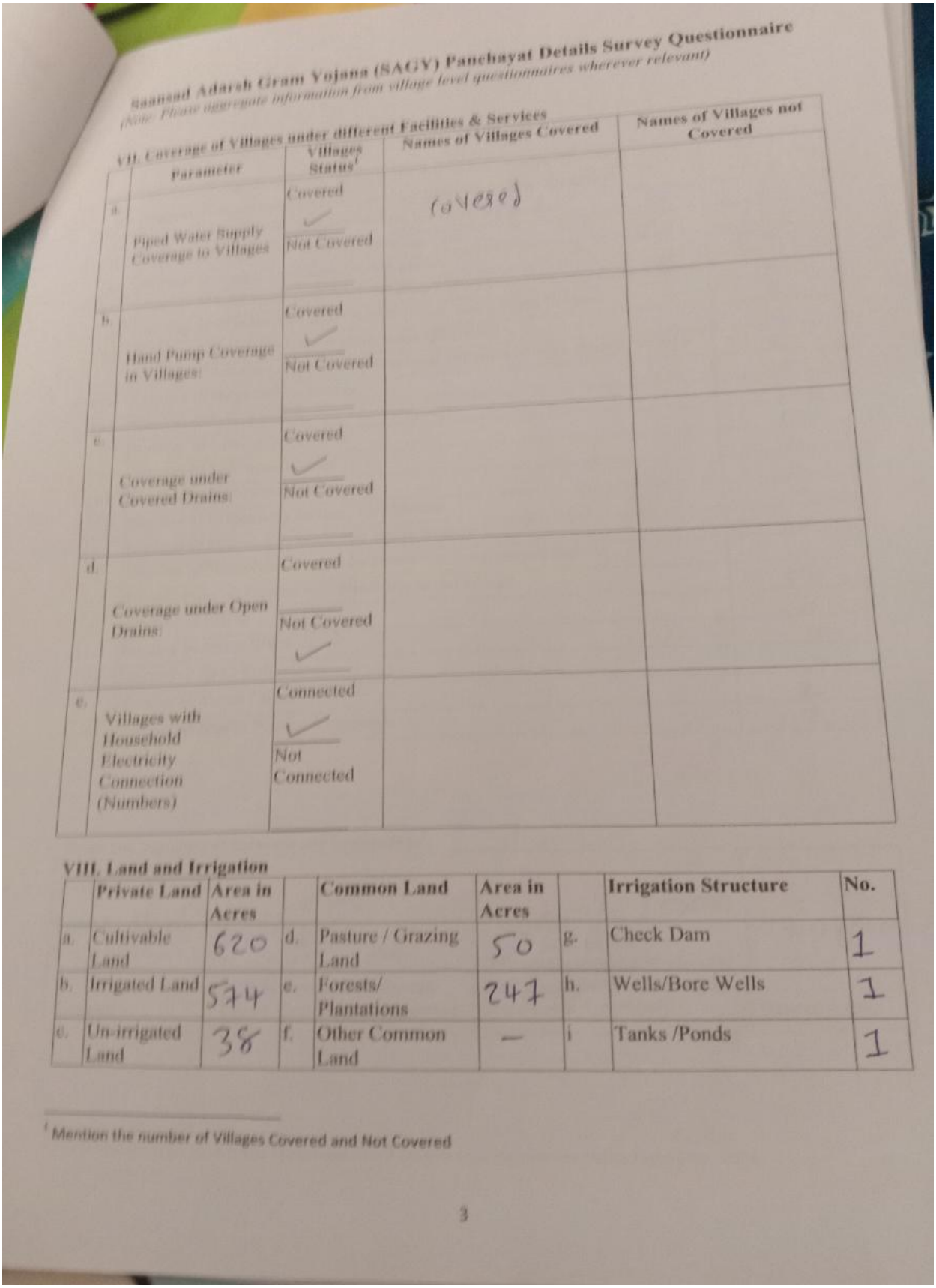
Secondary Private: – Secondary Govt.: 1

Higher Secondary Private: – Higher Secondary Govt: –

VI. Public Distribution System

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

2



Saansad Adarsh Gram Yojana (SAGY) Panchayat Details Survey Questionnaire

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

VII. Coverage of Villages under different Facilities & Services

	Parameter	Villages Status[1]	Names of Villages Covered	Names of Villages not Covered
a.	Piped Water Supply Coverage to Villages	Covered ✓ / Not Covered	(all 8 ?)	
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	620	d.	Pasture / Grazing Land	50	g.	Check Dam	1
b.	Irrigated Land	574	e.	Forests/ Plantations	247	h.	Wells/Bore Wells	1
c.	Un-irrigated Land	38	f.	Other Common Land	—	i	Tanks /Ponds	1

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

3

Saansad Adarsh Gram Yojana (SAGY) Panchayat Details Survey Questionnaire

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

IX. Parameters relating to Households & Institutions

		Number
a)	Number of eligible Households for pension (old age, widow, disability)	40
b)	Number of Households receiving pension (old age, widow, disability)	40
c)	Number of eligible Households who are not receiving pension	0
d)	Number of Households eligible for Ration Card	540
e)	Number of eligible HHs having ration cards	540
f)	Number of households covered under RSBY (Rashtriya Swasthya Bima Yojana)	0
g)	Number of HHs covered under AABY (Aam Aadmi Bima Yojana)	0
h)	Number of active Job Card holders under MGNREGA	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	300
l)	Number of landless households	50
m)	Number of IAY beneficiaries	0
n)	Number of FRA[2] beneficiaries	0
o)	Number of Community Sanitary Complexes	0
p)	Number of Households headed by single women	10
