DETAIL PROJECT REPORT

VISHWAKARMA YOJNA: VIII

AN APPROACH TOWARDS RURBANISATION

Shela Village

Ahmedabad District

PREPARED BY

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CERTIFICATE

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

Detail Project Report for,

VILLAGE Shela

DISTRICT Ahmedabad

Under

Vishwakarma Yojana: Phase-VIII

in partial fulfillment of the project offered by

GUJARAT TECHNOLOGICAL UNIVERSITY, CHANDKHEDA

during the academic year 2020-21.

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

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ABSTRACT

" The Internet is becoming the town square for the global village of tomorrow."

-Bill Gates

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. Rurbanisation 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.

Shela village is in **Ahmedabad** district. In Shela village people are engaged with the agriculture and Business activity. In this village some educated people went to Ahmedabad 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.

"We need to become good citizens in the global village, instead of competing. What are we competing for - to drive more cars, eat more steaks? That will destroy the world. "

-Yuan T. Lee

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 Shela 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.

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ABBREVIATIONS

SHORTNAME /SYMBOLES	FULL NAME
MORTH	Ministry of Road Transport and Highway
PHC	Public health centre
TDO	Taluka Developer
DDO	District Developer Officer
PPP	Public Private Partnership
NGO	Non-government organization
PURA	Provision of Urban Amenities in Rural
DRDA	District Rural Development Agency
MGNREGA	Mahatma Gandhi National Rural Employment Guarantee Act
PMGSY	Pradhan Mantri Gram Sadak Yojana
NRUM	National Rurban Mission
SC & ST	Schedule Cast & Schedule Tribes
LED	Light Emitted Diode
CCTV	Close Circuit Television
SAGY	Sansad Adarsh Gram Yojana
VMC	Vadodara Municipal Corporation
ITS	intelligent transportation system
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
MS	Mild Steel
CI	Cast Iron
AMC	Ahmedabad Municipal Corporation
IEEE	Institute of Electrical and Electronics Engineers
WISE	Wales Institute for Sustainable Education
ICDS	Integrated Child Development Services
CGIAR	Consultative Group on International Agricultural Research
ARTS	Advanced Rural Transportation System
NDMA	National Disaster Management Authority
COVID	Corona virus disease

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CHAPTER 1 .....IDEAL VILLAGE VISIT

1.1 Background & Study Area Location

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

Dwelling-houses:

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

Food and fodder:

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

Drinking water:

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

Agriculture and Industry:

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

Educational facilities:

There are Primary schools, High schools and craft schools in an ideal village. Primary education is free and compulsory.

Clinical facilities:

In an ideal village, there are clinical facilities for men and the domestic animals. Hence, there are dispensaries and veterinary dispensaries.

Other facilities:

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

People:

People of an ideal 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 have been 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 just like this snap, if they have determination to their duties as we do in 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,

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,

1. **Roads**
2. **Electricity**
3. **water**
4. **hospitals**
5. **schools**

In entire country, rule should be passed in such a way that, in each year one mentioned amenity should be completed across country in all villages. (I guess one year is more than enough to construct any of the abovementioned facility). something like this, year 1- Roads, Year 2 - Electricity and so on. by the end of each year, villagers and their local political leader should check this off from their list. if they don't do it then they should not complain about it in the future. both people and political leader should be responsible in constructing Simple India.

1.2.1 Objectives

Being a man of vision, Mahatma Gandhiji felt that the reconstruction of India lies in the overall development of the villages. Since India lives in villages, apart from his great concepts like swadeshi, Khadi and small cottage industries for his dreamy ideal village, Gandhiji felt that a good and healthy environment which encompasses health, sanitation and good, healthy food for the malnourished, under country men 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 have 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 part of shaping the human consciousness which is why he carried out a number of experiments to find the perfect diet. Though Gandhi is associated with

vegetarianism and milk, he actually abstained from milk for a period of six years, considering it an animal product.

1.2.2 Example / Live Case studies of ideal village of India/Gujarat

Village of Millionaires. HiwareBazar…..Maharashtra. ...

Asia's **Cleanest Village**….Mewlloyang…Meghalaya ...

Smart 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. ...

1.2.3 The Idea of a model/Smart Village

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

1. 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.

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

3. 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.

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

Over recent decades, people's (rural and urban) communities are facing numerous social and economic changes and challenges. Some of those challenges have been increasingly addressed through the lenses of technological developments and digitalization. In this paper, we have made a review of already existing practices while focusing on the existing implementations of the Smart Village concept and 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 are not uniform, and that smart rural development has to be applied in combination with

place-based approach. We present the cases of Slovenian pilot practices and support our argument by proposing the Village concept,

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

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

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

3. The percolation theory of growth had failed;

4. If development is not viewed only as growth, then the creation of employment opportunities and deliberate distributive measures were required to achieve the objective of developing the forgotten majority of rural poor in developing countries,

5. Development should cover larger dimensions of the quality of life of the vast majority of the people; and

6. The realization that the traditional method of agriculture in the developing countries could be transformed through modern technology and modern farming practices were other aspects of the rethinking on development.

A major consequence of all these new truths of the development experience is current concern of Rural development. It occupied the central place in the development dialogue of the World Bank, which became the champion of the cause

1.3 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 **Sabarkantha**, Taluka **Talod.**

Punsari is 20 km far from the Talod bus station. This connectivity is due to the district road

Small towns in India are in a desperate need for better infrastructure which can boost the local economy and help improve the quality of life. While many big cities have made progress in recent years, the small towns of India continue to lag behind.

There are many challenges that these places face including poor road connectivity, primary healthcare system, educational infrastructure and affordable housing.

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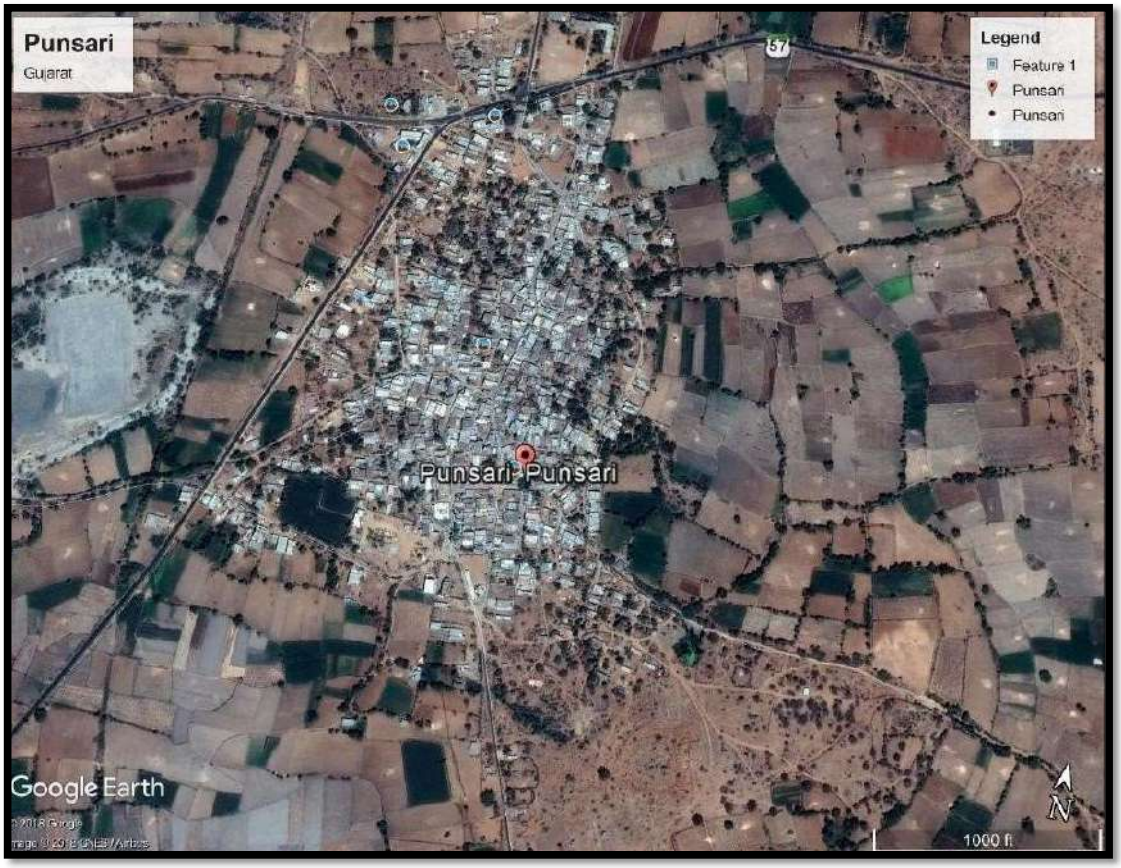

FIG 1: VILLAGE MAP OF PUNSARI (GUJARAT)

1. **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 improve sanitation and prevent outbreak of diseases. At present, 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 major problem with most towns getting flooded during the monsoons.

2. **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 may not necessarily mean that all houses in the villages have access to electricity. This is because it takes time to set up the infrastructure such as transformers and power lines needed to distribute the electricity to every 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.

3. **Roads:** There is a positive relationship between connectivity and development in smaller towns and villages in India. With better roads and highways, there can be a better flow of business, trade and communication that will eventually enhance growth. Mountainous areas

and remote villages are cut off from the network of roads, which need to be connected. The government has allocated thousands of crores for building a strong transport network that can link different cities and small towns with regional hubs. However, several projects across the country have seen slow progress over the years severely impacting the economic progress of the small towns.

4. **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. Similarly, on August 3, Mahad bridge on Mumbai-Goa highway collapsed. In the Gujarat town of Junagadh, earlier this year, another bridge had collapsed due to poor materials that were used in its construction. In smaller towns with rivers, bridges are very crucial for children and workers to travel to school or their work site.

5. **chools:** Many small towns lack basic educational infrastructure. Most schools don't have proper toilets, electricity, and proper buildings with roofs. There is also lack of drinking water. The condition of government schools are also not satisfactory, according to many reports. There have been several cases of poisoning due to poor quality mid-day meals in government schools.

6. **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

7. **Affordable Housing:** Owning a house is an aspiration for a lot of middleclass Indians but the cost of buying a property is extremely high. Banks offer home loans for purchase, which has to be paid back in monthly instalments. High EMI rates and low earnings builds pressure on the people. The present government has acknowledged this problem and announced the "Housing for All by 2022" scheme. However, considering the present market conditions, many industry experts call it a far-fetched idea. In an interview to the Business Insider, global real estate company JLL India's country head Anuj Puri told the Business Insider said that making 2 crore urban houses and 4 crore rural houses available is a huge undertaking in itself, and will require not only sustained government interest and investment but also substantial private sector investment and involvement.

8. **Telecom:** According to the Ministry of Telecommunications, India is the fastest growing telecom market with progressive reforms and policies. However, India is nowhere close to

China and USA in terms of network connectivity because of low penetration in rural areas due to lack of telecom infrastructure. Some of the weaknesses highlighted in the same government report are lack of indigenous telecom manufacturing and low broadband reach in rural areas.

9. 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 is inadequate piped water supply across rural India and the houses that receive water are mostly untreated. During years of bad monsoon, crops suffer because of the lack of irrigation facilities. By 2017, the government aims to bring piped water supply to at least 50 per cent of rural households.

10. Sanitation Facilities: Open defecation is a major issue in rural and semi-rural India despite the many governmental schemes and awareness programmes. According to an United Nations report in 2010, out of a total of 2.5 billion people worldwide that defecate openly, 665 million belong to India. And what is more alarming is the fact that some 88 per cent of diarrhoeal deaths worldwide are attributable to unsafe water, inadequate sanitation and poor hygiene. "Improving access to safe drinking water, adequate sanitation and promoting good hygiene are key components in preventing diarrhoea," the report said.

We went in Punsari and visited all physical and social infrastructure of village. There is so many facilities All facility is depicted below through photographs.

FIG.2 :IDEAL VILLAGE PUNSARI NEWS

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FIG.3: GOVT. PRIMARY SCHOOL

FIG.4: DIGITAL IT SECTION

FIG.5: PRIMARY SCHOOL PUNSARI

FIG.6: BIRD HOUSE PUNSARI

FIG.7: ENTRANCE GATE PUNSARI

FIG.8: SBI BANK & ATM PUNSARI

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FIG.9: OLD WATER TANK, PUNSARI

FIG.10: CLINICAL FACILITY

FIG.11: POST OFFICE, PUNSARI

FIG.12: AUTOMATED FLOOR WHEEL

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FIG.13: AANGANBADI AREA, PUNSARI

FIG.14: PUNSARI BUS STAND

1.4 SWOT analysis of Ideal village / Smart Village

TABLE 1: ALL AMENITIES IN IDEAL VILLAGE PUNSARI

• Drinking water facilities	• Individual toilets	• Public library
• Rural roads	• Play grounds	• Water treatment plant
• Burial ground	• Animal ground	• Shopping center
• Community hall	• Open air theatre	• Village tank/lake
• Citizen service centre	• Skill development centre	• Street light (Solar system)
• Water harvesting	• Roads to farms	• Electricity generation plant

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

1. Amenities/Activities to be provided under **MoRD** (Ministry of Rural Development) Schemes (Mandatory),
2. Amenities to be provided under Schemes of other Ministries (non-MoRD Schemes),
3. Add-on Projects (Revenue earning, people-centred projects).

TABLE 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		

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

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

TABLE 3: POPULATION DETAIL OF VILLAGE

	2001	2011
MALE	2221	3246
FEMALE	2456	2798
TOTAL	4677	6044

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 are 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 centre, public library and public health centre etc.

TABLE 4: ECONOMIC STATUS

Punsari Village	
ECONOMICAL STATUS	
	PERCENTAGE (%)
FARMER	85.00
JOB	12.00
OTHER	3.00

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Social Scenario:

Punsari is a village located in Sabarkantha district in the state of Gujarat, India Punsari is considered as India's smartest village. The village is located at about 80km from the state capital, Gandhinagar. Punsari is 20km from Parvati Hills. Parvati Hills is 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 in this village the village has undergone a transformation under the panchayat. There has been use of new and advanced technology in education. This village has wi-fi connection for all people. Efforts have been made for the empowerment of women and increasing security in the village. Some of the facilities provided by the panchayat include local mineral water supply, sewer & drainage project, a healthcare centre, banking facilities and toll-free complaint reception service. Consequently, Punsari received the award of being the best 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 5: LITERACY PROFILE

Punsari Village	
LITERACY PROFILE OF PUNSARI	
	PERCENTAGE (%)
MALE	84.84
FEMALE	53.06
TOTAL	69.38

Infrastructure facilities (All types): -

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

- **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

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- **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 Centre
  - Medical Centre
  - Nursing Homes
  - Private Clinic
- **Educational Facilities:**
  - Anganwadi – 8 Nos.
  - Primary School – 2 Nos.
  - Secondary School – 1 Nos.
  - Skill Development Centre – 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 Centre
- **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

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

1.4 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, Water Tank

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 parlour & Garment Sector), Private Nursing Homes, Shopping Shops

Threat of Punsari village:

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

1.5 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 And They Provide Solid Waste Reduce Machine

1.6 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 Theatre, Skill Development and Public Library.

1.7 Electrical concept of Ideal village / Smart Village

Ideal/ Smart villages will be connected to towns and cities through information and communication technologies (ICT) enabled by access to energy. Such technologies will enhance education and health services by providing links to the world's knowledge base and opportunities for distance learning, as well as supporting initiatives in m-health (mobile health, also known as telemedicine). Connectivity will also open up participation in governance processes at local, regional and national levels.

There are many areas within the ideal villages vision that will be sharpened and refined through a series of workshops to be held around the world under the current Ideal Villages Initiative. With the immense potential benefits that it can bring to rural communities, is not just aspirational but can be realised with the engagement and wholehearted commitment of all stakeholders, from the inventors of new energy-provision technologies to indispensable village leaders as role models.

Smart/ Ideal villages can capture many of the benefits of urban living while retaining valued aspects of rural life and ensuring balanced development at the national level. This enables villagers to attain healthy and fulfilling lives, achieve their development potential, earn a viable living and be connected to the wider world, giving them a real choice between the traditional route of migration to a city, or life in a smart village.

CHAPTER 2 .....SHELA VILLAGE DETAIL

2.1 Introduction: Urban & Rural

TABLE 6: CLASSIFIYING 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 oflabor	Always present at the time of job allotment.	No such division.

2.2 Ancient Villages / Different Definition of: Rural Urban Villages

Mahatma Gandhi is often quoted as having said: —Real India lives in its villages. The fact that in the early decades of the 20th century, India's urban segment constituted only 11 per cent of the total population gave strength to his argument. It was the villages in 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.

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

TABLE 7: CENSUS DETAILS

	2001	2011
MALE	1875	2486
FEMALE	1225	2368
TOTAL	3100	4854

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2.4 Rural Issues & Concerns

The growing rural discontent also worried the British Government. It felt the need to investigate the actually existing conditions. S.J. Patel, in his book Agricultural Laborers in Modern India and Pakistan, talks about the growth of village studies: With the end of the First World War, the beginnings of an agrarian crisis were 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 attract considerable attention from students of Indian society.

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

The results of these investigations evoked great interest and stressed the necessity 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 social scientist.

2.5 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:

1. Human resources
2. Physical capital
3. Food quality
4. Transitional measures for the new Member States

Human resources: young farmers, early retirement, training and information, farm advisory services. A series of measures target human resources within and linked to the agriculture and forestry sectors.

Vocational training and information actions are available to all adult persons dealing with agricultural, food and forestry matters in order to provide an appropriate level of technical and economic expertise covering issues under both the agricultural and forestry competitiveness and the land management and environmental objectives.

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

Study area land use details:

TABLE 8: LAND USE DETAIL AND BUILDING CONDITION

Description	Area
Area of Village (Approx.)	2000 Hector
Forest Area	-
Agricultural Area	500Hector

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

TABLE 9: HEALTH FACILITIES

Sr. No.	Description	Availability or nearby distance
1.	Sub health center	1 Nos.
2.	Govt. hospital	2.5Km
3.	Private Clinic	4 Nos.
4.	Surgical doctor	1 Nos.
5.	Blood bank	3 Kms
6.	Ambulance facilities (108)	1 Nos
7.	Medical shop	1 Nos
8.	Aayush health facilities	available

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2.7 Importance in rural context

Rural development is a topic that is pretty easy to understand but hard to implement. It focuses upon the upliftment and development of the sections of rural economies, that experience grave poverty issues and effectively aims at developing their productivity. It also emphasizes the need to address various pressing issues of village economies that hinder growth and improve these areas. Some areas that need 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

2.8 Sustainable Village Development concept

The rural economy is an example of an agrarian economy. Although farming and agriculture are one of the most important primary activities, the problem lies in the fact that they share in the GDP of the agriculture sector is on a constant decline. At the same time, about two-thirds of India's population depends on agriculture. As a result, the productivity is not up to the mark, with conditions only getting worse. Rural development is a comprehensive term. It essentially focuses on action for the development of areas outside the mainstream urban economic system. we should think of what type of rural development is needed because modernization of village leads to urbanization and village environment disappears.

2.9 Other Projects / Schemes

TABLE 10: SOCIO CULTURAL FACILITY

Sr. No.	Facilities	Information/ Details
1.	Community hall (without TV)	0 Nos
2.	Public library	No
3.	Public garden	No
4.	Village pond	Yes
5.	Recreational center	Yes
6.	Birth & death registration office	Yes

TABLE 11: OTHER FACILITIES

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

2.10 Ancient / Existing Electrical concept Literature Review for village

1) David Freshwater (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, and so a discussion of sustainable employment has to be conducted in a dynamic context where different types of employment evolve as economic conditions change.

While market signals alone can, in principle, provide the information and the conditions for this type of dynamic process, the argument of the paper is that the nature of rural areas makes it unlikely for markets alone to allow sustainable employment.

2) 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 the problems of villages in Beijing metropolitan region. The paper also explores the role of villages in the metropolitan region in the process of urbanization. As a representative case, the Village System Planning of Changing District in Beijing is presented in this paper. According to the research on the economic and the spatial typologies of villages in Changing District, the villages are classified to three categories in 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.

3) Dr. Milind Kulkarni (2010):

In India majority of the population still lives in villages. A lot of work needs to be done in making the villages clean. There are different aspects of clean village such as: water supply, 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 based on success and failure in adopting different alternatives. Keeping in touch with technology clean village projects should integrate technology and digital design, which will 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 clean and smart village which will help in their skill development. At the end paper gives recommendations for effective making of Clean and Smart Village.

4) N. Viswanadham, SowmyaVedula (2010):

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

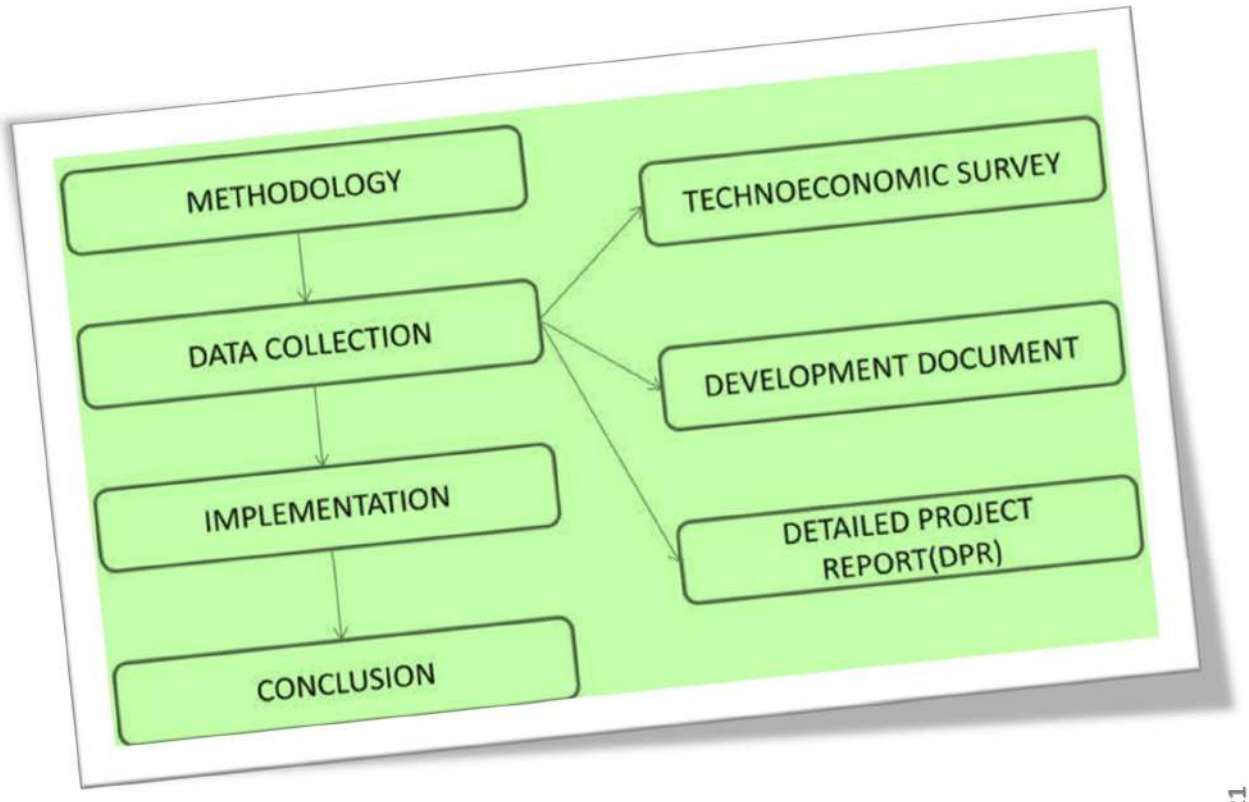

FIG. 15: METHODOLOGY OF FRAMEWORK

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CHAPTER 3 .....SMART VILLAGE VISIT

3.1 Concepts, Definitions and Practices

Concept

The smart village concept is totally depending on village facilities & people who lives in it. Village performance depends on physical infrastructure, increasingly on the availability and quality of knowledge, communication & human education, social and relational capital and environmental factors. In short, a smart village has investments made in human and social capital in addition to physical capitals.

Definition

By exploring an extensive array of literature from various fields such as e-government, information science, urban studies, and public administration, we identify and discuss challenges, success factors, and impacts of government-driven initiatives to that make a city smart.

city that monitors and integrates conditions of all of its critical infrastructures, including roads, bridges, tunnels, rails, subways, airports, seaports, communications, water, power, even major buildings, can better optimize its resources, plan its preventive maintenance activities, and monitor security aspects while maximizing services to its citizens.

FIG.16: SMART CITY CONCEPT

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3.2 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 ecosystems that is working towards addressing rural development challenges using innovative technologies and business models.

Vision & Goals:

While the government-led initiatives rely on integration and convergence of the existing central and state 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 Smart project which aims to create 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.

Performance Measurements:

Human society is developing with rapid momentum and achieved various successes for making its livelihood better. The civilization is witness for various changes related to it's 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 see to more inclined to accept and adopt Information and Communication Technology due 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 in the form of smart cities and better livelihood of residing human beings. But the problems, consequences and opportunities in urban areas are different for effective utilization of Information and Communication Technology for sustainable development of rural masses. The present research article discusses about rural development in developing world for the upliftment of livelihood of the rural masses and to take a 'look ahead' at scientific developments and technologies that might be influential over the next 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 local business opportunities, improving health and welfare, enhancing democratic engagement and overall enhancement of rural village dwellers. The " Smart Village " concept aims to realize its goal through providing policymakers with insightful, bottom–up analyses of the challenges of village development.

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

Parameters	Benchmark
Sewerage and Sanitation	100% household should have access to toilets. 100% schools should have separate toilets for girls.
Solid waste management.	100% household are covered by daily door- to-door step collection system. 100% collection of municipal solid waste. 100% segregation of waste. 100% recycling of solid waste.

Storm water drainage	100% coverage of road network with storm water drainage network. Aggregate number of incidents of water logging reported.
Electricity.	100% household have electricity connection. 27X7 supply of electricity. 100% metering of electricity supply. Tariff slabs that work towards minimizing waste
Wi-Fi connectivity.	100% of the city has Wi-Fi connectivity. 100 Mbps internet speed
Transport.	Maximum travel time 30 minutes in small and medium size. Cities and 45 minutes in metropolitan area. Access to par transit within 300m walking distance.
Telephone connection.	100% household have a telephone Connection including mobile.

Smart Cities Standards:

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

Smart Cities Performance Measurement Indicators:

- Uses of renewable sources like biogas, solar etc.
- Smart primary health care 27 X 7.

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- Metaled road and streets.
- Smart primary and secondary education.
- Solar energy plant to preserve electricity at the village level itself.
- Proper sanitation, disposal of rainwater.
- Hygienic drinking water and R.O. system.
- Connectivity through internet, Wi-Fi mobile tower.
- Availability of Banks, ATMs, post offices etc.

- Area for solid waste disposal and liquid waste disposal.
- Provision of Rainwater harvesting system.
- Rural market with access to all basic facilities.
- Common places like community hall, marriage hall, theatre etc.

3.3 Technological Options:

- **Smart energy:**
  Both residential and commercial buildings in smart cities are more efficient, using less energy, and the energy used is analysed and data collected. Smart grids are part of the development of a smart city, and smart streetlights are an easy entry point for many cities, since LED lights save money and pay for themselves within a few years.

- **Smart transportation:**
  A smart city supports multi-modal transportation, smart traffic lights and smart parking. "One of the key areas that we have seen a lot of activity on has to do with mobility. Anything around transportation, traffic monitoring, parking," said Sanjay Khatri, director of product marketing and IoT services for Jasper. "These are areas where cities are seeing a very fast return on investment. It not only helps to reduce the cost of monitoring parking and making sure that they are collecting fines, it's also reducing congestion.

- **Smart buildings:**
  Automated Intelligent Buildings, Advanced Heating Ventilation and Air Conditioning systems (HVAC), Lighting Equipment.

- **Smart governance and smart education:**
  Government-on-the-Go; e-Government, e-Education, Disaster management solutions.

- **Smart healthcare:**
  Intelligent Healthcare, Technology, use of e-Health and m-Health Systems, Intelligent and connected medical devices.

FIG.17: SMART CITY: PERSPECTIVES

3.4 Road Map and Safe Guards

Cities and Counties face many challenges and risks, such as unemployment, poverty, traffic congestion, high crime rates, cyber-attacks, and slow bureaucratic city systems for processing business transactions. People, Processes, and Technology are three pillars of smart city initiatives that can be utilized to alleviate such a challenge. Cities and counties are expected to study their community, create policies, and implement technological solutions to meet the citizen and community's needs. federal governments must be innovative and need to develop a roadmap to address and provide solutions and and provide solutions to mitigate risks and challenges, in order to create a sustainable future for their citizens.

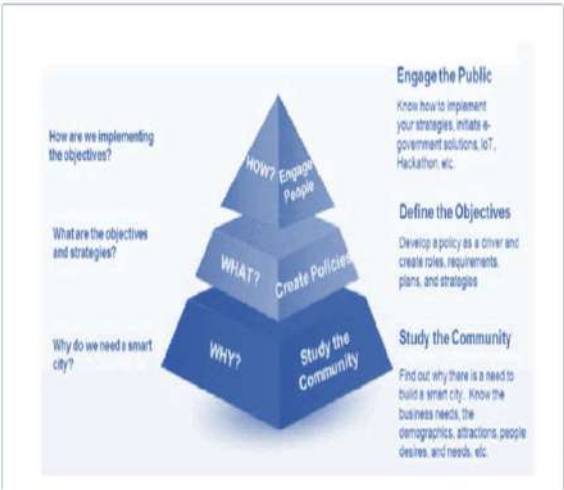

FIG.18: ROAD MAP OF SMART CITY

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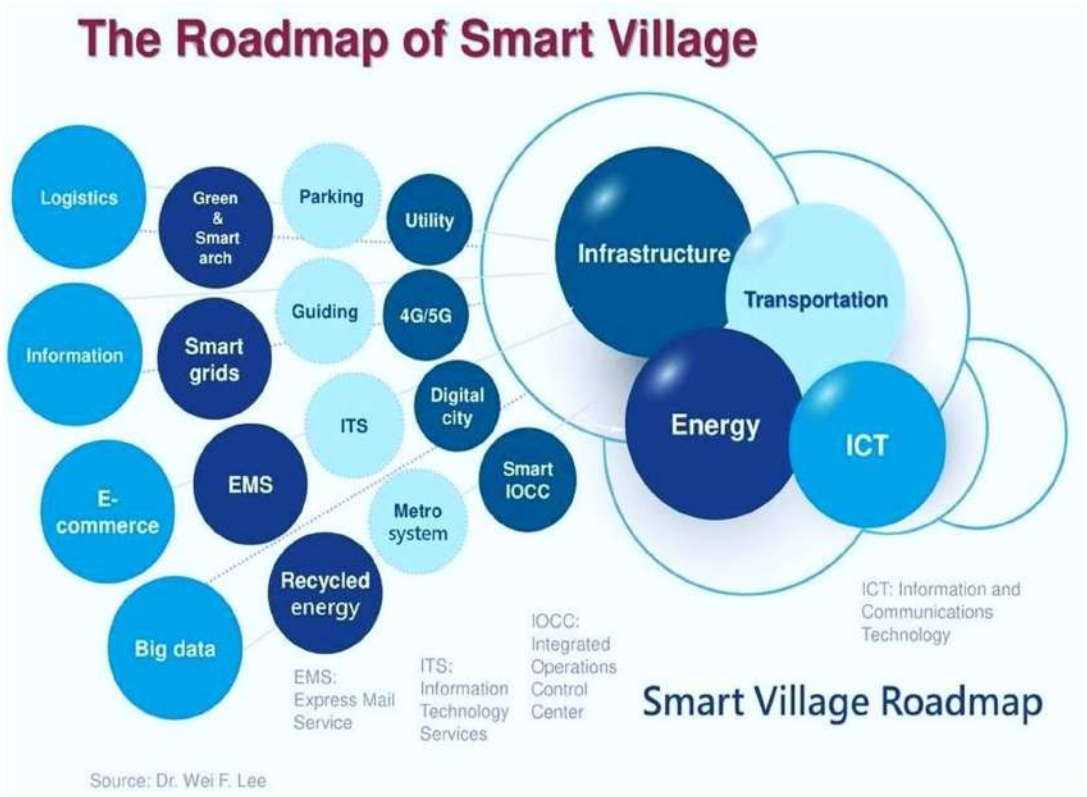

FIG.19: ROAD MAP FOR SMART CITY & GAURDS

3.5 Smart Cities: Issues & Challenges

One of the biggest challenges is having a streamlined funding for the development of smart cities.

It was decided that each Smart City will receive 500 Crore over the period of 5 years Central Government. But this amount won't be sufficient.

Technology:

There are certain technologies that are a part of the project and it is expensive to use them. Because of the advancement.

This hinders the success of smart city project. Another challenge is in the discovery of technology and the need for a medium that can bring technology users and creators together to adopt faster platforms.

Lack of Infrastructure:

For the development of smart city, there is a dual need of building it on two layers i.e.) infrastructure and technology. With infrastructure being the underlying layer and technology being the top layer.

It was reported in a survey that, almost 50% urban areas do not have water supply connections. Sewage is also a big problem and solving these issues in important before moving on to the technology layer.

Problem of regulation and governance:

Owing to a large set of investors, the list of stakeholders in the project is growing. In case of any legal issues, there is a strong need of separate legal framework in the stages of smart city mission.

When the project is big there is a need of effective communication between central governments, state and local governments.

Apart from this, there is also a need of statutory bodies to provide quick approvals so that no resources and time goes waste.

Other utility services:

For a smart city, the main focus is on the reliability of utility services including water, electricity and broadband services.

There needs to be a constant 24X7 supply grid electricity. However, looking at the existing demand and supply, this is quite challenging although not impossible.

Thus, in order to overcome this hurdle, the cities need to shift towards renewable sources and need to focus on green buildings to reduce the need for electricity.

Challenges:

States and ULBs will play a key supportive role in the development of Smart Cities. Smart leadership and vision at this level and ability to act decisively will be important factors determining the success of the Mission.

Understanding the concepts of retrofitting, redevelopment and Greenfield development by the policy makers, implementers and other stakeholders at different levels will require capacity assistance.

The Smart Cities Mission requires smart people who actively participate in governance and reforms. Citizen involvement is much more than a ceremonial participation in governance.

FIG.20: CHALANGES OF SMART CITY

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Smart people involve themselves in the definition of the Smart City, decisions on deploying Smart Solutions, implementing reforms, doing more with less and oversight during implementing and designing post-project structures in order to make the Smart City developments sustainable.

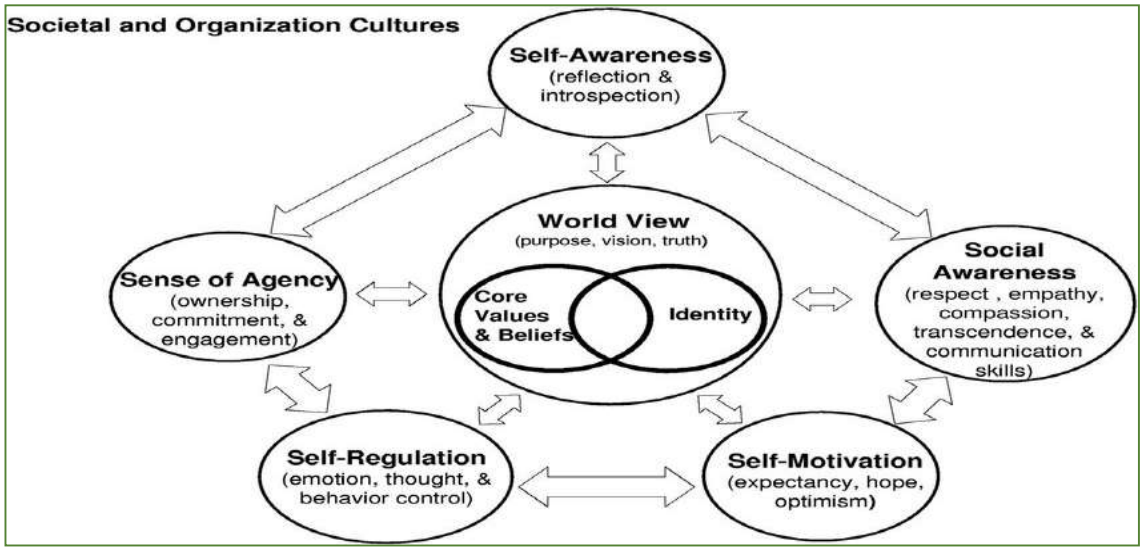

FIG. 21: DEVLOPMENT OF HUMAN BEING

3.6 Smart infrastructure

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.

FIG.22: SMART INFRASTRUCTURE

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:

1) Smart Cities
2) Smart Homes
3) Smart Hospitals

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4) Smart Grids

3.7 Security Challenges in Smart Cities:

Data Privacy and protection concerns:

Privacy is considered as a basic human right and is protected by national laws in different ways.

Privacy concerns include the acceptable practices with regards to accessing and disclosing personal and sensitive information about a person.

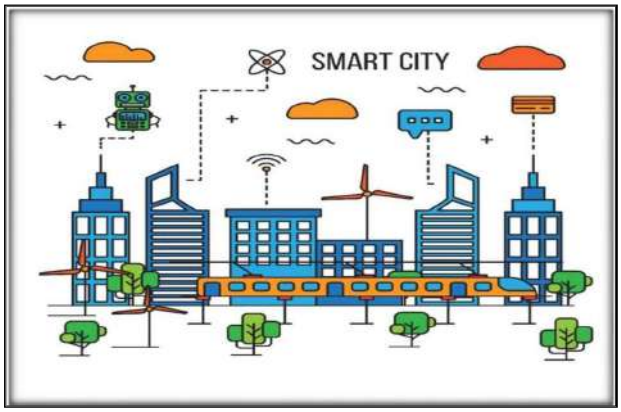

FIG.22: CYBER SECURITY

Sensitive information can relate to a number of personal facets such as any information that can be used on its own or with other information to identify, contact, or locate a single person, or to identify an individual in context.

Smart city technologies capture data relating to all forms of privacy and drastically expand the volume, range and granularity of the data being generated about people and places.

3.8 District cooling and heating / Green building:-

- As per the ERKC (energy research knowledge center) district heating and cooling covers the generation and distribution of thermal energy in district networks.
- Smart district heating and cooling grids aim to improve the management of energy demand The United States of America (USA) and Canada have developed demonstration projects on a large scale for DH or DC.
- The Cornell University uses cold water from the bottom of Cayuga Lake for cooling the campus via a district energy system, thus reducing the use of cooling electricity by 87% campus wide, cutting CO2 emissions by 56 million lbs per year, and eliminating 40,000 lbs. of chlorofluorocarbons (CFCs).
- With the USA, United Arab Emirates (UAE), Japan and China being the biggest heating and cooling markets, it would be expected that they have a remarkable potential for transition to smart DHC systems in the future.
- Concerning DC technology, the highest cooling capacity is currently installed in the USA, with 40 communities having a total of 3500MW cooling capacity installed and more than 150 university campus areas with almost 7000MW.
- Smart DHC concepts will play an important role by developing future smart energy systems integrating power, heat and gas networks.

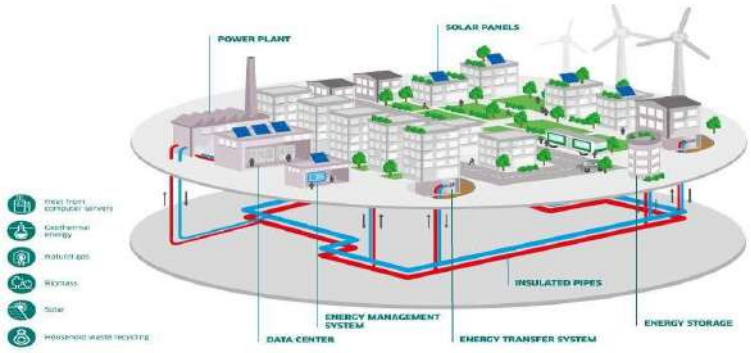

FIG.24: DISTRICT COOLING AND HEATING NETWORK

GREEN BUILDING

Green buildings are designed to reduce the overall impact of the built environment on human health and the natural environment by:

1) Efficiently using energy, water, and other resources

2) Protecting occupant health and improving employee productivity

3) Reducing waste, pollution and environmental degradation

FIG.25: GREEN BUILDING

FIG.26: ACTUAL GREEN BUILDING

A green building rating system is an evaluation tool that measures environmental performance of a building through its life cycle.

Comprises of a set of criteria covering various parameters related to design, construction and operation of a green building A project is awarded points once it fulfils the rating criteria.

The points are added up and the final rating of a project is decided.

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Globally, green building rating systems are largely voluntary in nature and have been instrumental in raising awareness and popularizing green building designs.

Each criterion has pre-assigned points and sets performance benchmarks and goals that are largely quantifiable.

FIG.27: BENEFITS OF GREEN BUILDING

3.9 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 favourable changing consumption trend as well as the potential size of the market, rural India provides a large and attractive investment opportunity for private companies.

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

Water challenges:

The problem of water scarcity in urban area of developing countries is a major concern. It is estimated that by 2050, half of India's population will be living in urban areas and will face acute water problems.

The daily water supply rate in the developing countries is very low compared to the industrial world.

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In India, it ranges from 16 to 300 liters/day depending on the locality and the economic strata.

Whereas this figure ranges from 100 to 600 liters/day in the developed countries. All the cities with pumping locations around the city face steep decline in water table. Chennai in 2005 faces severe drought so large amount of underground water extracted to cope up their urban water demand so water table fall to 8 to 10mt Cities, the concrete jungle, are characterized by impervious surfaces or surface with very high runoff coefficient. So, water which percolate in earth in form of rain should also get drained off very fast which increase the depletion of available water resources.