q)	Number of Households headed by physically handicapped persons	10
r)	Total number of Persons with Disability in the village	50
s)	Number of SHGs	0
t)	Number of active SHGs	0
u)	Number of SHG Federations	0
v)	Number of Youth Clubs	2
w)	Number of Bharat Nirman Volunteers	2

Name and Signature of Surveyor and Respondent'

Surveyor	PRI Respondent (Preferably Gram Panchayat Chairperson)	Official Respondent (Preferably seniormost Government official in the Gram Panchayat)	Date of Survey
Rao mitul B. Kunes bhaxit V.			17/08/2020

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: Patosan
b. Ward Number:
c. Gram Panchayat: Patosan
d. Block:
e. District: Banaskhanthe
f. State: Gujarat
g. Lok Sabha Constituency: Banaskhantha
h. Number of Habitations / Hamlets in the Gram Panchayat: 1
i. Names of Habitations / Hamlets: Patosan

Demographic Information

Number of Households 540 Total Population 3222 Male 1680 Female 1540

SC HHs 150 ST HHs 100 OBC HHs 240 Other HHs 50

II. Access to Infrastructure/Amenities etc.

i.	Access to Infrastructure / Facilities / Services	Located in the Village Yes (Y)/No(N)	If located elsewhere (N), distance in kms from the village
a.	Nearest Primary School	Yes	
b.	Nearest Middle School	Yes	
c.	Nearest Secondary School	Yes	
d.	Kisan Seva Kendra	No	17 km away
e.	Milk Cooperative /Collection Centre	Yes	
g.	Health Sub Centre	No	5 1km
h.	Bank	Yes	
i.	ATM	No	5 1km
j.	Bus Stop	Yes	
k.	Railway Station	No	17 1km

[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	17 km
m	Common Service Centre	No	17 km
n	Veterinary Care Centre	Yes	

ii. Road Connectivity
a. Habitations connected by All-weather Roads (1-All 2-None 3-Some)
If 3 mention the name of the habitations where not available:

iii. Drinking Water Facilities
a.Piped Water Supply Coverage to Habitations: (1-All 2-None 3-Some)
If 3 mention the name of the habitations not covered:

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

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

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

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

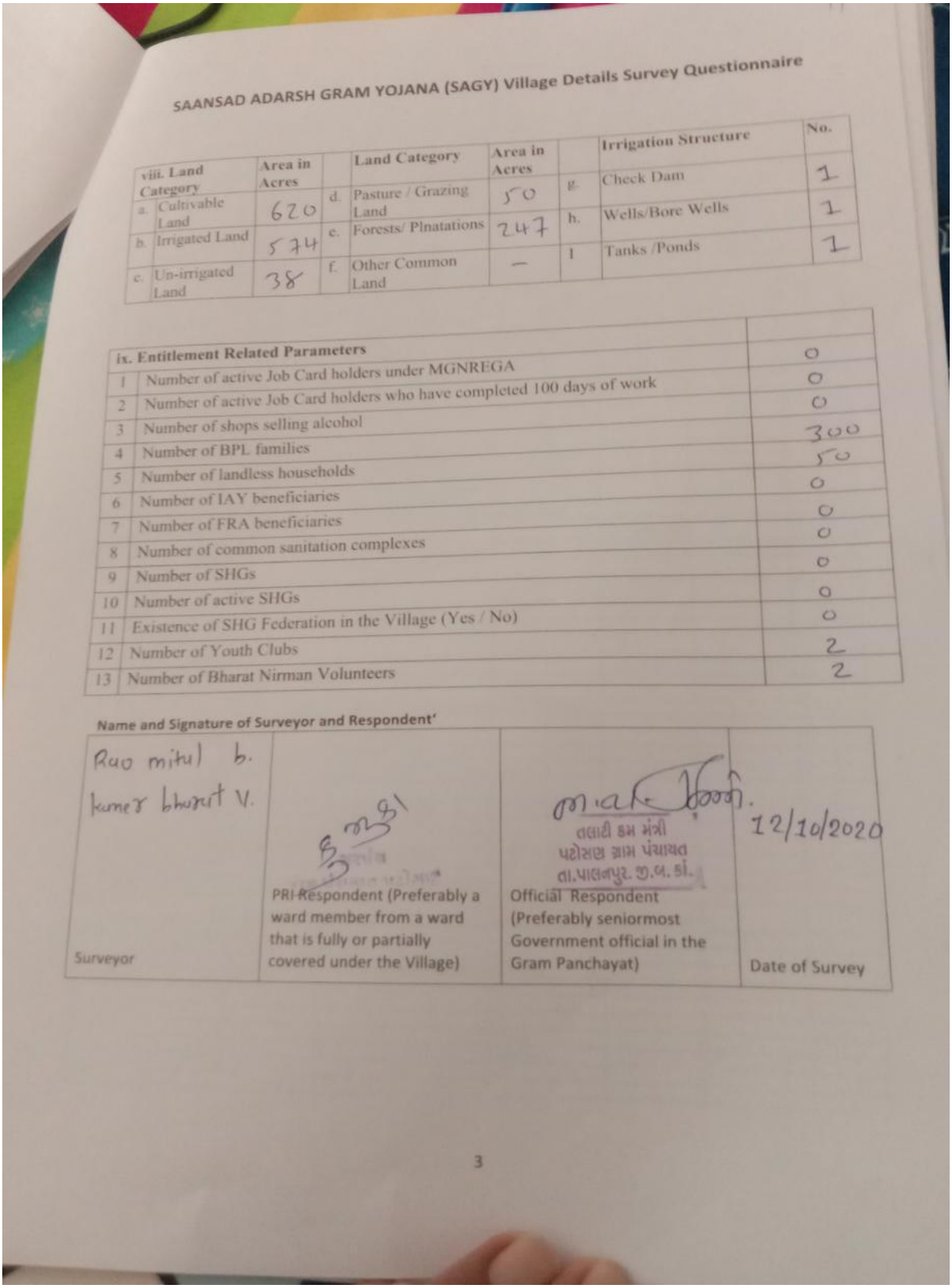
v. Coverage of Habitations under Electrification
a. Coverage under Household Connections: (1-All 2-None 3-Some)
If 3 mention the name of the habitations not covered:

b.Coverage under Street Lighting: All(1-All 2-None 3-Some)
If 3 mention the name of the habitations not covered:

vi. Sports Facilities in the Village
a.Number of Play Grounds in the Village (minimum size 200 square meters): 1
b.Mini Stadium : No Yes(Y) /No (N)

vii. Education, ICDS
a. Number of Anganwadi Centres: 4
c. Schools (Number)
Primary Private: 1 Primary Govt.: —
Middle Private: — Middle Govt.: 1
Secondary Private: — Secondary Govt.: 1
Higher Secondary Private: — Higher Secondary Govt: —