The prevailing water stress in many developing cities is not only due to source limitations but other factor such as poor distribution efficiency through city network and inequalities in service provision between the rich and the poor.

One of the main reasons is the high rate of water losses from the distribution system. Demographic, social and economic developments are the factors which increase pressure on water resources.

Sanitation challenges:

One of the major challenges for the government is to elevate India to the international levels of urban sanitation that is found in developed counties.

As a step towards this, India along with other member states of the UN committed to the new global goals for sustainable development, which included target to ensure everyone, everywhere, has access to basic toilets by 2030.

But for this to be achieved, India must first concentrate on establishing the infrastructure needed to set up the required number of toilets, refurbish and build efficient sewage networks.

It must also ramp up the waste treatment facilities so that water bodies are not polluted by effluent discharge.

India needs to liberated itself from this unbecoming distinction and join the ranks of developed nations who have implemented urban planning and sanitation on an equal footing and reaped spectacular results in the form of highly evolved cities that are not only clean, resilient and environment-friendly, but they also provide a healthy habitat for the residents.

FIG.28: WATER AND SANITATION ISSUES IN INDIA

3.11 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.

FIG.29: ADALAJ MAP

FIG.30: ADALAJ SEVA SAHKARI MANDALI

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FIG.31: TEMPLE, ADALAJ VILLAGE

FIG.32: VILLAGE ROADS

FIG.33: BANK & ATM, ADALAJ VILLAGE

FIG.34: PRIMARY HEALTH ADALAJ

3.12 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.

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• The Government of India has approved the proposal to construct 10 million houses for the rural population, which will require an investment outlay of Rs 81,975 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 Budget are:

• Rs 187,223 crore (US$ 28.08 billion) has been allocated towards rural, agriculture and allied sectors.

• The Allocation for Pradhan Mantri Aawas Yojana-Gramin 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.

3.13 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's 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.

3.14 Electrical concept

Alternative sources of energy are being pursued in the world today, as the accessibility of fossil fuels and other non-renewable resources are declining. Solar energy offers a promising solution to this search as it is a less polluting energy resource and can easily be converted into electricity through the usage of photovoltaic systems. It is a clean, pollution free and renewable energy source. Model approaches for a renewable energy supply have been developed and demonstrated to meet the energy requirements of rural people, while raising economic productivity contributing to a sustainable improvement in living conditions in rural areas. These also provide inputs for further rural energy interventions and they reduce carbon emissions by focusing on technologies not based on fossil fuels. Providing access to electricity in rural areas of India is a major challenge. The fuel is generally of meagre quality, and energy is used inefficiently; the power supply is unreliable and access to it limited, with about 500 million people in rural areas still unable to benefit from modern energy services. This not only has an adverse effect on economic productivity; more importantly, it also affects people's

quality of life and is having a strong impact on the environment. The unsustainable use of locally sourced biomass and an increasing dependence on fossil fuels are causing environmental degradation at local (land degradation), regional (air, water and soil pollution) and global levels (greenhouse gas GHG emissions contributing to climate change).At the same time, locally based measures that use renewable energies to secure the rural power supply are opening up new opportunities for economic productivity while also reducing GHG emissions and local pollution. The purpose of the Rural Energy Supply Models (RESM) is to provide a qualified tool as a guide for governments, business, experts and financing organizations. It is intended to help bridge remaining knowledge gaps on suitable models for energy supply in rural areas. By presenting best practices in a structured format, this tool can offer valuable support in the preparation of future projects for rural power supply using renewable energy. RESM accumulates the characteristics, model-specific advantages, problems and success factors for different Rural Energy Supply models, illustrated with real-world example.

CHAPTER 4.....ABOUT SHELA VILLAGE

4.1 Introduction

4.1.1 Introduction About Shela Village details

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

4.1.2 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. Rurbanisation 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. Shela village is in Sanand taluka and Ahmedabad district. In Shela village people are engaged with the agriculture and Business activity. In this village some educated people went to Ahmedabad 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 Shela 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.

4.1.3 Study Area (Broadly define)

- Locality Name: **SHELA**
- City Name: **SANAND**
- District: **AHMEDABAD**
- State: **GUJARAT**
- Language: **Gujarati and Hindi**
- Time Zone: **IST (UTC+5:30)**
- Elevation / Altitude: **40 meters above sea level**
- Telephone code/ Std code: **02717**
- Post Office Name: **BOPAL**
- Pin Code: **380058**

FIG.35: STUDY AREA LOCATION

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4.1.4 Objectives of the study

AIM

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

OBJECTIVES

1. To perform the socio-economic Survey of the Study area i.e. Shela Village, Ahmedabad.

2. To Identify the existing facilities and infrastructure in the Shela village and to propose the infrastructure with design.

3. To design various infrastructures in the Shela Village based on the requirements.

4.1.5 Scope of the Study

1. Provide safe and affordable water facilities and sanitation.

2.To perform safe and Economical socio-economical surveys.

3.To solve water scarcity and other problem for rural area.

4.Design a network and infrastructures which is economical and easy to develop.

5.Creation of artificial ground water recharge system and other facilities.

6.Provide aesthetic and hygienic environment for human.

7.Collection and storage of rain water and other data as well.

8.Improve the living standard of rural population towards rurbanisation.

4.1.6 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.

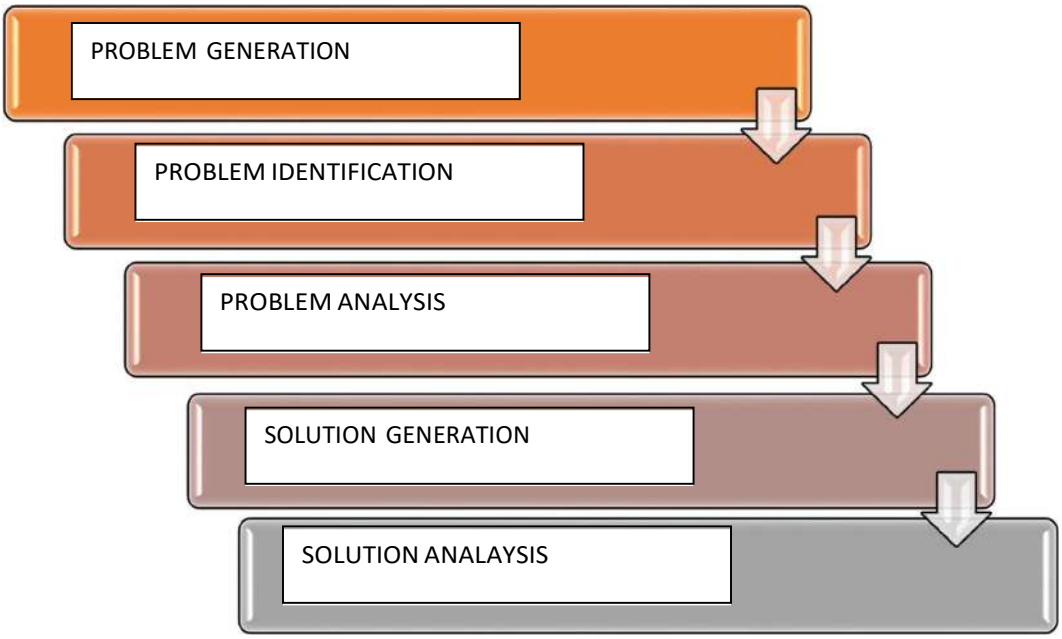

FIG.36: METHODOLOGY OF DEVLOPMENT OF VILLAGE

4.1.7 List Of Objects available related Civil/Electrical 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.

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4.2 Shela Study Area Profile

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

- Locality Name: **SHELA**
- City Name: **SANAND**
- District: **AHMEDABAD**
- State: **GUJARAT**
- Language: **Gujarati and Hindi**
- Time Zone: **IST (UTC+5:30)**
- Elevation / Altitude: **40 meters above sea level**
- Telephone code/ Std code: **02717**
- Post Office Name: **BOPAL**
- Pin Code: **380058**

4.2.1 Study Area Location

4.2.2 Base Location map, Land Map, Gram Tal Map

Shela is a village in Ahmedabad district, Gujarat.

FIG.37: LAND MAP OF SHELA (SATELLITE VIEW)

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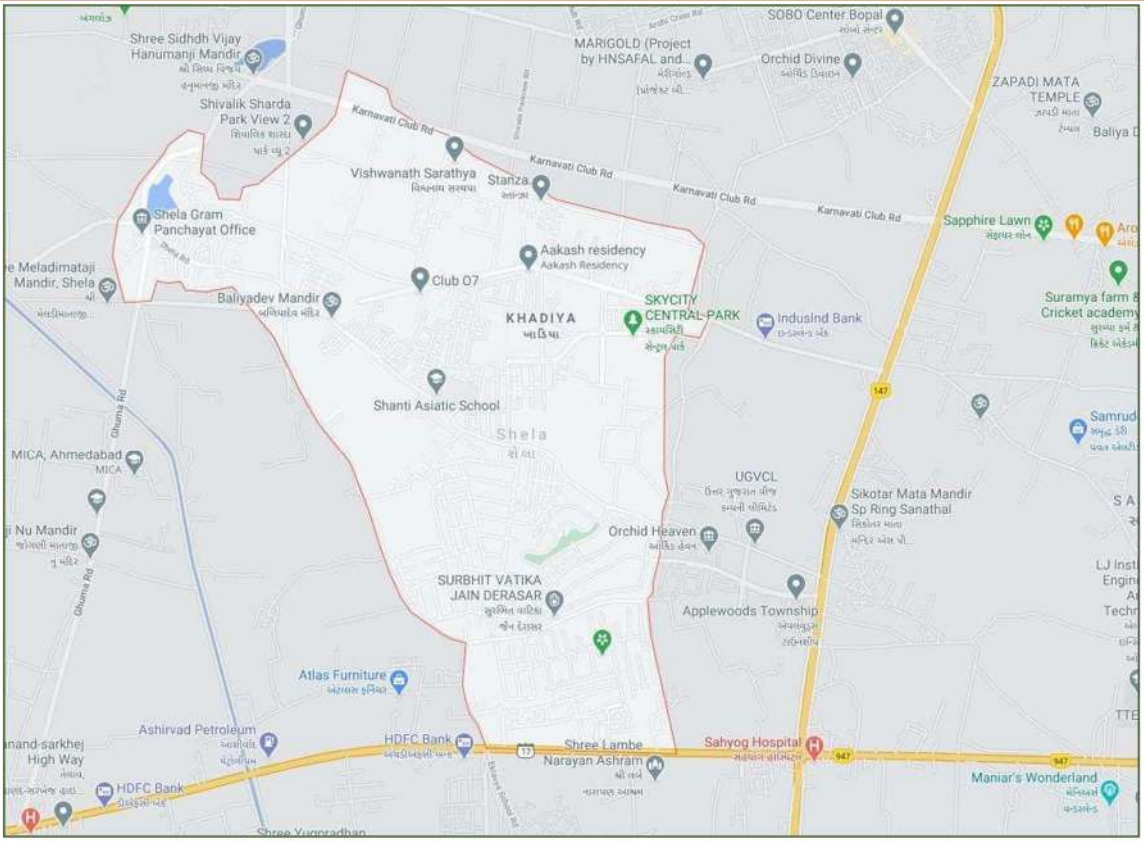

FIG.38: SHELA VILLAGE LOCATION

4.2.3 Physical & Demographical Growth

Source of water	1.	Pond & Water Tank
	2.	Well and tap water
	3.	Hand pumps
	4.	Rain water harvesting
Road network.	1.	Connect with main sardar Patel ring road is in good condition.
	2.	All internal street road is not to good condition.
Transportation Facility.	1.	This village is connected with main road so auto, GSRTC, and any vehicle are available for transportation.
	2.	Nearest Railway station in Ahmedabad kalupur (17km)
Housing conditions	1.	95% of house in village is pucca.
	2.	5% of hose in village is kuccha.
	3.	All houses are in good condition.
Electricity	1.	Government provide 24hr. electricity in this village.

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TABLE 11: CENSUS DETAILS OF SHELLA

	2001	2011
MALE	1875	2486
FEMALE	1225	2368
TOTAL	3100	4854

Physical & Demographical Growth

The village Shela is located 11 km away from sanand . Village is spread over an area of 2000 hectare. Village peoples are mainly engaged with agricultural, Major crops grown in village cotton, pearl millet, great millet.

Village is surrounded by many recreational and religious places. 15% of population is under 6-year age. Literacy rate is about 61%. Total 2996 population residing in village as per census 2011.

4.2.4 Economic generation profile / Banks

Major occupation groups in village are Agriculture, Labour work, Business/Job. Village has also two banks at distance from 2km.

Majority Crops taken in area are Jowar, Bajra, Maize, Wheat, cotton. In Sela village the labours concern with agricultural work is 15% of total population.

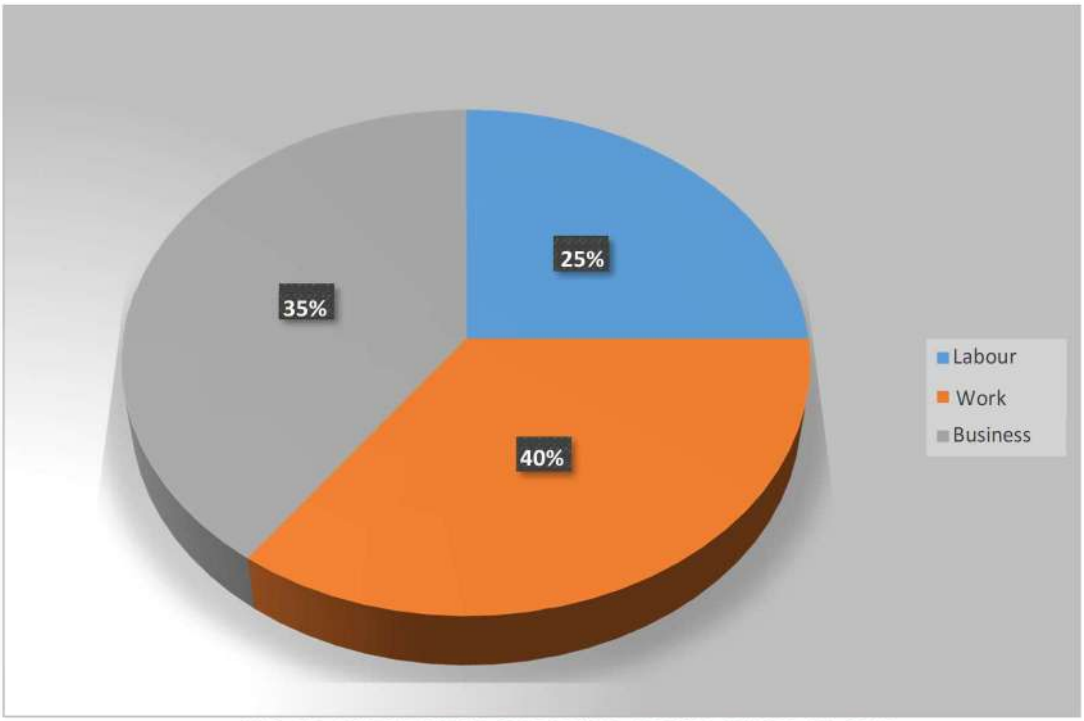

FIG.40: SHELA VILLAGE MAJOR OCCUPATION GROUP

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4.2.5 Social scenario -preservation of traditions, festivals, cuisine

We found that all citizens of this village are very much connecting with today's technology environment.

Because the residents of the villages belong to the lowest castes—Scheduled Tribe, Scheduled Caste, Other Backward Castes and General Castes—the area is deeply impoverished as these castes have historically been the most socially marginalized.

Following table is showing the sex ratio of female and male, literacy rate of village and cast vice population detail as per population data of 2011 of census India. Table no. 12 social information

Population	Total	Male	Female
Total	4854	2486	2368
In the age group 0- 6 years	400	250	150
Scheduled (SC)	700	400	300
Scheduled Tribes (ST)	76	30	46
Literate	1732	1400	332
Illiterate	250	150	100
Cultivators (main)	99	70	29
Agricultural labour	166	100	66
Total workers	1047	600	447
Non workers	1625	578	1050

TABLE 12: SOCIAL SCENARIO

The intangible heritage that the tribal population possesses including the traditional knowledge system contains many positive and productive elements that are really invaluable for the entire humanity.

Despite its significant role to integrate the society and enhance the sense of ownership to the concerned people and culture, intangible heritage faces serious threats for its existence.

In many parts of India fast pace of modernization has been taking toll on it. The danger also comes from the rapid process of globalization, homogenization, and pervading influence of western culture.

There is even more critical situation facing tribal culture: the intense pressure of adopting the cultural framework of ruling class elite within. Each human community has developed its own ways of life to satisfy human needs through the process of interacting with specific environment and the universe throughout the centuries.

These processes provide living communities with a sense of continuity with its previous generations and are important to cultural identity, as well as to the safeguarding of cultural diversity and creativity of humanity.

There are many challenging factors that are quickly bringing permanent changes in the present day and every one of us should be primarily concerned with the preservation of human cultural inheritance in its multiplicity of forms and manifestations.

There is thus an urgent need to preserve intangible heritage in order to contribute to the development of mankind.

4.3 Methods for data collection

4.3.1 Describe Methods for data collection

Various modes and methods adopted for the data collections are;

1.Visits and interviews

2.Demographic data collections.

3.Surveys and Questionnaire.

4.Details from the Gram Panchayat.

5.Development profiles.

4.3. Primary survey details

TABLE 13: HEALTH FACILITIES

Sr. No.	Description	Availability or nearby distance
1.	Sub health center	1 Nos.
2.	Govt. hospital	2.5Km
3.	Private Clinic	4 Nos.
4.	Surgical doctor	1 Nos.
5.	Blood bank	3 Kms
6.	Ambulance facilities (108)	1 Nos
7.	Medical shop	1 Nos
8.	Aayush health facilities	available

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TABLE 14: EDUCATION FACILITIES

Sr. No.	Descriptions	Information/ Detail
1.	Anganwadi/Play group	10 Nos.
2.	Primary school (std. 1 to 8)	3 Nos.
3.	Secondary 7 & Higher secondary	1 Nos.
4.	Transportation facility for students	School Bus
5.	Science stream	Unavailable
6.	College nearby village	6 km away
7.	Nearby I.T.I. center	5 km away
8.	Nearby vocational training center	6 km away

4.3.3 Average size of the House –geo -tagging of hous

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 centre is located nearby. There is about 4500 houses out of which 4100 are residential.

4.3.4 No of Human being in One House

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

4.3.5 Which Material used locally in the village and Material Out Sourced by the villagers

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

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.

4.3.7 Labour work doing

According to the administration records, the village code of Shela is 380058. The village has 500 families. The Negative portion is that illiteracy rate of Shela village is Here 250 out of total 4854 people are illiterate. Male illiteracy here is as 150. Among the females the illiteracy 100 in this village.

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4.3.8 Technology Mobile/ WIFI / Internet Usage Details. In %

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

4.3.9 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.

4.3.10 Socio-Cultural Facilities , Public Garden /Park/Playground /Pond/

4.3.11 Other Recreation

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

FIG.40: SHELA VILLAGE DIRECTION

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4.4 Infrastructure Details (With Exiting Photograph)

4.4.1 Drinking Water / Water Management Facilities

There are Two water tanks available in Bahutha village.Overhead tank is 30,000 litre capacity.Under ground tank capacity is 50,000 litre.Total water storage capacity is 80,000 litre in the village but is not sufficient for village as per populstion of village.Drinking water is adequate and also has a storage capacity.For domestic and drinking purpose Panchayat collect water from dug well and lake.

4.4.2 Drainage Network / Sanitation Facilities

Village has good condition of drainage network.Closed drainage system available in village.Village doesn‘t have any public toilet in village.

4.4.3 Transportation & Road Network

Village are covered with all-weather road and its internal street road R.C.C. road. transportation network is good in village.railway station near Alindra 12 km away from village. There is no bus station in the village Gamtal.People use owns two-wheeler or four-wheeler are used for travelling through main road.

4.4.4 Housing condition

The ratio of kuccha to pucca house is 0.25%. Condition of house is well maintained and properly constructed in line. Houses have basic facility like water supply tap, own toilet, clean house, electricity line etc.

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

In village, deficiency of social infrastructure like community hall, library, medical store, recreation infrastructure etc.

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

In village existing public building are panchayat building, school, branch post office, etc.all the structure need to reconstruction and maintenance.

4.4.7 Technology Mobile/ WIFI / Internet Usage Details

In village 65 to 70% use smart phone.20 to 25% use a normal phone and rest of people are not use phone.

4.4.8 Sports Activity as Gram Panchayat

No activity of sports is conducted by gram panchayat but school are conducted a sport activity during a sport weak or any function.