2



SAANSAD ADARSH GRAM YOJANA (SAGY) Village Details Survey Questionnaire

viii. Land Category	Area in Acres		Land Category	Area in Acres		Irrigation Structure	No.
a. Cultivable Land	620	d.	Pasture / Grazing Land	50	g.	Check Dam	1
b. Irrigated Land	574	e.	Forests/ Plnatations	247	h.	Wells/Bore Wells	1
c. Un-irrigated Land	38	f.	Other Common Land	—	i	Tanks /Ponds	1

ix. Entitlement Related Parameters		
1	Number of active Job Card holders under MGNREGA	0
2	Number of active Job Card holders who have completed 100 days of work	0
3	Number of shops selling alcohol	0
4	Number of BPL families	300
5	Number of landless households	50
6	Number of IAY beneficiaries	0
7	Number of FRA beneficiaries	0
8	Number of common sanitation complexes	0
9	Number of SHGs	0
10	Number of active SHGs	0
11	Existence of SHG Federation in the Village (Yes / No)	0
12	Number of Youth Clubs	2
13	Number of Bharat Nirman Volunteers	2

Name and Signature of Surveyor and Respondent'

Rao mitul b. kumar bharat V.		તલાટી કમ મંત્રી પટોસણ ગ્રામ પંચાયત તા.પાલનપુર. જી.બ. કાં.	12/10/2020
Surveyor	PRI Respondent (Preferably a ward member from a ward that is fully or partially covered under the Village)	Official Respondent (Preferably seniormost Government official in the Gram Panchayat)	Date of Survey

3

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

07/08/2021 Gmail - About Vishwakarma yojna phase-8

Gmail **Mitulkumar Rao <mitulkumar1999.rao@gmail.com>**

About Vishwakarma yojna phase-8

Mitulkumar Rao <mitulkumar1999.rao@gmail.com> Sat, Aug 7, 2021 at 3:58 PM
To: collector-ban@gujarat.gov.in

Respected sir/madam
we are student of L.D. College of engineering.We have done a project on Patosan village of Palanpur Taluka.The below attached pdf is of our work.

PATOSAN0708report.pdf
15999K

07/08/2021 Gmail - About vishwakarma yojna phase-8

Gmail **Mitulkumar Rao <mitulkumar1999.rao@gmail.com>**

About vishwakarma yojna phase-8

Mitulkumar Rao <mitulkumar1999.rao@gmail.com> Sat, Aug 7, 2021 at 3:59 PM
To: ddo-ban@gujarat.gov.in

Respected sir/madam
we are student of L.D. College of engineering.We have done a project on Patosan village of Palanpur Taluka.The below attached pdf is of our work.

PATOSAN0708report.pdf
15999K

07/08/2021 Gmail - about Vishwakarma project Phase -8

Gmail **Mitulkumar Rao <mitulkumar1999.rao@gmail.com>**

about Vishwakarma project Phase -8

Mitulkumar Rao <mitulkumar1999.rao@gmail.com> Sat, Aug 7, 2021 at 4:02 PM
To: tdo-palanpur@gujarat.gov.in

Respected sir/madam
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PATOSAN0708report.pdf
15999K

Chapter 21.Comprehensive report for the entire village

Punsari village is one of the ideal village of Gujarat.It is located at Sabarkantha district.It is about 80 km from Gandhinagar. Punsari is an ideal village has good system of sanitation and drainage. Because filth and rubbish of the village is regularly removed away into the compost pits. An ideal village has excellent drains in order that the dirty water of the village is correctly drained away.

Mahatma Gandhi is usually quoted as having said: ―Real India lives in its villages.‖ the very fact that within the early decades of the 20th century, India 's urban segment constituted only 11 per cent of the entire population gave strength to his argument. It was the villages during which 89 per cent of the population lived. That made India an agricultural country.