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FIG.41: SHELA VILLAGE ENTRY

FIG.42: COMMUNICATION WITH SARPANCH

FIG.43: ROUGH ROAD

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FIG.44: SHELA PRIMARY SCHOOL

FIG.45: SHELA GRAM PANCHAYAT

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FIG.46: ANGANWADI SHELA

FIG.45: PANDIT DIN DAYAL SASTA ANAJ BHANDAR

FIG.48: PRIVATE PRIMARY HEALTH CENTER AND MEDICAL SHOP

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FIG.49: NATURAL RESOURCES

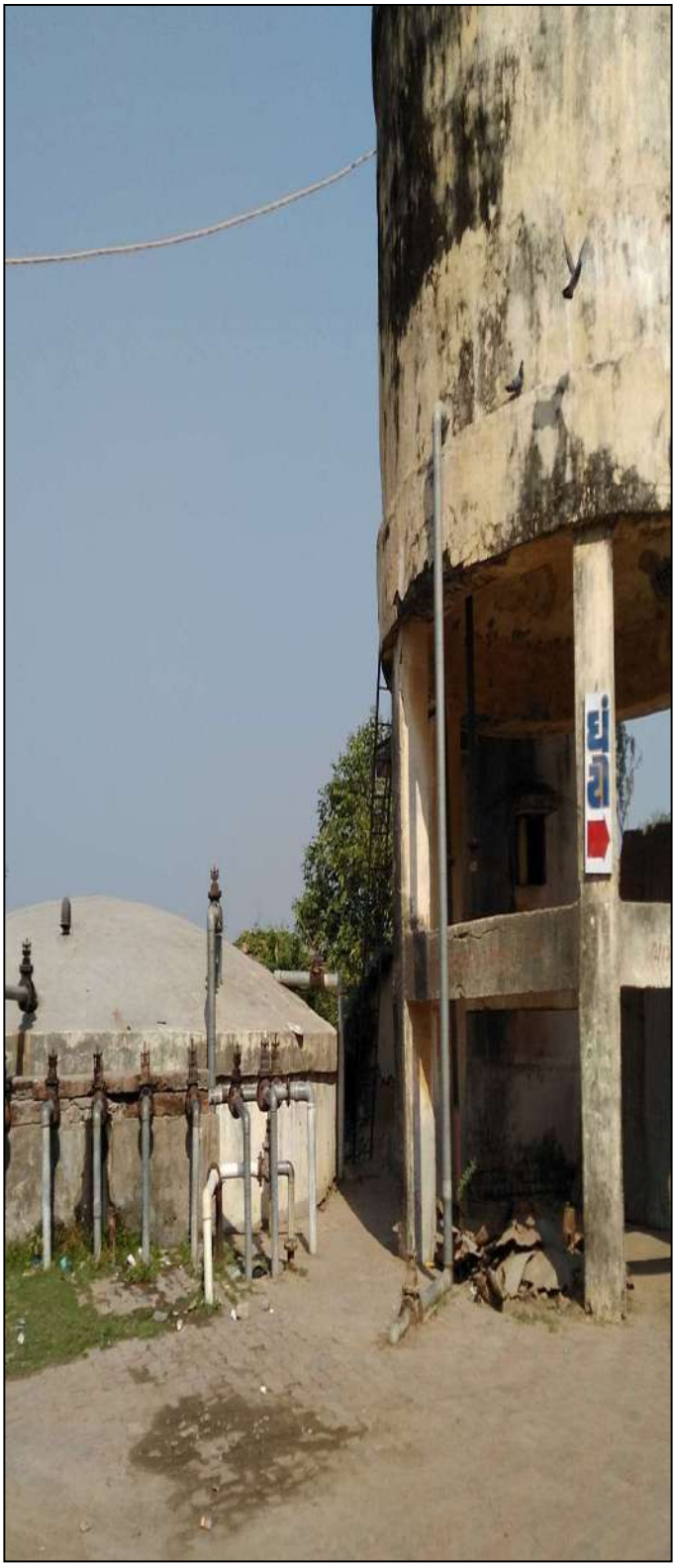

FIG.50: WATER TANK

FIG.51: MOBILE NETWORK TOWER

FIG.52: ELECTRICITY CABLE

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FIG.53: TEMPLE OF SHELA VILLAGE

FIG.54: SOLAR LIGHT

FIG.55: ANIMAL WELFARE

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4.4.9 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.

4.4.10 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.

4.4.11 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.

4.5 Electrical Concept

Renewable electricity generation is an essential part of a sustainable energy future. An increasing number of governments are subsidizing the deployment of renewable energy technologies for electricity generation and the growth of domestic industries. To be sustainable, electricity systems must recover operating costs, invest for the future, provide

reliable electricity and meet environmental and social objectives.. Electrical concepts includes the efficient energy principles.

4.5.1 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.

4.5.2 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 a field.

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.

Importance of Irrigation

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

1. 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.

2. Irrigation provides the moisture that is crucial during the germination phase of the plant's life cycle.

3. Irrigation also makes the soil more fertile (by adding moisture to it) and easier to plough.

4.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,

1. 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.

2. 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.

3. 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.

4. 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.

4.5.3 Electricity Facilities with Area

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

4.6 Existing Institution like - Village Administration – Detail Profile

4.6.1 Bachat Mandali

Banks are present in the villages where villagers can deposit and collect there money. Also ATM's are there in the village from which the money can be collected for local expense.

4.6.2 Dudh Mandali

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

4.6.3 Mahila Forum

No Mahila forum in village.

4.6.4 Plantation for the Air Pollution

Tree plantation programs are organized regularly by the Village Administrations.

4.6.5 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.

4.6.6 Agricultural Development

The term Green Revolution' refers to a sustained and continuous increase in agricultural productivity 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 programmes 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 developing nations.

4.6.7 Any Other

National Rural Employment Programme, Prime Minister Rojgar Yojana(PMRY), Balika Samridhdhi Yojana.

CHAPTER 5 .....SUSTAINABLE TECHNICAL OPTIONS (PART 1)

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.

Economic. The development of the economic or productive base of any society, which will produce the goods and materials required for life. **Social.** The provision of a range of social amenities and services (i.e., health, education, welfare) which care for the non-productive needs of a society. **Human**. The development of the people themselves, both individually and communally, to realize their full potential, to use their skills and talents, and to play a constructive part in shaping their own society.

5.1.1 Advance construction techniques

The construction industry is experiencing more demand than ever before, given that urbanization is taking place at a faster pace the world over. The role that construction equipment plays therefore is of paramount importance. The more a company understands how to derive the maximum efficiency from each piece of equipment it has, the better its project execution becomes.

1. **Earthmoving & Mining**: Construction equipment that is capable of lifting huge quantities of earth in one scoop falls in this category. While bulldozers and articulated trucks are part of this kind, they are quite versatile and are widely used in highway construction projects. Some of the other specialized equipment is:

- Surface Mining equipment, which includes electric shovels for mineral extraction, drills, mass excavators and giant draglines, which are extensively used in civil engineering.
- Underground mining equipment, while similar, needs to function under different space parameters. Advanced pieces of such machinery include scalers, scissor lifts, and continuous miners.

2. Excavation: Any kind of operation that requires digging, excavation, making trenches, etc. falls under this category. Many of the examples of machinery that are grouped under this require a great degree of flexibility and, because of the limited area they might be operating under. The most popular and versatile of the lot is the backhoe loader. Apart from this, the other kinds that find widespread use are dredges (which are used in waterways to access sediments under water), excavators (in forestry, pipelines, and even mining) and trenchers for laying underground cable networks or to facilitate sewer systems.

3. Lifting: Since the construction industry involves a great deal of hoisting material, people and other equipment, there are numerous specialized types of machines for this purpose, although some lifting can be done using excavators etc. They are developed taking into account various factors like machine capacity at specific heights, the speed of wind,radius, etc. The most popular equipment in this category includes boom trucks, forklifts, manlifts (specially designed for greater height reach without any impediments), cranes of many specialized varieties and pipe layers.

4. Roads: Building a road is a project that necessitates the use of a rather wide variety of heavy machinery. Earthmoving, clearing areas, lifting work (especially when building a structure like a bridge) and paving are all activities that need different equipment. Cold planers (for milling asphalt), compactors (for ensuring a smooth, eve surface), curb machines, and crushing machines are just a few examples.

5. Railroads: The use of several types of highly specialized machinery is needed when constructing railroads. Many factors like high cargo levels, passenger transit, energy consumption and safety have to be taken into consideration; so the equipment needed to serve these purposes has to be just right. Some of the commonly used machinery includes ballast tampers and ballast regulators. While the former help to render the railway tracks more durable and to facilitate perfect track alignment, the latter is aimed at distributing the gravel underneath the tracks more evenly.

5.1.2 Causes Prevention And Repair of Cracks In Building / rectification of building tilt / rehabilitation techniques

Repair and rehabilitation of rapidly deteriorating structures is a matter of concern for most countries in the world. Deterioration is observed in the form of cracking and corrosion It is very difficult to assess in totality the causes of damage, mapping the extent of damage, proper corrective prescription, prediction of residual life with and without repair measures, instrumentation, monitoring and maintaining the health, and, most importantly, to strike a cost benefit ratio of the repair. This makes the industry large and multifaceted and there is substantial amount of

knowledge available on the issues. Fibre reinforced polymer (FRP) composites such as glass fibre reinforced polymer (GFRP) and carbon fibre reinforced polymer (CFRP) are being widely used for enhancing the load carrying capacity of reinforced concrete structural members. These composites consist of high strength fibres bonded in a resin matrix with the fibres as

the main load carrying elements, whereas the resin or polymer matrix acts as a load transfer medium and protects the fibre from environmental damage.

5.1.3 Disaster management in natural calamities

Disaster, as defined by the United Nations, is a serious disruption of the functioning of a community or society, which involve widespread human, material, economic or environmental impacts that exceed the ability of the affected community or society to cope using its own resources. Disaster management is how we deal with the human, material, economic or environmental impacts of said disaster, it is the process of how we prepare for, respond to and learn from the effects of major failures‖. Though often caused by nature, disasters can have human origins. According to the International Federation of Red Cross & Red Crescent Societies a disaster occurs when a hazard impacts on vulnerable people. The combination of hazards, vulnerability and inability to reduce the potential negative consequences of risk results in disaster.

5.1.4 Various types of Roads / Intelligent transport system

Mode of transport is a term used to distinguish between different ways of transportation or transporting people or goods. The different modes of transport are air, water, and land transport, which includes Rails or railways, road and off-road transport. Other modes also exist, including pipelines, cable transport, and space transport. Human-powered transport and animal-powered transport are sometimes regarded as their own mode, but never fall into the other categories. In general, transportation is used for moving of people, animals, and other goods from one place to another. The means of transport, on the other hand, refers to the vehicles necessary for transport according to the chosen mode (airplane, ship, truck and rail). Each mode of transport has a fundamentally different technological solution, and some require a separate environment. Each mode has its own infrastructure, vehicles, and operations.

5.1.5 Various type of Environmental Factors

Environmental factors found to associate with social status have important effects on the development, morphology, and function of various brain networks supporting language, attention, executive function, and stress responses. Whereas results may vary based on how researchers characterized SES, these findings indicate that future research integrating neuroimaging methodologies and rigorous examinations of socioeconomic factors should lead to a better understanding of the relationship between social status and brain function. To accomplish this goal, further research may also benefit from investigating the impact of mechanisms related to prenatal and genetic influences. Furthermore, better understanding the impact of social status on social interactions may provide insights into its pervasive role in multiple facets of our lives. Indeed, recent functional neuroimaging investigations suggest that one's own social status and the social status of others shape fundamental social cognitive processes.

5.1.6 E –waste disposal / Any Waste disposal

The problem of e-waste has forced governments of many countries to develop and implement environmentally sound management practices and collection schemes for E-waste management, with a view to minimize environmental impacts and maximize re-use, recovery and recycling of valuable materials. In developed countries, e-waste management is given high priority countries, while in developing countries, it is exacerbated by completely adopting or replicating the e-waste management of developed countries and several problems including, lack of investment, technological, financial, technically skilled human resources, lack of infrastructure, little available information on the e-waste situation, recovery of valuable materials in small workshops using rudimentary recycling methods, lack of awareness on the impacts of e-waste, absence of appropriate legislations specifically dealing with e-waste, approach and inadequate description of the roles and responsibilities of stakeholders and institutions involved in e-waste management, etc.

5.1.7 Corrosion Mechanism, Prevention & Repair Measures of RCC Structure

Corrosion is the result of a chemical reaction on metals causing the metal to oxidize. Most people are familiar with water (wet) corrosion, however, there are multiple factors that influence corrosion. Some of these factors are:

- Type of metal – composition, grain boundary, surface condition, microstructure
- Environmental – where is the metal located on the asset, is it subject to temperature variations, conductivity, heat transfer rates, humidity, wet and dry cycles
- Stress – how the asset is being used, what comes in contact with the metal (other objects, chemicals), engineering stress load.
- Physical – reactivity to chemicals, surface coating, frequency of contact with other surfaces, chemicals or residue(dirt/dust/fuels)

The most common forms of corrosion include:

- General or uniform corrosion – the least damaging of corrosion forms and occurs over a wide area.
- Pitting – can be the result of an impurity or penetration of the metal surface.
- Galvanic – the interaction of two or more dissimilar metals, very common HVAC issue when brass and steel or copper and steel meet.
- Microbiologically Influenced Corrosion (MIC) – the most severe and threatening form of corrosion caused by microbiological agents.
- Corrosion due to wear and tear – a gradual deterioration of the metals surface. found at joints, elbows or other abrasions.

The management of corrosion can be handled in many ways. However, approaches proposed for the corrosion protection of reinforcing steel bars in concrete do not replace the significance of high-quality concrete as the primary source of barrier protection against corrosive species. Steel in concrete can be protected from corrosion in three main ways:

(1) seal the surface of the concrete to minimize the ingress of chloride ions, carbon dioxides, and water,

(2) modify the concrete to reduce its permeability, and

(3) protect the reinforcing bars to reduce the effects of chlorides and carbon dioxide when they do reach the steel. This chapter briefly discusses the last method of protection.

Civil engineering is traditionally broken into a number of sub-disciplines. It is considered the second-oldest engineering discipline after military engineering and it is defined to distinguish non- military engineering from military engineering. Civil engineering takes place in the public sector from municipal through to national governments, and in the private sector from individual homeowners through to international companies.

Deep wells with submersible pumps

A deep well is a sunken wellbore (borehole) extending more than 25 feet underground used to extract water, crude oil or other natural resources. Deep wells require stronger pumps than shallow wells. A submersible pump (or sub pump, electric submersible pump (ESP)) is a device which has a hermetically sealed motor close-coupled to the pump body. The whole assembly is submerged in the fluid to be pumped. The main advantage of this type of pump is that it prevents pump cavitation, a problem associated with a high elevation difference between pump and the fluid surface. Submersible pumps push fluid to the surface as opposed to jet pumps which create a vacuum and rely upon atmospheric pressure.

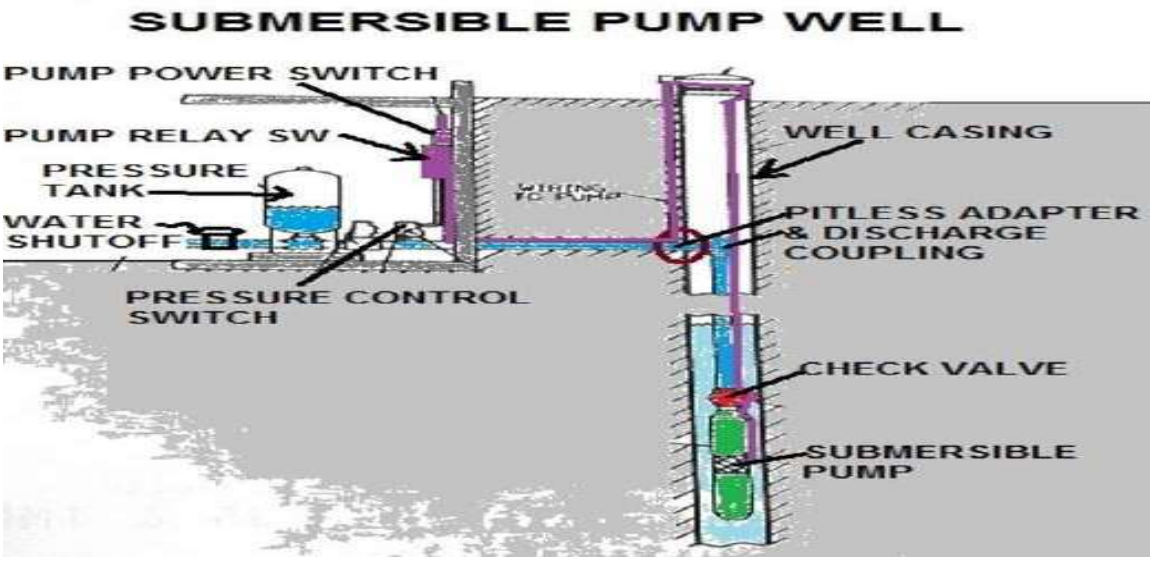

FIG.56: DEEP WELL

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Shallow wells

A well is an excavation or structure created in the ground by digging, driving, or drilling to access liquid resources, usually water. The oldest and most common kind of well is a water well, to access groundwater in underground aquifers.

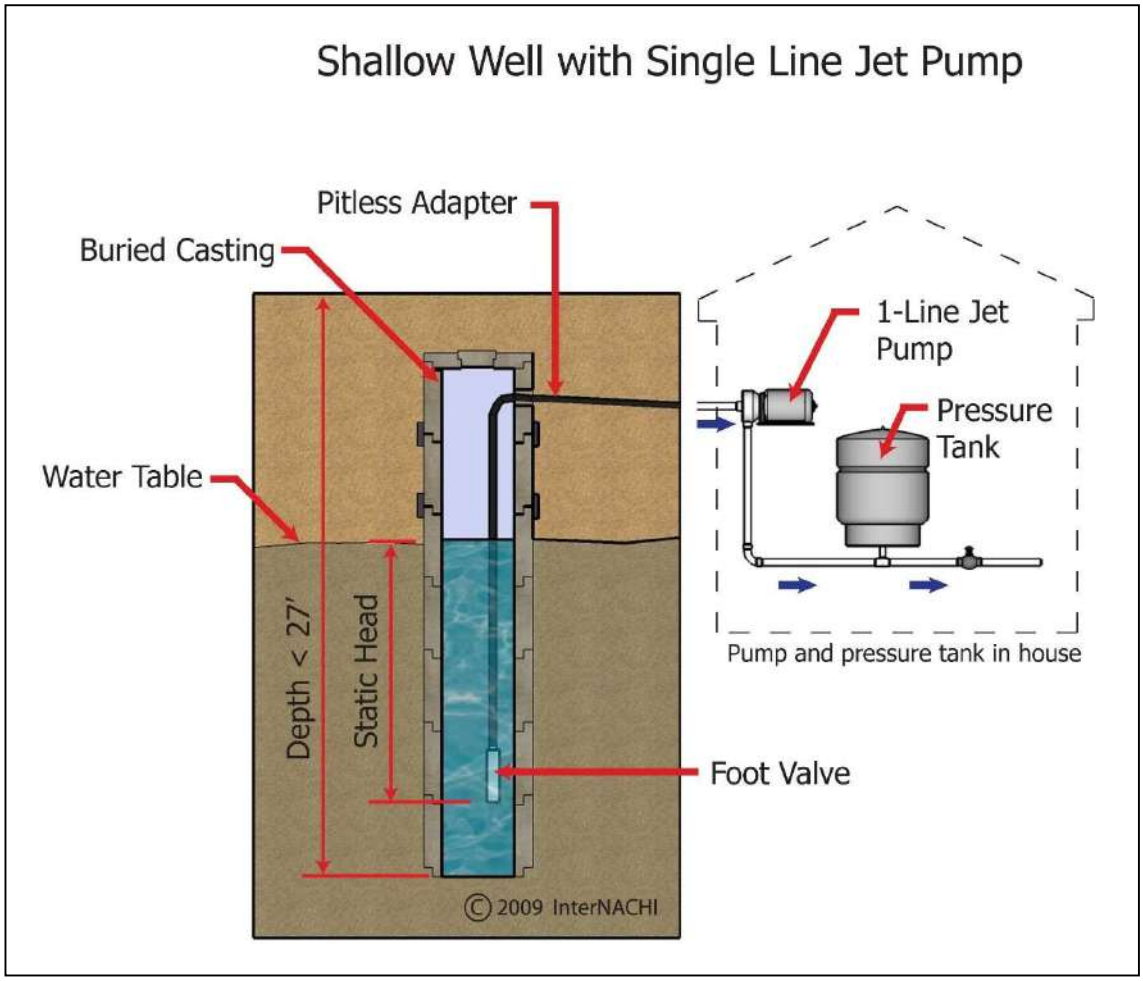

FIG.54: SHALLOW WELL

Rainwater harvesting

Rainwater harvesting (RWH) is a simple method by which rainfall is collected for future usage. The collected rainwater may be stored, utilised in different ways or directly used for recharge purposes. With depleting groundwater levels and fluctuating climate conditions, RWH can go a long way to help mitigate these effects. Capturing the rainwater can help recharge local aquifers, reduce urban flooding and most importantly ensure water availability in water-scarce zones. Though the term seems to have picked up greater visibility in the last few years, it was, and is even today, a traditional practice followed in rural India. Some ancient rainwater harvesting methods followed in India include medakas, ahar pynes, surangs, taankas and many more.

This water conservation method can be easily practiced in individual homes, apartments, parks, offices and temples too, across the world. Farmers have recharged their dry borewells, created water banks in drought areas, greened their farms, increased sustainability of their water resources and even created a river. Technical know how for the rooftop RWH with direct storage can be availed for better implementation. RWH An effective method in water scarce times, it is also an easily doable practice.

FIG.58: RAINWATER HARVESTING SYSTEM

Deep wells with submersible pumps

To design a well, it is necessary to decide what materials will be used and how they will be put together. This includes determining:

• the size and shape of the hole;

• which digging and lining methods will be followed;

• how much water needs to be available, and, therefore, how deep the bottom section should go into the aquifer;

• how the top section should be constructed to best protect the well from contamination, while allowing easy access to water by those who will use the well;

• the anticipated well depth.

This chapter discusses the decisions that must be made and presents options for consideration.

Well Shape

The shape of the well is what it would look like if you were looking straight down into it.

Well Size

The size of the well is a measure of how wide it is. Some holes are very large, and some are very small. The size will be largely determined by: (1) the way it is excavated, (2) the materials used to line it, and (3) the purpose of the well.

The size of the round hole is usually expressed by its diameter, a measurement from one edge of the hole through the midpoint of the well to the other side of the circle. (See Figs. 3-2 and 3-3.) Although wells can be dug in any shape, almost all wells are round. The reason for this is that a round well produces the greatest amount of water for the least amount of work. Also, a round lining is the strongest that can be built for the smallest quantity of materials. Thus, while other well shapes have been used without problems, a round shape enables the builder to get the most from available time, money, and materials.

Square or rectangular wells are usually dug where materials to be used in lining the well necessitate such a shape. This is most often the case when flat wood board" are the only lining materials available. Wood, however, is not recommended for several reasons which will be discussed later.

Submersibles are more efficient than jet pumps. Hydraulic submersible pumps (HSP's) use pressurised fluid from the surface to drive a hydraulic motor downhole, rather than an electric motor, and are used in heavy oil applications with heated water as the motive fluid.

Shallow wells with lined walls and covers

Deep Well Submersible Pumps only need to be primed once because they are submerged in the water being pumped and avoid pump cavitation, which damages the pump and decreases performance. Deep Well Pumps can be used in wells as deep as 300' below ground and work by pushing the fluid to the surface of the well.

5.2 Concept (Electrical)

Electricity is a form of energy and we need it for just about everything! Almost all of our modern conveniences are electrically powered. Efficient energy consumption system is the need of hour.

5.2.1 Local / Out Source of Energy

The three major categories of energy for electricity generation are fossil fuels (coal, natural gas, and petroleum), nuclear energy, and renewable energy sources. Most electricity is

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generated with steam turbines using fossil fuels, nuclear, biomass, geothermal, and solar thermal energy. Other major electricity generation technologies include gas turbines, hydro turbines, wind turbines, and solar photovoltaics.

5.2.2 Auto Intensity Controlled Solar LED Street Light / High Power LED

A street light, light pole, lamppost, street lamp, light standard or lamp standard is a raised source of light on the edge of a road or path. When urban electric power distribution became ubiquitous in developed countries in the 20th century, lights for urban streets followed, or sometimes led. Many lamps have light-sensitive photocells that activate the lamp automatically when needed, as there is little to no ambient light: dusk, dawn, or the onset of dark weather. This function in older lighting systems could have been performed with the aid of a solar dial. Many street light systems are being connected underground instead of wiring from one utility post to another.

5.2.3 Automatic Water Plant System / Designing of DC Motor Speed Control Unit / Irrigation Water Pump Controller for Illiterates Using GSM

Irrigation is defined as artificial application of water to land or soil. Irrigation process can be used for the cultivation of agricultural crops during the span of inadequate rainfall and for maintaining landscapes. An automatic irrigation system does the operation of a system without requiring manual involvement of persons. Every irrigation system such as drip, sprinkler and surface gets automated with the help of electronic appliances and detectors such as computer, timers, sensors and other mechanical devices.

5.2.4 Central Control Unit for Irrigation Water Pumps Construction

An automatic irrigation system does the work quite efficiently and with a positive impact on the place where it is installed. Once it is installed in the agricultural field, the water distribution to crops and nurseries becomes easy and doesn't require any human support to perform the operations permanently. Sometimes automatic irrigation can also be performed by using mechanical appliances such as clay pots or bottle irrigation system. It is very hard to implement irrigation systems because they are very expensive and complex in their design. By taking some basic points into considerations from expert's support, we have implemented some projects on automatic irrigation system by using different technologies. Irrigation is done through the mode of controlled furrow and sprinkler system in some regions. Central controlled units may be designed for the effective irrigation supply.

5.2.5 Design of Sensing Soil Moisture Content By Auto Irrigation System

Soil moisture sensors measure the volumetric water content in soil.[1] Since the direct gravimetric measurement of free soil moisture requires removing, drying, and weighing of a sample, soil moisture sensors measure the volumetric water content indirectly by using some other property of the soil, such as electrical resistance, dielectric constant, or interaction with neutrons, as a proxy for the moisture content.

The relation between the measured property and soil moisture must be calibrated and may vary depending on environmental factors such as soil type, temperature, or electric conductivity. Reflected microwave radiation is affected by the soil moisture and is used for remote sensing in hydrology and agriculture. Portable probe instruments can be used by farmers or gardeners.

Soil moisture sensors typically refer to sensors that estimate volumetric water content. Another class of sensors measure another property of moisture in soils called water potential; these sensors are usually referred to as soil water potential sensors and include tensiometers and gypsum blocks.

5.2.6 Energy Meter Reading with Load Control Using GSM

• Wireless GSM/GPRS systems With City Light software for constant monitoring, controlling and logging of switching on time, RTC data, electricity parameters and faults.

5.2.7 Street Light Monitoring and Control System

• Wireless GSM/GPRS systems With City Light software for constant monitoring, controlling and logging of switching on time, RTC data, electricity parameters and faults.

• Low annual operating cost type GSM base are among the most inexpensive wireless technologies available. And Low initial costs of installation As GSM wireless, there is no need to establish cable connection and is easily expandable to new areas and cities. Also it required no government licensing.

• Fast detection of errors by feeder pillar and along with GSM communication the street lights are always online any fault in street lighting electrical circuits is known to the operator within sort time. Simultaneously User settable Mobil no of supervisor and technician for instantaneous fault reporting.

• Unit self generate data massage like, ON time, Off Time, Power Down time, Auto mode, Manual Mode, Volt Fault, Over Current Fault, Short Circuit Fault, Neutral Fault, RTC Fault, Memory Fault, Low Ampere Fault, Door Open, Relay Fault, Calibration Data, and acknowledge the massage received from master like E Stop, Test Mode, Live Status, E Profile, parameter update, all this massage contains All electrical parameter with real- time clock date and time. it sends to City Light software through GSM/GPRS systems.

Various electrical components can be designed for the sustainable development.

Solar thermal collector

Solar thermal collectors transform solar radiation into heat and transfer that heat to a medium (water, solar fluid, or air). Solar water heating (SWH) or solar hot water (SHW) systems have been well established for many years, and are widely used throughout the world. In a close- coupled SWH system the storage tank is horizontally mounted directly above the solar collectors on the roof. No pumping is required as the hot water naturally is into the tank through passive heat exchange. In a —pump-circulated‖ system the storage tank is ground or floor mounted below the level of the collectors; a circulating pump moves the

water or heat transfer fluid between the tank and the collectors. There are multiple types of solar thermal collectors: Evacuated tube collectors are the most efficient but most costly type of hot water solar collectors. These collectors have glass or metal tubes with a vacuum, allowing them to operate well in colder climates. Batch solar water heaters, also called integral collector-storage systems, have storage tanks or tubes inside an insulated box, the south side of which is glazed to capture the sun's energy. Flat plate collector, a box covered by glass or plastic with a metal absorber plate on the bottom. The glazing, or coating, on the absorber plate helps to better absorb and retain heat. Unglazed flat-plate collectors, typically made from rubber, are primarily used for heating pools. Air collectors are used primarily for space heating in the home. Flat-plate solar collector durable, weatherproof boxes that contain a dark absorber plate located under a transparent cover are still the most common type of collector used for water heating in many countries despite being inferior to evacuated tube collectors in many ways.

zero emission generation methods

Zero emission refers to an engine, motor, process, or other energy source, that emits no waste products that pollute the environment or disrupt the climate. Vehicles and other mobile machinery used for transport (over land, sea, air, rail) and for other uses (agricultural, mobile power generation, etc.) contribute heavily to climate change and pollution, so zero emission engines are an area of active research. These technologies almost in all cases include an electric motor powered by an energy source compact enough to be installed in the vehicle. These sources include hydrogen fuel cells, batteries, supercapacitors, and flywheel energy storage devices.

In some cases, such as compressed air engines, the engine may be mechanical rather than electrical. This mechanical engine is then powered by a passive energy source like compressed air, or a combustible non-polluting gas like hydrogen. The above engines can be used in all vehicles, from cars to boats to propeller airplanes. For boats, energy sources such as nuclear power and solar panels can also be a viable option, in addition to traditional sails and turbo sails. A concept like vegetable oil economy produces emissions.

Wind Power

Wind turbines work on a simple principle: instead of using electricity to make wind like a fan wind turbines use wind to make electricity. Wind turns the propeller-like blades of a turbine around a rotor, which spins a generator, which creates electricity.

Wind is a form of solar energy caused by a combination of three concurrent events:

1.The sun unevenly heating the atmosphere

2.Irregularities of the earth's surface

3.The rotation of the earth.

Wind flow patterns and speeds vary greatly across the United States and are modified by bodies of water, vegetation, and differences in terrain. Humans use this wind flow, or motion energy, for many purposes: sailing, flying a kite, and even generating electricity.

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The terms "wind energy" and "wind power" both describe the process by which the wind is used to generate mechanical power or electricity. This mechanical power can be used for specific tasks (such as grinding grain or pumping water) or a generator can convert this mechanical power into electricity.

A wind turbine turns wind energy into electricity using the aerodynamic force from the rotor blades, which work like an airplane wing or helicopter rotor blade. When wind flows across the blade, the air pressure on one side of the blade decreases. The difference in air pressure across the two sides of the blade creates both lift and drag. The force of the lift is stronger than the drag and this causes the rotor to spin. The rotor connects to the generator, either directly (if it' a direct drive turbine) or through a shaft and a series of gears (a gearbox) that speed up the rotation and allow for a physically smaller generator. This translation of aerodynamic force to rotation of a generator creates electricity.

Wireless Data Acquisition System For Energy Tapping Identifier

Data acquisition systems, as the name implies, are products and/or processes used to collect information to document or analyse some phenomenon. In the simplest form, a technician logging the temperature of an oven on a piece of paper is performing data acquisition.

As technology has progressed, this type of process has been simplified and made more accurate, versatile, and reliable through electronic equipment. Equipment ranges from simple

recorders to sophisticated computer systems, or even smart phones turned into portable data acquisition systems.

Data acquisition products serve as a focal point in a system, tying together a wide variety of products, such as sensors that indicate temperature, flow, level, or pressure.

Testing of Electrical Loads Life Cycle By Down Counter

A desired number is entered through a keypad interfaced to a microcontroller of 8051 family. Upon activation, the system counts down one in each second till the set number reaches zero. A relay switches the load ON & OFF for every count thus testing the life cycle of the product.

The working life of many products such as lamps depends on the number of ON/OFF cycles it encounters. This project is designed to be used in industries for testing the life cycle of such electrical loads (lamps, motors etc) using a down counter.

This proposed system uses microcontroller of 8051 family with a keypad interfaced to it to enter a required number. 7-segment displays are used for displaying the number /count. Once the circuit is powered, the counter is set using the keypad to count down anywhere from 999 to 0. The counter starts decrementing from the set number to 0 per each count and simultaneously making the load (i.e. bulb in this circuit) turn ON and OFF by a relay. Reaching the zero count it finally remains OFF.

CHAPTER 6 .....SWATCHH BHARAT ABHIYAN

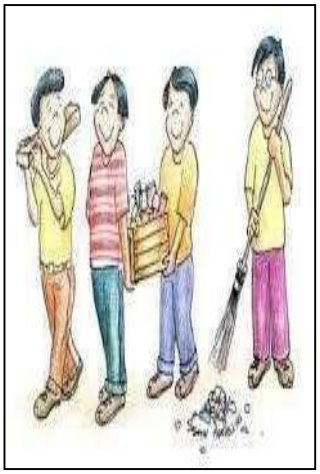
6.1 Which type of swatchhta needed in your village explaining Existing Situation with photograph

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 Jalshakti 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. These 3 bins are

Biodegradable, Recyclable and Others. The waste management department should help in implementing this system.



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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,

1. Motivation of the people for the clean India mission.
2. Slogans and Poster preparations and distribution within the villages.
3. Door to door awareness programs and seminars by students to be done in the 8th semester.
4. Village administrative officials will be given some suggestions for the improvement of the Clean-India Mission.
5. Persons from the NGO's will be met and will be given some suggestions
6. Village is going through the policies of the Clean India Mission of Government of India and also of the State Government.
7. Village female and girls will be motivated through programs organised by the Sarpanch.

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

Major Activities have been done by the students:

1. 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".

2. Door to door meetings of the students within the villages.

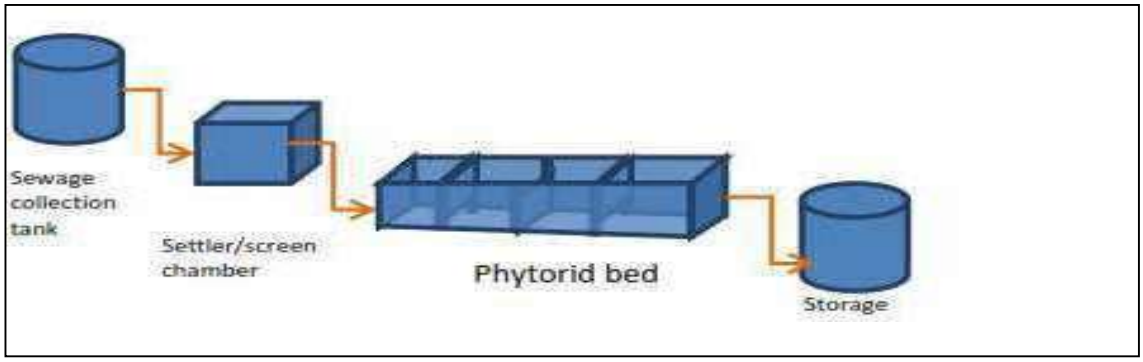

FIG. 61: SBM PROGRAMME

FIG. 62: SYSTEM OF SEWAGE PLANT

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CHAPTER 7 .....VILLAGE CONDITION DUE TO COVID 19

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

In a COVID-19 pandemic there are lots of difficulties comes and gone but all villagers took care about it.Gram panchayat of the village took a proper care of sanitation and hygine.In Lock down situtation all the government guide line are followed in village. All the road are two-three time a week taking care of cleaning work on daily basis and proper spary of DDT powder are done by gram panchayat.

In lock down time there is no entry are allowed in the village all the road are closed for out siders of village.Sarpanch and health workers spred awareness in people about what is COVID-19 pandemic is and what they should taking care for the not getting effected from virus.

7.2 Activities Done by Students for allocated village Clean with Photograph

7.3 Any other steps taken by the students / villagers

Awareness about COVID-19 transmission and protective measures

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

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CORONAVIRUS Information BBC

Coronavirus: What you need to do

Wash your hands

Use a tissue for coughs

Avoid touching your face

The vaccines

The vaccines **cannot give you COVID-19:**

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CHAPTER 8 .....SUSTAINABLE DESIGN PLANING PURPOSAL (PROTOTYPE DESIGN) PART 1

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

Proposed Design in the Villages:

1. Design of Public Garden (CI)
2. Design of Public Health centre (CI)
3. Design of Bio gas Plant (CI)
4. Design of Public Toilet (CI)
5. Design of Public Librar (CI)
6. Design of Rainwater Harvesting (CI)
7. Design of solar panel (EE)
8. Design of smart bin concept (EE)
9. Design of WiFi tower (EE)

8.1 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.

Design of Public Garden

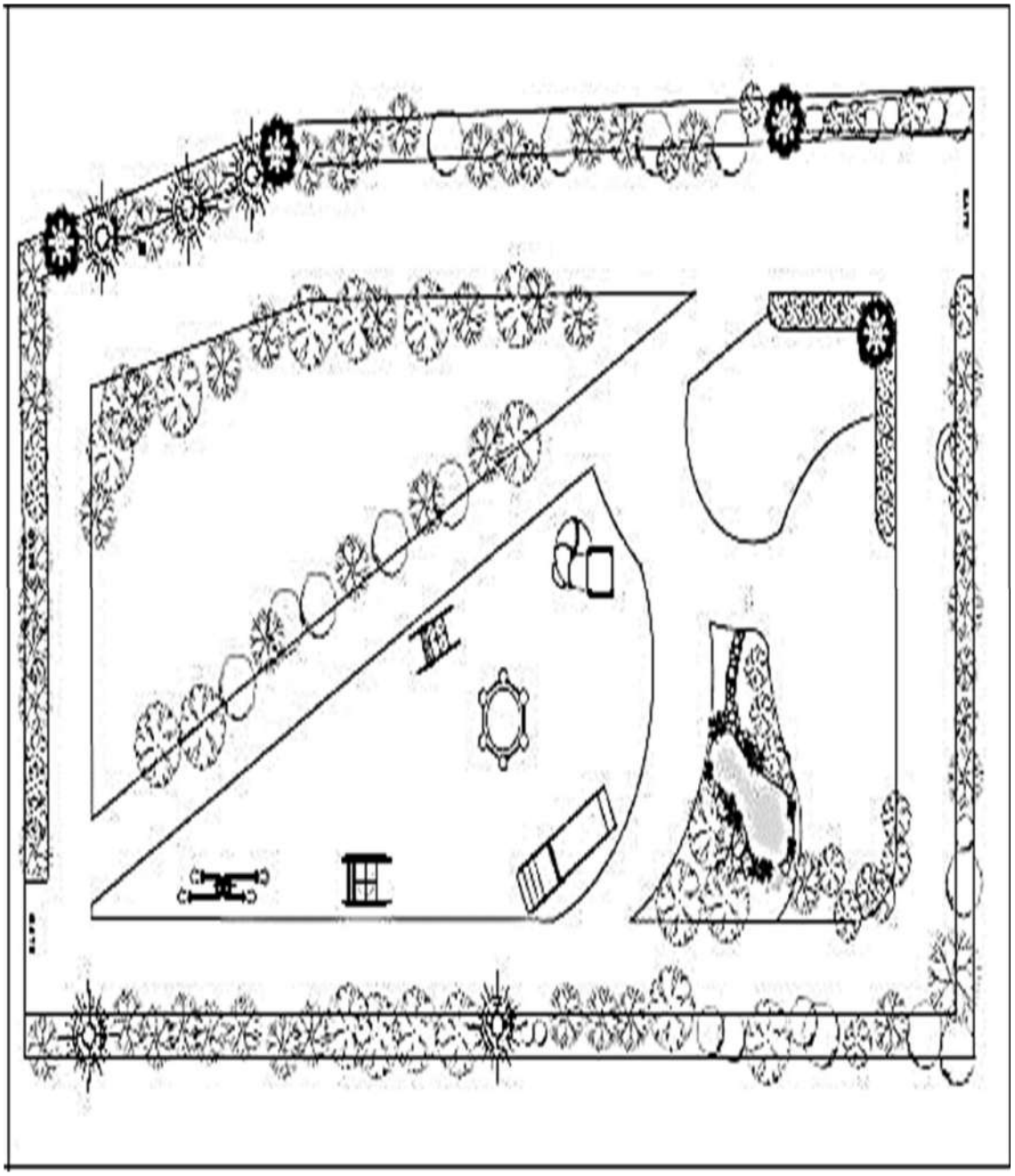

FIG.60: PROPOSED DESIGN FOR PUBLIC GARDEN

PROPOSED DESIGN FOR PUBLIC GARDEN AT SHELA, SANAD, AHMEDABAD							
MEASUREMENT SHEET							
ITEM	DESCRIPTION	NO	L	B/W	H/D	QUANTIY	UNITS
ITEM NO.: - 1							
	Excavation for						
	Foundation						
	L=221.2m	1	221.2	0.7	1.8	278.712	Cu.m.
ITEM NO.: - 2							
	P. C.C. work in foundation						
	L=221.2m	1	221.2	0.7	0.6	92.904	Cu.m.
ITEM NO.: - 3							
	Brick masonry work in						
	super structure						
	L=221.2m	1	221.2	0.3	2.00	132.72	Cu.m.
	Deduction for door						
	Door	2	3.0	0.3	3.0	5.40	Cu.m.
	= 132.72 – 5.40					127.32	Cu.m.
ITEM NO.: - 4							
	Internal plaster work						
	For wall	2	221.2		2.0	884.8	Sq.m.
	Deduction						
	Door	0.5*2	3.0		3.0	9.0	Sq.m.
	Total Internal Plaster					875.8	Sq.m.