In 1992, "Smart Growth" emerged as a concept aimed at suggesting an alternative paradigm to the urban sprawl, detached housing and dependence on automobiles. This was primarily driven by planners, architects, community activists, and historic preservationists. The concept proposed that the concentration of growth in a city takes place in compact (mixed land-use and compact design) and walk able urban centers (range of transportation and housing options), where the community participates in making development decisions that are fair, predictable and cost effective (sense of community living). Creative ways of urban planning and design emerged during this time.

Patosan village is in Palanpur taluka and Banaskantha district. In Patosan village people are engaged with the agriculture and Business activity. In this village some educated people went to Amreli for work and some people go for labours work and for other purpose. The main source of water is bore wall and in the village. For the survey of villager, we collect some basic data about village like population of the village, political background of village, Area of Village. Then we will Compare village Facilities with Ideal and smart village.

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, silty, and gravelly soils are the most susceptible to liquefaction.

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

In a bid to ensure that the new academic session is not affected by the pandemic, Gujarat government announced 'Home Learning' programme for Gujarati medium schools from June 15. Education Minister Bhupendrasinh Chudasama said in Gandhinagar that curriculum for students from Class III to XII will be covered in the educational programmes that will be aired on DD Girnar. Vande Gujarat channel will also show programmes for students of Class V to XII.

Various designs selected by us during the project are as below.

Primary Health Centre (Civil)	Rain water Harvesting

Solar Water Distribution System (Civil)	Pickup stand
Park (Civil)	Krishi seva kendra
Library (Civil)	Gram Panchayat
Community Hall (Civil)	Bus stand
Toilet (Civil)	Gram Panchayat building

As the Coronavirus tsunami sweeps cities and towns across India, the vulnerable children who already grappled with issues like lack of education and healthcare, compromised safety and abuse, are at a high risk of suffering even more. The pandemic threatens to reverse the gains made for children and jeopardizes their future gravely. To win this war against COVID-19, we have to ensure that everyone who is eligible gets vaccinated. Many people are still not taking the vaccine as there has been a lot of misinformation surrounding the vaccines and their development.

Irrigation is the artificial application of water to the soil through various systems of tubes, pumps,and sprays. Irrigation is usually used in areas where rainfall is irregular or dry times or drought is expected. There are many types of irrigation systems, in which water is supplied to the entire field uniformly. Irrigation water can come from groundwater, through springs or wells, surface water, through rivers, lakes, or reservoirs, or even other sources, such as treated wastewater or desalinated water. As a result, it is critical that farmers protect their agricultural water source to minimize the potential for contamination. As with any groundwater removal, users of irrigation water need to be careful in not pumping groundwater out of an aquifer faster than it is being recharged.

Tropical regions with dense populations and high rainfall are the areas where intensive subsistence farming is practiced. Rice is the major crop grown because it can fee and employ many people in every unit area. It is mainly adopted in south-east Asia and farmers make use of animal and manual

power to carry out farming activities. Most farmers use manures to improve the productivity of their farms per unit area.

Just like subsistence farming with rice as the main crop, this activity is practiced in areas with low rainfall. Apart from rice, farmers grow other grain crops such as millet and wheat. The agricultural activity is practiced in Central America and southern Africa and areas in northern Africa, Asia and the Middle East without much rainfall throughout the year.

10. Mediterranean Agriculture

Mediterranean agriculture involves the rearing of animals and growing of crops in the rugged, Mediterranean terrain. Small animals and crops such as citrus fruits, vineyards and wheat are the crops mainly grown in the region. Horticulture is also practiced with the majority of crops sown in winter due to winter rains.

11. Dairy Farming

Dairy farming involves the rearing of cattle for milk. With its origins in Europe, the activity is highly developed in Sweden and Denmark. However, it has spread to other parts of the world and is practiced in areas near markets. It thrives in regions that enjoy temperate climate.

"The true India resides in its villages." ~ Charan Singh

As far as we know Villages are heart of our country.By providing better facilities a good development can be done.We as a student tried our best for the betterment of the village.

Hope the dreams come true…….