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PROPOSED DESIGN FOR PUBLIC GARDEN AT SHELA, SANAD, AHMEDABAD					
ABSTRACT SHEET					
Sr.	**Item description**	**Quantity**	**Rate**	**Per**	**Amount**
1.	Excavation work	278.712	155	Cu.m.	43200
2.	P C.C	92.904	3000	Cu.m.	60720
3.	Brickwork in superstructure	127.32	3500	Cu.m.	445620
4.	Plastering	875.80	150	Sq.m.	131370
5.	Extra kids' facilities				50000
				Total Rupees	730910
				Conti ..... 05.00% Rupees	36545
				10% contractor charges	73091
				2% water charges	14620
				Total Amount Rupees	855166

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Designing of Public Health Centre

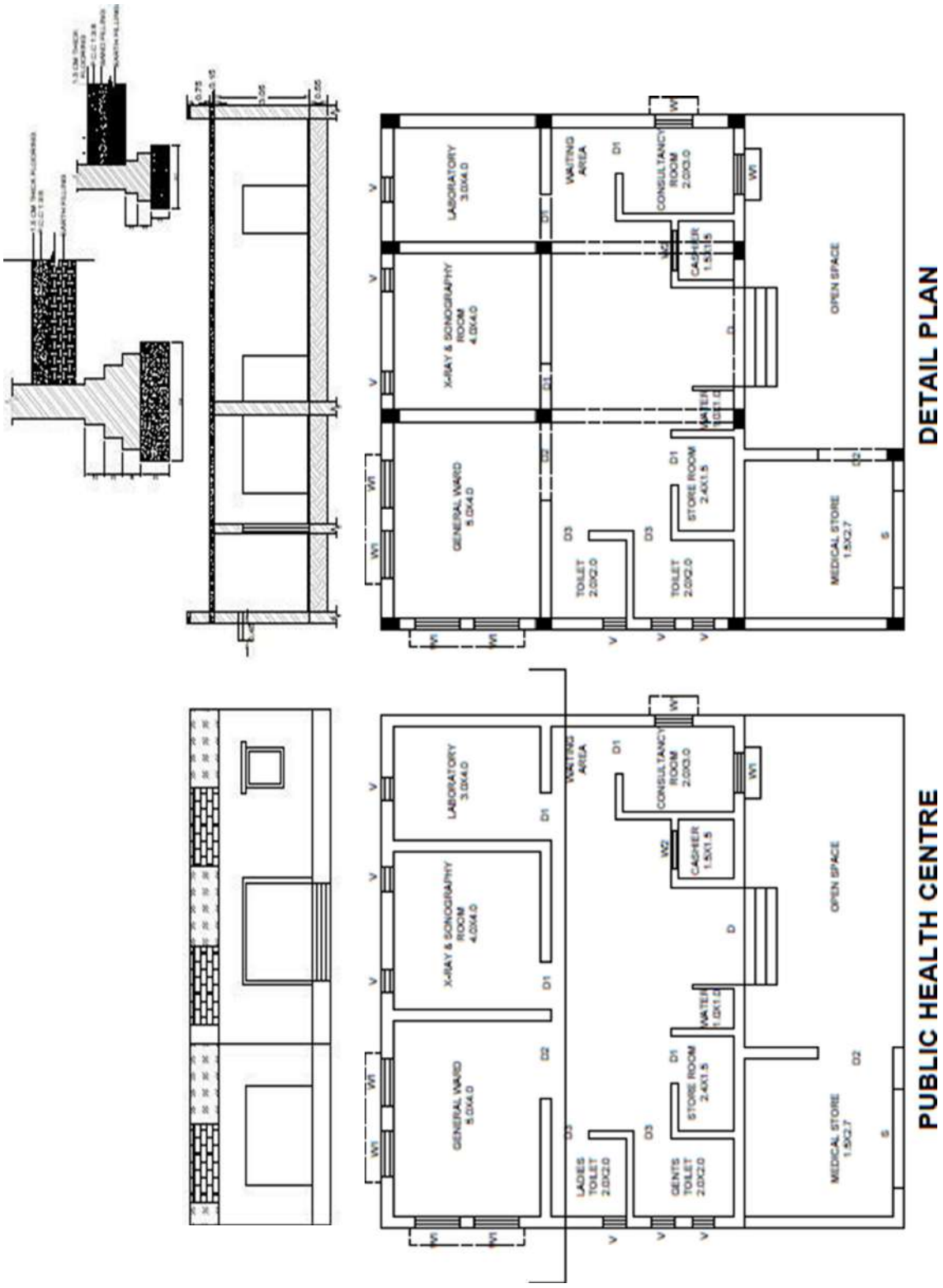

FIG.61: PROPOSED DESIGN FOR PUBLIC HEALTH CENTRE

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PROPOSED DESIGN FOR PUBLIC HEALTH CENTRE AT SHELA, SANAD, AHMEDABAD							
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	1	66.70	0.9	0.9	54.02	Cu.m.
	For 200 mm thick wall						
	L=16.4 m	1	16.4	0.7	0.6	6.89	Cu.m.
ITEM NO.: - 3							
	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.

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	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	9.8 4	
	Total Brick masonry					79.38	Cu.m.
	Up to P.L.						
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.

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

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	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 mm wall						
	L = 16.4 m	1	16.4	0.7	0.6	6.89	Cu.m
	For 300 mm wall					54.02	Cu.m
	L =66.70 m	1	66.70	0.9	0.9		
	TOTAL					60.91	Cu.m
ITEM NO.: - 7							
	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

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		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.

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	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.

PROPOSED DESIGN FOR PUBLIC HEALTH CENTRE AT SHELA, SANAD, AHMEDABAD

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

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Design of Bio-gas plant

Bio gas plant is one of the economical solution for renewable energy sources for a rural area. It transforms rural village in to clean village and also provide gas as energy source and gives fertilizer at end.

- **Data to be taken:-**

Numbers of animals to one of the villager	15 (As per survey)
As per standard data, assume per day dung of animal	10 Kg.
So total per day dung	150 Kg/day

- **Design of Digester: -**

Assume retention period (R_T)	60 days
Assume mixing proportion of solid and water	1:1
Now total amount of slurry per day (S_d)	Total per day dung + Water amount 150 + 150 300 Kg/day 300 lit /day 0.30 m^3 / day
Digester volume (V_d)	Sd X RT 0.30 X 60 18 m^3
Assume cylinder shaped bio gas plant. So digester volume becomes for one unit Total digester volume (Vd) r	 π r2 h 1.784 m

So dimensions of digester are h=1.8 m

Provide R = 1.80 m

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- **Design of Gas Holder: -**

Assume digester temperature = 26-28 ˚C

Now from following fig find Gd by taking RT=60 days

Figure 93 Gd vs Rt graph-

Specific gas production Gd== 34 Lit /Kg/day

Daily gas production G = Gd × Feed volume

= 34 × 300

= 10200 Lit.

= 10.20 m3

Now assume gas holder capacity = 60 %

Gas holder volume = Daily gas production × Capacity of holder

= 10.20 × 0.60

=6.12 m3

So take Gas holder volume = 6.20 m3 Provide cylinder shaped holder so,

Volume= π r2 h

6.20 = π x r2 x 0.50 (take h = 0.50 m)

r = 1.98mt

So dimensions of Gas holder are H = 0.5 m R = 2.0 m

- **Design of Inlet & Outlet: -**

Total volume of slurry mix per unit = 0.30m3 / day Assume single time filling operation in plant

So take total volume of slurry = 0.30 m3 / day Take = 0.30 m3 / day

Provide rectangular tank so,

Total volume for one time mixing of slurry = L × B × H

0.30 = L × B × H (take H=0.50m) Assume rectangle chamber with proportion width: length = 1: 1.5

So, 0.30= 1.5B X B X 0.50 B = 0.63

Provide B = 0.70 Hence L = 1.0

Dimension of inlet are L = 1.0 m

B = 0.70m H = 0.50 m

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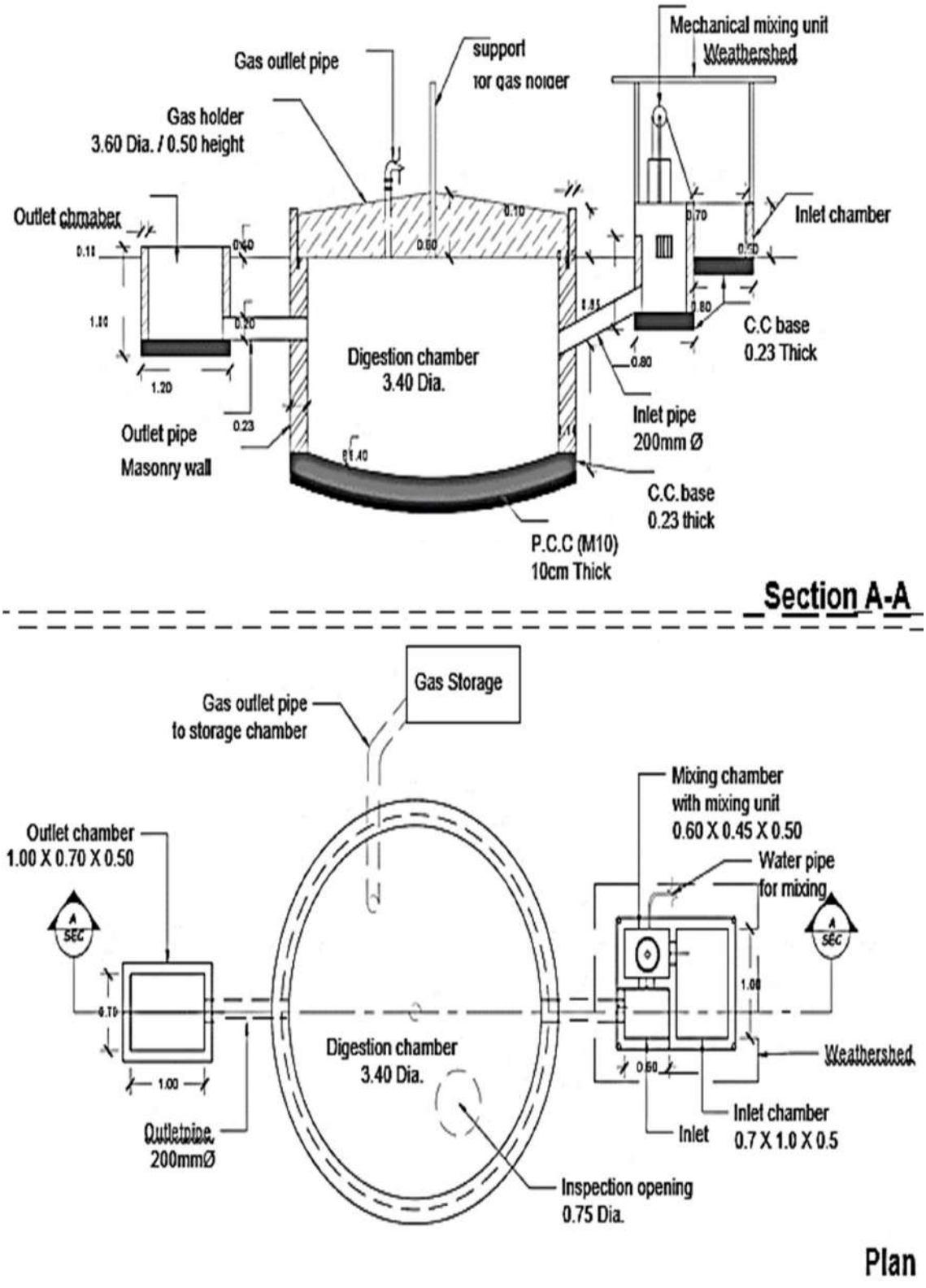

FIG.64: PROPOSED DESIGN FOR SEWAGE TREATMENT PLANT

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PROPOSED DESIGN FOR BIO GAS PLANT AT SHELA, SANAD, AHMEDABAD

MEASUREMENT SHEET

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	$\frac{\pi}{4}$ x (3	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	29.293cu
			Total excavation			29.293	m
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	$\frac{\pi}{4}$ x (3	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	$\frac{\pi}{4}$ x (3	86)^2	0.23	2.960	
	Outlet chamber.	1	0.90	1.00	0.23	0.207	
		Tot	l C.C. work in foun		dation	3.639	3.639cum
4.	Masonry work.						6.375cum

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	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 π 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			68.617	mt
6.	200mm Dia. Pipe required.	1	2.33mt				2.33mt
7.	Mechanical mixing unit.	1	1nos				1nos

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PROPOSED DESIGN FOR BIO GAS PLANT AT SHELA, SANAD, AHMEDABAD

ABSTRACT SHEET

Sr. No.	Description of item	Quantity	Unit Rate	Unit	Total amount (Rs.)
1	Excavation for foundation for depth 1.5mt to 3.0mt including sorting out andstacking of useful material and disposing off the excavated stuff up to 50mt lead.	29.293	93.20	Cum	2730.108
2	Providing and laying cement concrete 1:4:8 and curing complete in foundation.	1.582	1898.0	Cum	3002.636
3	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/-**

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- Cost may be vary due to site condition, final selection of material, unexpected cost etc.
- Cost of Floating holder, shed for Inlet chamber is not consider as it depend on owner.
- Cost for putting the plant in working condition is not consider.

Table 16 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.

Design of Public Toilet Block

Scenario:

There is only one public toilet block in the whole village; there is an instant need of few more public toilets blocks for better health to the village dwellers.

Existing Situation:

The photos show the condition of toilet beside the community hall and it's required maintains.

Dimensions:

1. Public block = 6.9 x 2.6 MTR
2. Screen wall thickness = 20 cm
3. Partition wall thickness = 10cm
4. Water tank depth = 80cm
5. Door size = 80cm x 20cm

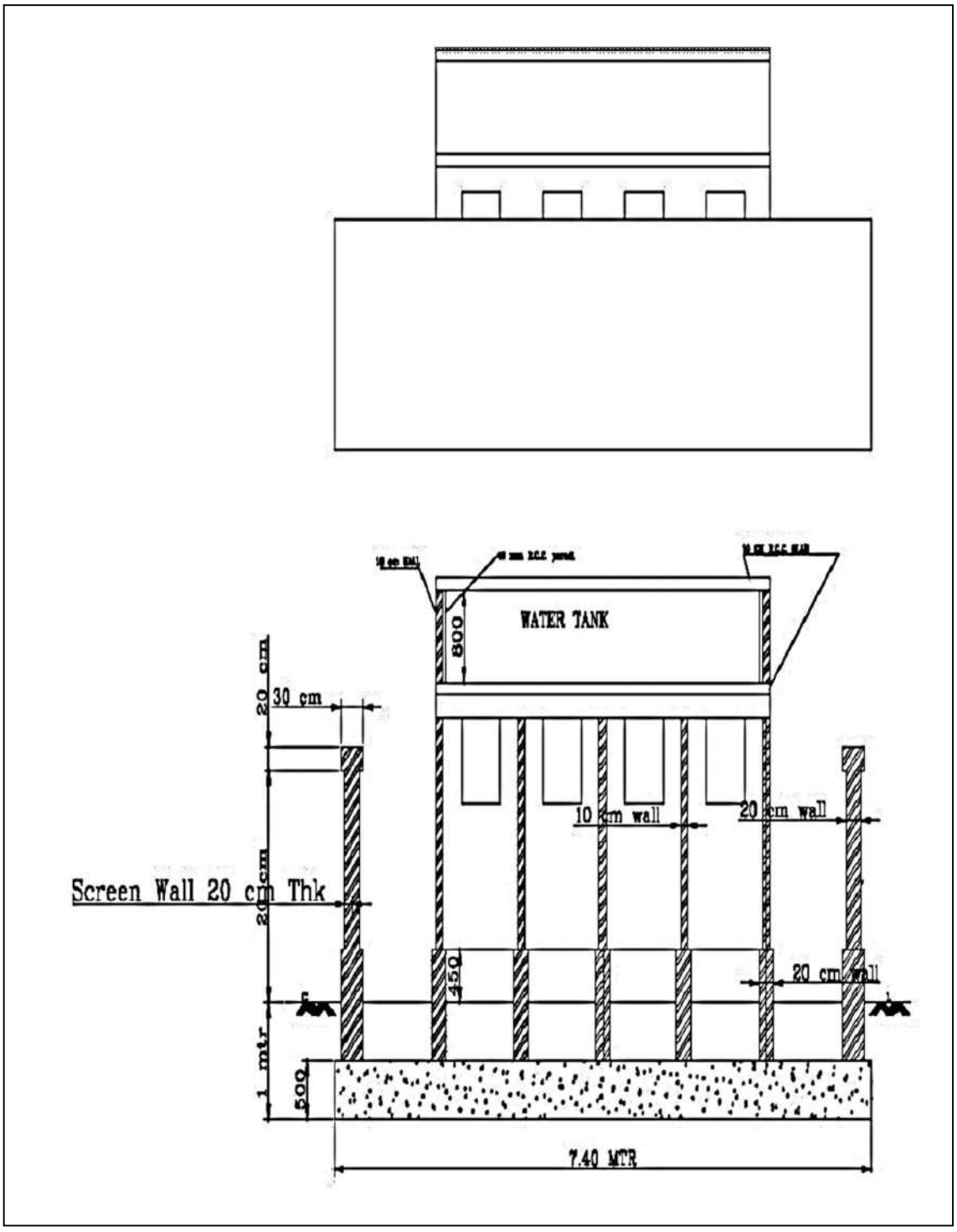

FIG.65: PROPOSED DESIGN FOR PUBLIC TOILET (SECTION AND PLAN)

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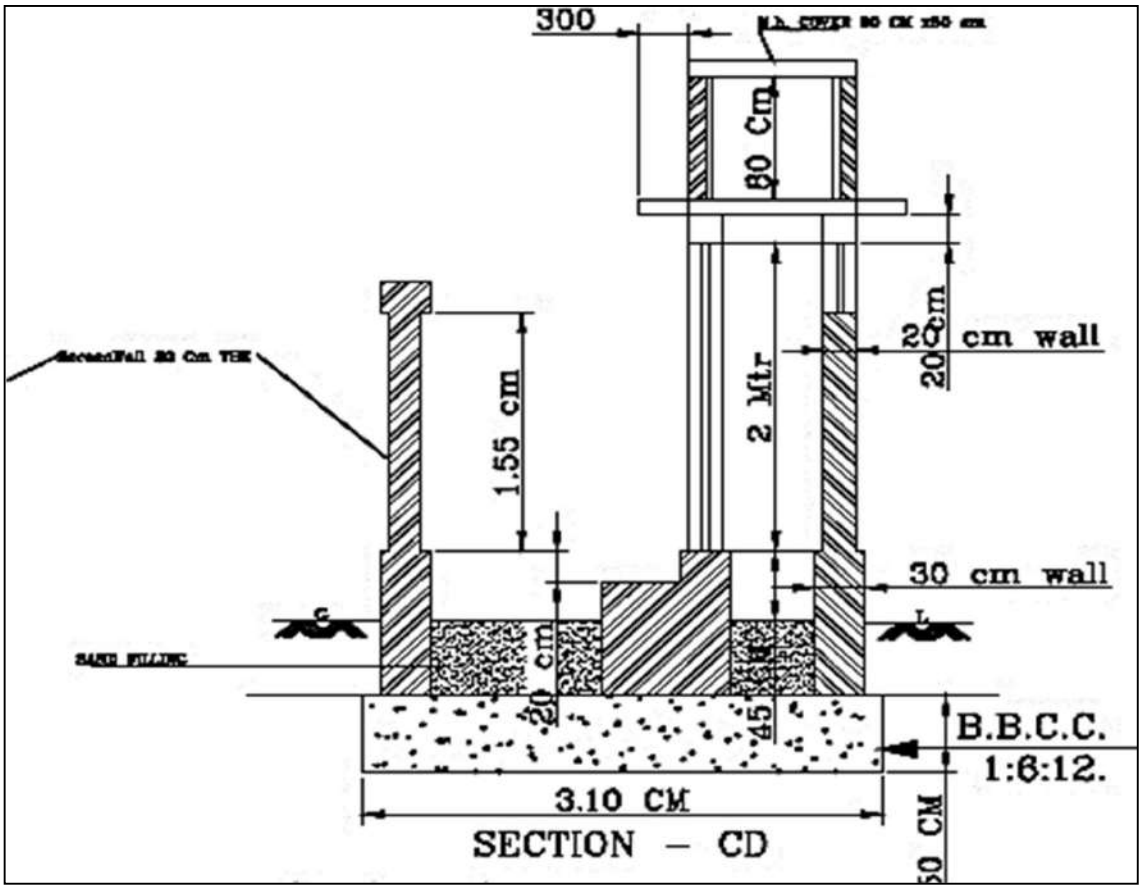

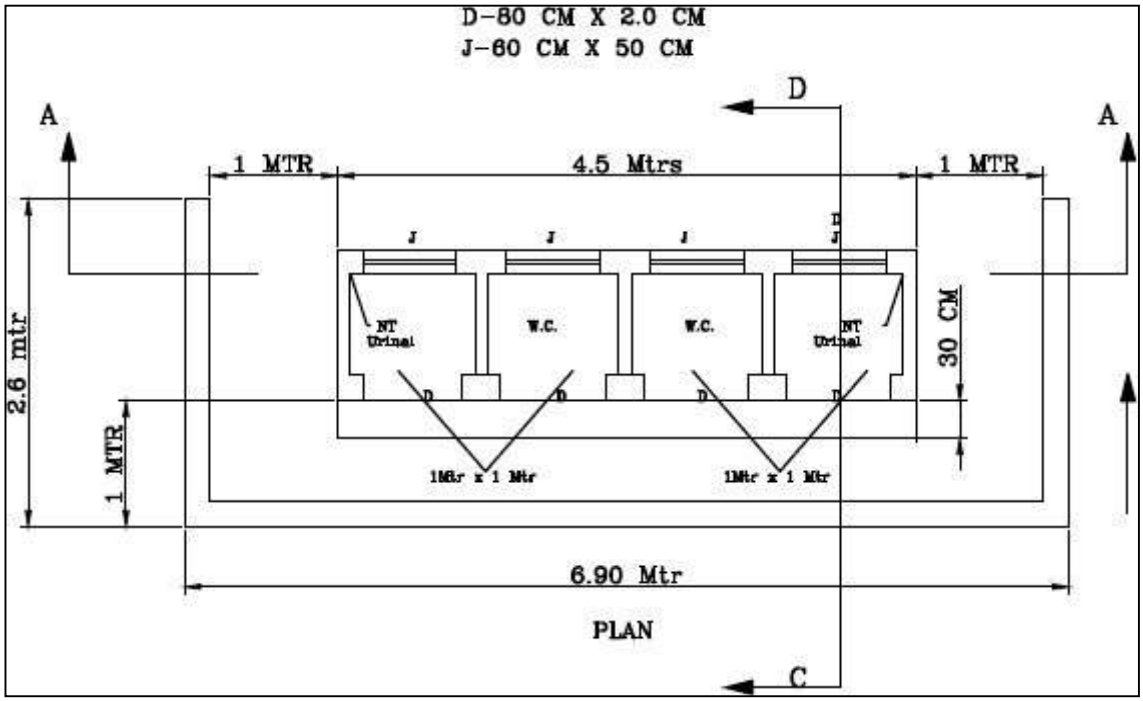

FIG.66: PROPOSED DESIGN FOR PUBLIC TOILET (SECTION AND PLAN)

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Recapitulation Sheet		
Sr. No.	**Description**	**Amount**
1	Sanitary Block	Rs.220000.00

PROPOSED DESIGN FOR ATM AT SHELA, SANAD, AHMEDABAD							
MEASUREMENT SHEET							
Sr. No.	**Item**	**No.**	**L**	**B**	**H**	**Q**	**Total**
1	**Excavation**	1	7.4	3.1	1	22.94	22.94 m^3
2	**B.B.C.C (1:6:12) in Foundation**	1	7.4	3.1	0.5	11.47	11.47 m^3
3	**First class brick masonry**						
	up to plinth in C.M. (1:6):						
	H= (1+0.45-0.5) =0.95m						
	L= (1-0.1) =0.9m (vert. ili)	5	0.9	0.2	0.95	0.86	
	L= (4.5+0.05+0.05) =4.6m (hor. olo)	2	4.6	0.3	0.95	2.62	
	Screen Wall:						
	Horizontal olo, L= (6.9+0.1) =7.0m	1	7	0.3	0.95	1.996	
	vertical ilo, L= (2.6-0.2) =2.4m	2	2.4	0.3	0.95	1.386	
	vertical ili, L= (1-0.1) =0.9m	1	0.9	0.3	0.95	0.25	
						3.62	
	Step:	1	4.2	0.3	0.75	0.95	
	H= (0.95-0.2) =0.75m						8.05 m^3
	L= (4.5-0.3) =4.2m						
4	**Sand filling in plinth**						
	b= (2.6-0.3) =2.3m	2	1	2.3	6.5	2.3	
	L= (6.9-1-1.0-0.2) =4.7m	1	4.7	0.7	0.5	1.65	
	b= (1-0.3) =0.7m						
	h= (0.45-0.1)=0.35m	4	1	1.6	0.35	1.4	
							5.35 m^3
5	**First class brick masonry in super structure in C.M. (1:6)**						
	San. Block hor.(olo)	2	4.5	0.2	2	3.6	
	screen wall hor.(olo), h = (2-0.45) = 1.56m	1	6.9	0.2	1.55	2.13	
	vert. (oli)	2	2.4	0.2	1.55	1.48	

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	top portion	1	7	0.3	0.2	0.42	
		2	2.4	0.3	0.2	0.23	
							7.94 m^3
	Deduction:						
	Door	4	0.8	0.2	2	-1.28	
	c.c. jail	4	0.6	0.2	0.5	-0.24	
							-1.52 m^3
						NET	6.42 m^3
6	**10 cm brick portion wall in C.M. (1:4)**						
	vertical (ili)	2	1	-	2	4	
		3	1	-	2.2	6.6	
	Water tank						
	horizontal (o|o)	2	4.5	-	0.8	7.2	
	Vert., (i|i)	2	1.2	-	0.8	1.92	
	Screen wall	1	1	-	1.75	1.75	
							21.47 m^2
7	**Wooden doors with oxide copper fastening & fixtures**	4	0.8	-	2	6.4	6.4 m^2
8	**Cement concrete jail**	4	0.6	-	0.5	1.2	1.2 m^2
9	**R.C.C. lintels portions (1:1.5:3)**						
	hor.(o|o)	2	4.5	0.2	0.2	0.36	
	vert.(i|i)	2	1	0.2	0.2	0.08	
							0.44 m^3
10	**10 mm R.C.C slab portion (1:1.5:3)**						
	Bottom of water tank, b= (1.4+.6) =2m	1	4.5	2	-	9	
	Top of water tank, b=1+.4 = 1.4m	1	4.5	1.4	-	6.3	
							15.3 m^2
	Manhole cover	1	0.6	0.5	-	-0.3	-0.3 m^2
						NET	15 m^2

11	**40mm R.C.C paradi portion (1:1.5:3)**						
	Inside water tank						
	hor. L=4.5-.2=4.3m	2	4.3	0.8	-	6.88	

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	vert.(i|i), L=1.4-.2-.08=1012	2	1.12	0.8	-	1.79	
							8.67 m²
12	**10 c.m thick B.B.C.C (1:6:12) floor concrete**						
	Flooring	4	1	1	0.1	0.4	0.4 m³
13	**Paving of 150mm*150mm white glazed tiles in flooring**	4	1	1	-	4	4 m2
14	**….do… but in dado**						
	L=.1+.1+1+1+1+.1+.1=3.4	4	3.4	-	0.8	10.88	10.88 m²
15	**Paving of 40 mm thick I.P.S. (1:2:4)**						
	Step	1	4.2	0.3	-	1.26	1.26 m²
16	**12 mm thick sagol finish cement plaster in C.M. (1:4)**						
	Inside plaster:						
	h=.08+.8+.3+.08+.3+2.2+.05+.45+. 4= 4.36 m	2	4.5	-	4.36	39.26	
	Outside plaster:						
	h=.08+.8+.08 +2.2+.05+.45+.1 = 3.76m	2	1.4	-	3.76	10.53	
	Screen wall:						
	L=2(2.6-.1) +(6.9-.2)=11.7m	1	11.7	-	5.1	59.67	
	h=4.8+.3=5.1m						
	Bottom of slab	4	1	1		4	
	Cross wall, h=2.2+.1=2.3m	2	1	-	2.3	4.6	
	Top	1	1	0.1		0.1	142.78 m2
	Deduction:						
	Door	4	0.8	-	2.6	-6.4	
	Jail	4	0.6	-	0.5	-0.12	
							-6.52 m²
						NET	136.26 m2

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17	**Three coats of white washing**						
	same as cement plaster					136.26	136.26 m2

18	**12 mm thick waterproof cement plaster in C.M. (1:4)**						
	Top & bottom slab						
	L=4.5-.2-.08 = 4.22m	2	4.22	1.12		9.45	
	Paradi	2	4.22	-	0.08	6.75	
		2	1.12	-	0.08	0.79	
							17.99 m^2
	Deduction: Manhole cover	1	0.6		0.5	-0.3	-0.3 m^2
						NET	17.69 m^2
19	**Indian w.c. pans with a pair of footrests**	2				2	2 Nos.
20	**Foot rests**	2				2	2 pairs
21	**P.V.C. flushing cistern for w.c.**	2				2	2 Nos.
22	**P.V.C. automatic flushing tank for urinals**	2				2	2 Nos.
23	**Nahni traps**	2				2	2 Nos.
24	**Gully traps**	3				3	3 Nos.
25	**Inspection chamber**	1				1	1 No.
26	**Manholes**	2				2	2 Nos.
27	**100 mm dia. S.W. pipe**	1	1.5			1.5	
		2	2			4	
							5.5 r.m.
28	**150 mm dia. S.W. pipe**	1	5			5	
		1	20			20	
							25 r.m.

29	**75 mm dia. Cast iron pipe**						
	vent pipe	1	6			6	
	from urinal to G.I.	2	1.5			3	
							9 r.m.
30	**100 mm dia. C.I. soil pipe**						
	wall from w.c. to G.I.	1	1.5			1.5	1.5 r.m.

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31	**75mm dia. C.I. went cowl**	1				1	1 Nos.
32	**Intercepting sewer traps**	1				1	1 Nos.
33	**Mica flap valve**	1				1	1 Nos.
34	**25 mm dia. G.I. pipe**						
	from main line	1	15			15	
	from water tank	1	1			1	
	for overflow	1	1			1	
	for washout up to G.I.	1	3			3	
							20 r.m
35	**12 mm dia. G.I. pipe**						
	L=4.5-1=3.5m						
	Horizontal	1	3.5			3.5	
		4	1			4	
							7.5 r.m
36	**Stop cocks**	4				4	4 Nos.

37	**Bib cocks**	4				4	4 Nos.
38	**Copper ball cock**	1				1	1 Nos.
39	**Wheel valves25 mm dia. Pipes**						
	Inlet	1				1	
	Outlet	1				1	
	wash out	1				1	
							3 Nos.
40	**Manhole cover**	2				2	2 Nos.

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PROPOSED DESIGN FOR PUBLIC TOILET CENTRE AT SHELA, SANAD, AHMEDABAD

ABSTRACT SHEET

Sr. No.	Item	Quantity.	Per	Rate (Rs.)	Amount (Rs.)
1	Excavation	22.94		180.00	4129.2
2	B.B.C.C (1:6:12) in Foundation	11.47		1,410.00	16,172.70
3	First class brick masonry up to plinth in C.M. (1:6)	8.05		3,200.00	25,760.00
4	Sand filling in plinth	5.35		290.00	1,551.50
5	First class brick masonry in super structure in C.M. (1:6)	6.42		3,500.00	22,470.00
6	10 cm. Brick portion wall in C.M. (1:4)	21.47		285.00	6,118.95
7	Wooden doors with oxide copper fastening & fixtures	6.4		7,500.00	48,000.00
8	Cement concrete jail	1.2		330.00	396.00
9	R.C.C. lintels portions (1:1.5:3)	0.44		7,710.00	3,392.40
10	10 mm R.C.C slab portion (1:1.5:3)	15		690.00	10,350.00
11	40mm R.C.C paradi portion (1:1.5:3)	8.67		510.00	4,421.70
12	10 cm. thick B.B.C.C (1:6:12) floor Concrete	0.4		1,410.00	564.00
13	Paving of 150mm*150mm white glazed tiles in flooring	4		575.00	2,300.00
14	.... Do... but in dado	10.88		595.00	6,473.60
15	Paving of 40 mm thick I.P.S. (1:2:4)	1.26		185.00	233.10
16	12 mm thick sagol finish cement plaster in C.M. (1:4)	136.26		81.00	11,037.06
17	Three coats of white washing	136.2		13.00	1,771.38
18	12 mm thick waterproof cement plaster in C.M. (1:4)	17.69		95.00	1,680.55
19 20	Indian W.C. Pans with a pair of footrests Foot rests	2		1,370.00	2,740.00

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21	P.V.C. flushing cistern for W.C.	2		210.00	420.00
22	P.V.C. automatic flushing tank for	2		2,200.00	4,400.00
23	Urinals Nanny traps	2		1,700.00	3,400.00
24	Gully traps	2		200.00	400.00
25	Inspection chamber	3		320.00	960.00
26	Manholes	1		2,600.00	2,600.00
27	100 mm dia. S.W. pipe	2	Nos.	3,200.00	6,400.00
28	150 mm dia. S.W. pipe	5.5	r.m.	130.00	715.00
29	75 mm dia. Cast iron pipe	25	r.m.	175.00	4,375.00
30	100 mm dia. C.I. soil pipe	9	r.m.	310.00	2,790.00
31	75mm dia. C.I. went cowl	1.5	r.m.	550.00	825.00
32	Intercepting sewer traps	1	Nos.	140.00	140.00
33	Mica flap valve	1	Nos.	450.00	450.00
34	25 mm dia. G.I. pipe	1	Nos.	900.00	900.00
35	12 mm dia. G.I. pipe	20	r.m.	215.00	4,300.00
36	Stop cocks	7.5	r.m.	170.00	1,275.00
37	Bib cocks	4	Nos.	340.00	1,360.00
38	Copper ball cock	4	Nos.	280.00	1,120.00
39	Wheel valves25 mm dia. Pipes	1	Nos.	250.00	250.00
40	Manhole cover	3	Nos.	550.00	1,650.00
		2	Nos.	450.00	900.00
				Total	208,045.14
				Add 5% Contingencies	10,402.25
				Grand Total	218,447.39
				Say	**Rs.220,000**

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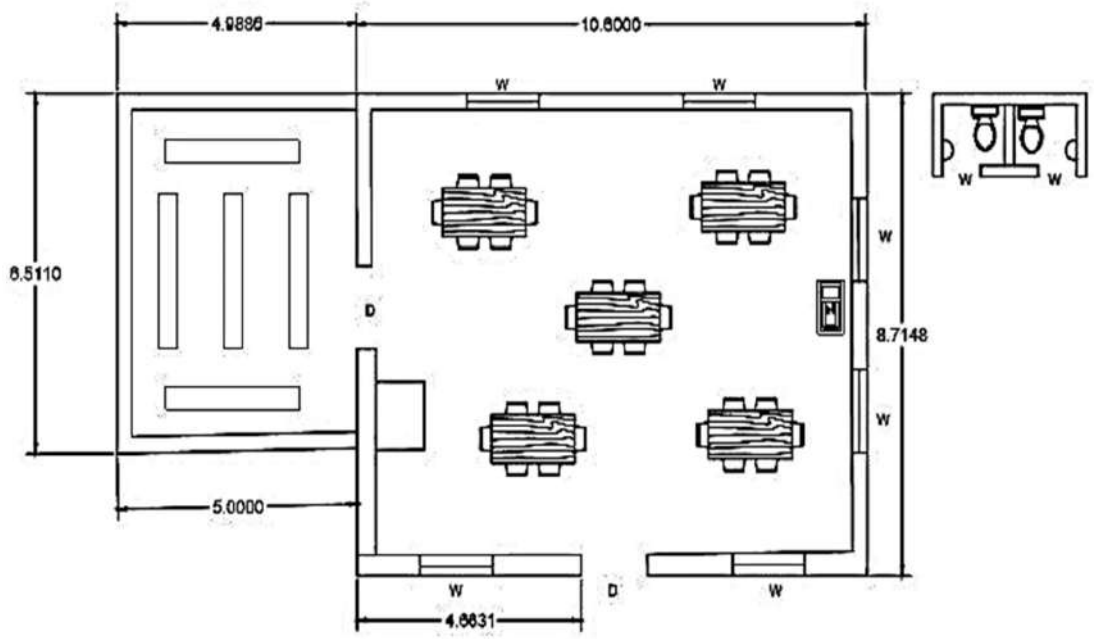
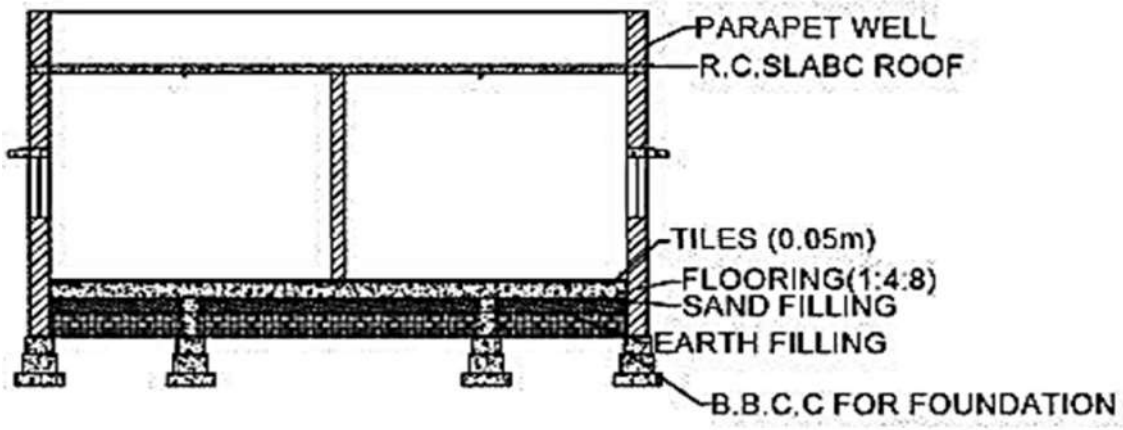
DESIGN OF PUBLIC LIBRARY



PLAN

D	1.5 X 2.1
W	1.5 X 1.2



SECTION

FIG.67: PROPOSED DESIGN FOR PUBLIC LIBRARY (SECTION AND PLAN)

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PROPOSED DESIGN FOR PUBLIC LIBRARY AT SHELA, SANAD, AHMEDABAD							
MEASUREMENT SHEET							
ITEM	DESCRIPTION	NO	L	B/W	H/D	QUANTIY	UNITS
ITEM NO.:- 1							
	Excavation for						
	Foundation						
	L=52.51	1	52.51	0.9	1.2	56.71	Cu.m.
ITEM NO.:- 2							
	C.C. work in foundation						
	L=52.51	1	52.51	0.9	0.2	9.45	Cu.m.
ITEM NO.:- 3							
	Brick masonry work in						
	Foundation (L=37.10)						
	1st step						
	L=53.05 –2*(0.6/2)	1	52.45	0.6	0.1	3.15	Cu.m
	=52.45						
	2nd step						
	L=53.05 –2*(0.5/2)	1	52.55	0.5	0.1	2.63	Cu.m
	=52.55						
	3rd step						
	L=53.05–2*(0.4/2)	1	52.65	0.4	0.1	2.11	Cu.m
	=52.65						
	4th step	1	52.75	0.3	0.7	11.08	Cu.m
	L=53.05 –2*(0.3/2)						
	=52.75						
	Total Brick masonry					18.97	Cu.m.
	work in foundation						
ITEM NO.:- 4							

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	Brick masonry work in						
+	super structure						
	L=50.20m	1	53.05	0.3	4	63.66	Cu.m.
	Deduction for door &						
	Window						
	Door	1	1.5	0.3	2.1	0.95	Cu.m.
	Door 1	1	1.2	0.3	2.1	0.756	Cu.m.
	Window	6	1.5	0.3	1.2	3.24	Cu.m.
	Deduction for lintel						
	Door	1	1.5	0.3	0.1	0.05	Cu.m.
	Door 1	1	1.2	0.3	0.1	0.036	Cu.m.
	Window	6	1.5	0.3	0.1	0.27	Cu.m.
	Total Brick masonry						
	Work						
	= 53.05 - 0.356					52.69	Cu.m.
ITEM NO.:- 5							
	Brick masonry work in step						Cu.m.
	Step: 1	1	4	0.6	0.25	0.6	Cu.m.
	Step: 2	1	4	0.3	0.25	0.3	Cu.m.
					Total	0.9	Cu.m.
ITEM NO.:- 6							
	D.P.C at plinth level						
	For 300mm thick wall	1	53.05	0.9	0.9	42.97	cum
	Total					42.97	Cu.m
ITEM NO.:-7							
	EARTH FILLING						
	Seating portion	1	10.6	8.72	0.6	52.46	Cu.m
	Book portion	1	5	6.51	0.6	19.53	Cu.m
	TOTAL					72.0	Cu.m
ITEM NO.:-8 INTERNAL PLASTER							
	Ceiling. Seating	1	10.60	8.72		92.43	

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	Book portion	1	5	6.51		32.55	
	Walls. Seating	2	10.60		4	84.8	
		2	8.72		4	69.76	
		2	5		4	40	
		2	6.51		4	52.08	
	TOTAL					371.62	**Sq.m.**
ITEM NO.:- 9							
WHITE WASH PER ABOVE						371.62	Sq.m.
ITEM NO.:-10							
	RCC WORK FOR SLAB	1	15.6	8.72	0.15	20.40	Cu.m
	L=15.6						
	B=8.72						
	H=0.15						

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PROPOSED DESIGN FOR PUBLIC TOILET CENTRE AT SHELA, SANAD, AHMEDABAD					
ABSTRACT SHEET					
Sr.	**Item description**	**Quantity**	**Rate**	**Per**	**Amount**
1.	Excavation work	56.71	155	Cu.m.	8,790
2.	P C.C	9.45	3000	Cu.m.	28,350
3.	Brickwork in foundation	18.97	3200	Cu.m.	60,704
4.	Brickwork in superstructure	52.70	3500	Cu.m.	1,84,450
5.	Brickwork in steps	0.9	3200	Sq.m.	2,880
6.	DPC at plinth level	42.97	4900	Cu.m.	2,10,553
7.	Earth filling	72	50	Cu.m.	3,600
8.	Internal plaster	371.62	150	Sq.m.	55,743
9.	White wash	371.62	25	Sq.m.	9,291
10.	Rcc work for slab	20.40	8800	Cu.m.	1,79,520
				Total Rupees	7,43,881
				Conti .....05.00% Rupees	37194
				10% contractor charges	74,388
				2% water charges	14878
				Total Amount Rupees	8,70,341
				Say Rupees	8,70,341

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DESIGN OF RAIN WATER HARVESTING

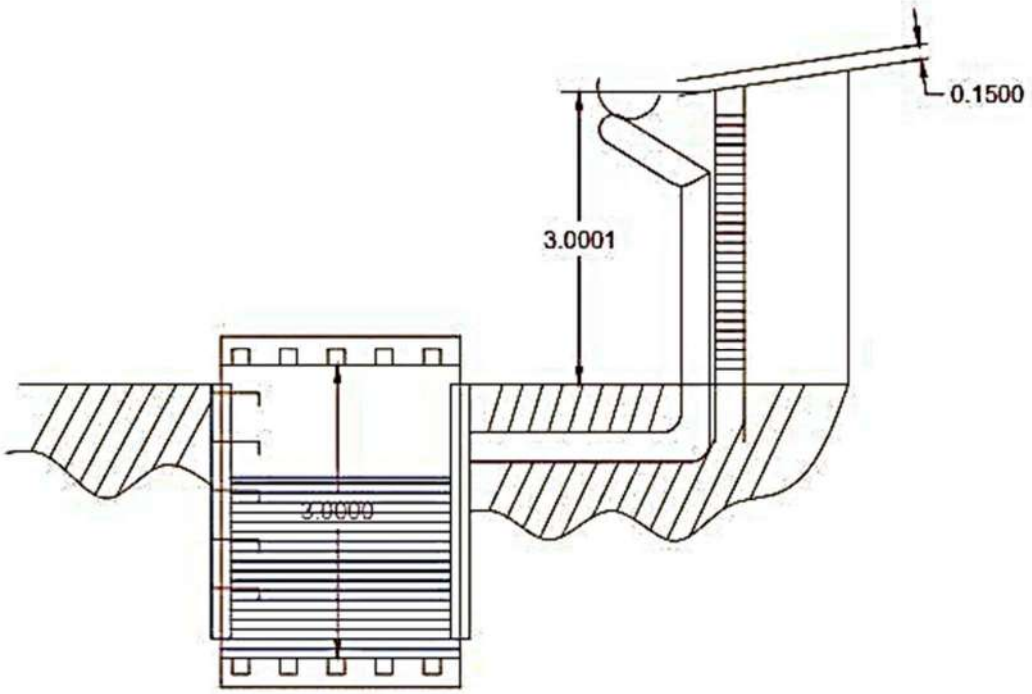

FIG.68: PROPOSED DESIGN FOR RAIN WATER HARVESTING

Instrument	nos	costing
Excavation	1	25000
Pipes	3	500
Nozel	2	500
Gutters	2	500
Filter	5	1000
Storage tank	1	10000
		43,500/-

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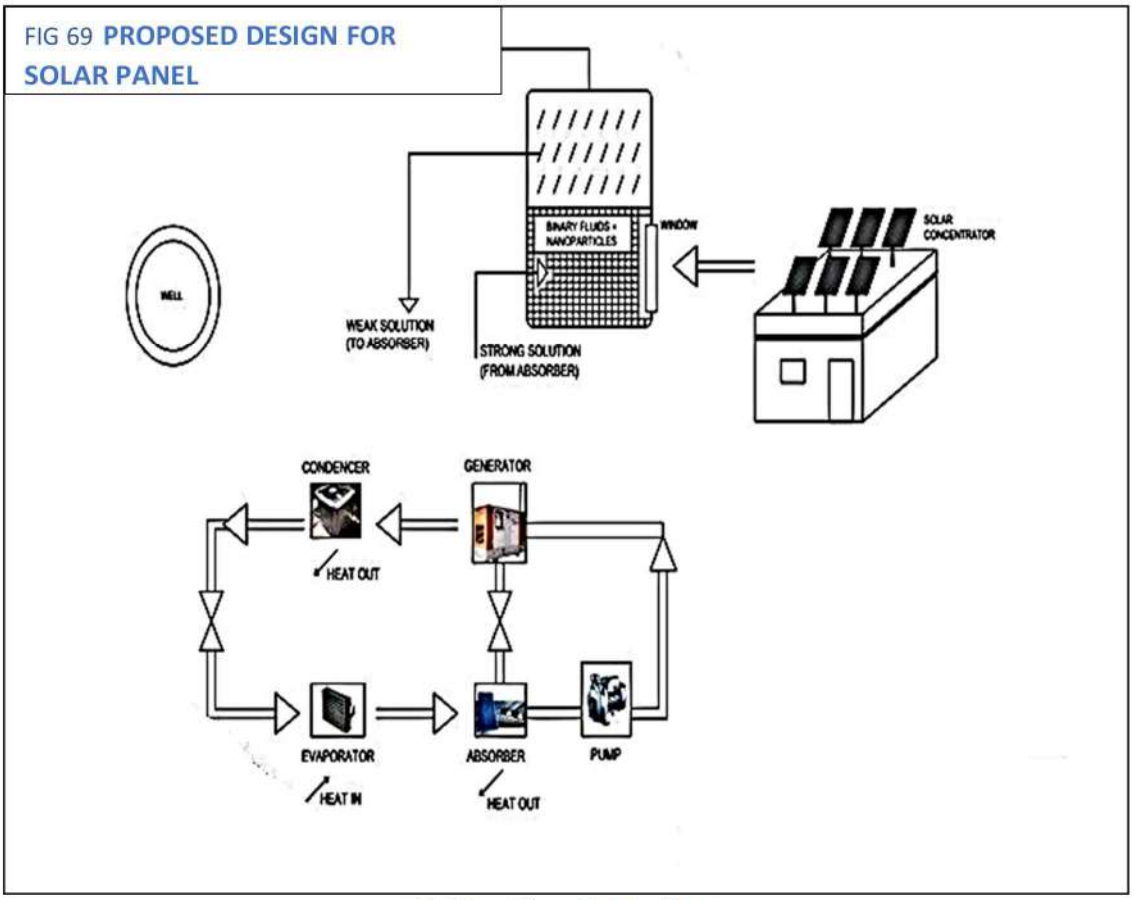
Design of Solar panel

FIG 69 **PROPOSED DESIGN FOR SOLAR PANEL**



Estimation & Costing

Instrument	NOS	PRICE(PER PIECE)
SOLAR PANELS	8	2400
CONDENSER	1	25000
GENERATOR	1	250000
EVAPORATER	1	500000
ABSORBER	1	1000
PUMP(2 HP 1.5KW)	1	15000

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DESIGN OF SMART BIN CONEPT

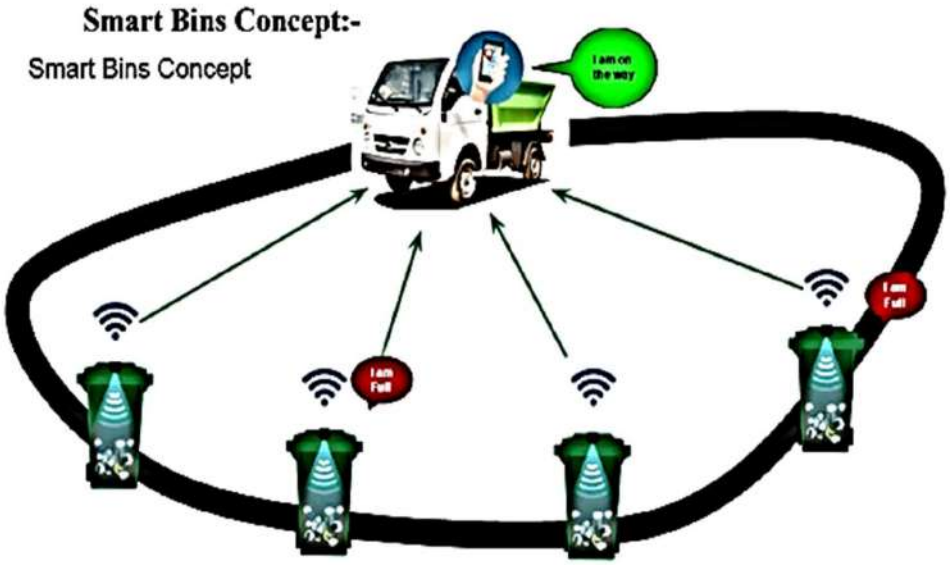

FIG 70 **PROPOSED DESIGN FOR SMART BIN**

ESTIMATON OF SMART BINS:-

Serial no.	Item	Quantity	Price (RS)
1	Arduino board	1	595
2	Ultrasonic sensor	1	150
3	GSM module	1	1050
4	GSM cable	1	320
5	Bread board	1	340
6	Jump wires	10	60
7	Dustbins	1	1500
8	Stationary items	5	500
	Total		RS. 4515/-

For a one dustbin it,,s price is RS.4515/-.

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DESIGN OF WIFI TOWER

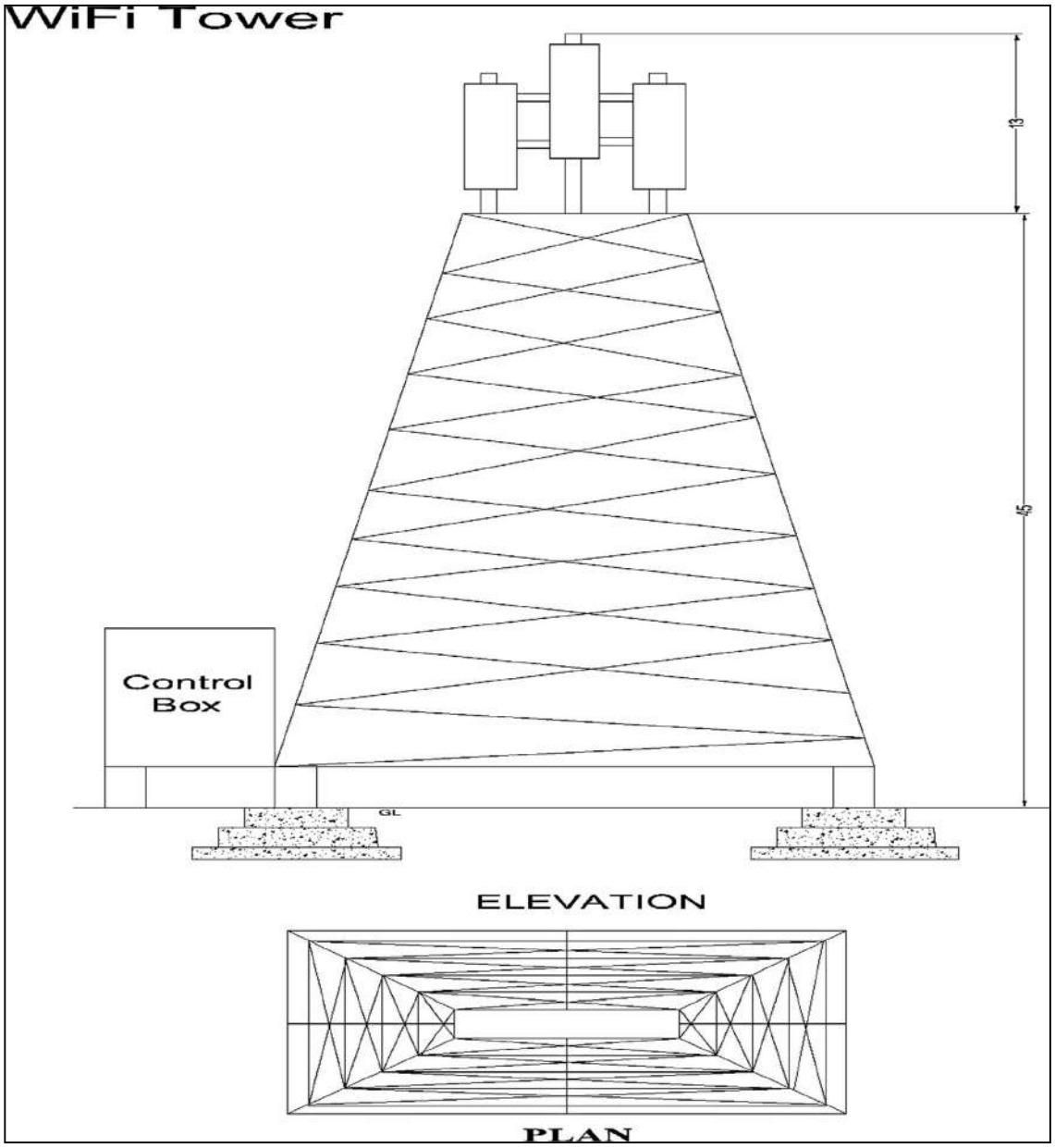

FIG .71 PROPOSED DESIGN FOR WIFI TOWER

ESTIMATE					
CONSTRUCTION WORK ESTIMATE OF PROPOSED WI-FI TOWER					
SR.NO.	DESCRIPTION	QTY.	RATE (Rs.)	UNIT	AMOUNT (Rs.)
1	Vertical Tower Construction	1.00	250000.00	NOS	250000.00
2	Foundation Construction	1.00	25000.00	CUMT	25000.00
3	Boundary Construction	1.00	15000.00	CUMT	15000.00
4	Lighting and Wiring Costing	200.00	40.00	MT	8000.00
Rupees Three lakh Only.				Total	298000.00
				SAY	300000.00

8.2 Reason for Students Recommending this Design

Reason for recommending those designs has been already included in those designs.

8.3 About Design Suggestions/Benefits to the Villagers

Same has also been included in their particular designs.

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CHAPTER 9..... FUTURE DEVLOPMENT OF THE VILLAGE

In Our Village Shela, Ahmedabad 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

1. Design of Public Garden
2. Design of Public Health centre
3. Design of Bio gas Plant
4. Design of Public Toilet
5. Design of Public Library
6.. Design of Rainwater Harvesting
7. Design of solar panel
8. Design of smart bin concept
9. Design of WiFi tower

We give Design in next semester is below

1. Design of anganwadi building (CIVIL)
2. Design of pick up stand (CIVIL)
3. Design of post office (CIVIL)
4. Design of skill development center (CIVIL)
5. Design of community hall (CIVIL)
6. Design of animal hospital (CIVIL)
7. Design of over/under voltage protection in rural areas (ELECTRICAL)
8. Design of an intelligent and efficient light control system (ELECTRICAL)
9. Design of smoke detector alarm circuit (ELECTRICAL)

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CHAPTER 10.....CANCLUSION (ENTIRE VILLAGE PROJECT PART 1

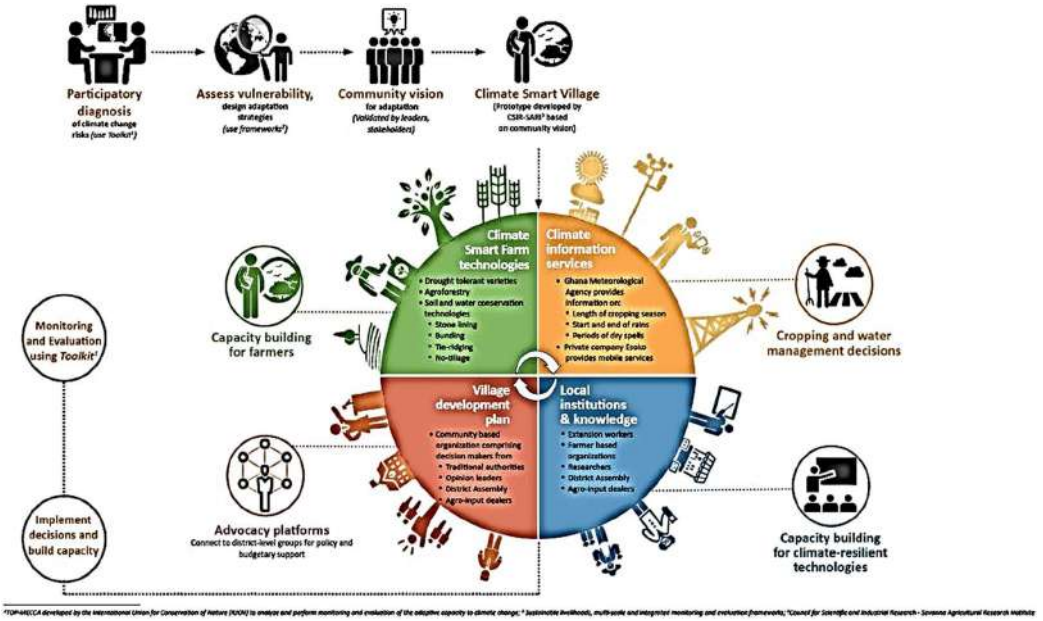
The following points can be summarized as the outcome of the study:

1. 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.

2. 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.

3. 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.

4. 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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CHAPTER 12.....ENNEXURE

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

Gujarat Technological University, Ahmedabad, Gujarat

Vishwakarma Yojana: Phase VIII
Techno Economic Survey

Techno Economic Survey

For

Vishwakarma Yojana: Phase VIII

IDEAL VILLAGE SURVEY

An approach towards Rurbanisation for Village Development

Name of Village:	Sabarkantha
Name of Taluka:	Talod
Name of District:	Punsari
Name of Institute:	L.D.C.E
Nodal Officer Name & Contact Detail:	Prof. V.P. Nigam Utkarsh.nigam99@gmail.com
Respondent Name: (Sarpanch/ Panchayat Member/ Teacher/ Gram Sevak/ Aaganwadi worker/Village dweller)	Sachinbhai Member of Gram Panchayat
Date of Survey:	20/11/2020

1. **Demographical Detail:**

Sr. No.	Census	Population	Male	Female	Total House Holds
i)	2001				
ii)	2011	6000	3055	2945	1500

2. **Geographical Detail:**

Sr. No.	Description	Information/Detail
i)	Area of Village (Approx.) (In Hector) Coordinates for Location:	1531-65-76
	Forest Area (In hect.)	-
	Agricultural Land Area (In hect.)	1015-63-62
	Residential Area (In hect.)	15-51-52
	Other Area (In hect.)	216-60-45
	Water bodies	-
	Nearest Town with Distance:	Modasa - 25 km

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Gujarat Technological University, Ahmedabad, Gujarat

Vishwakarma Yojana: Phase VIII
Techno Economic Survey

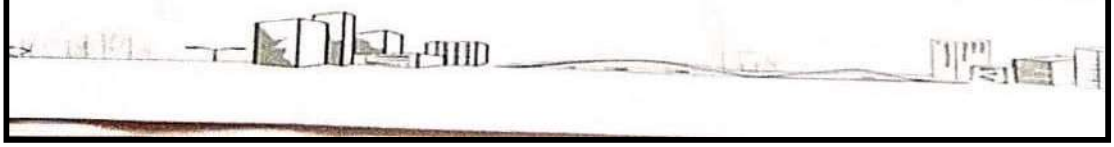
3. Occupational Details:

Name of Three Major Occupation groups in Village	1. Farming 2. Dairy 3. Jobs

4. Physical Infrastructure Facilities:

Sr. No.	Descriptions	Detail	Adequate	Inadequate	Remarks
A.	**Main Source of Drinking water**				
	• Tap Water (Treated/ Untreated) • RO Water • Well (Covered/ Uncovered) • Hand pumps • Tube well/ Borehole • River/ Canal/ Spring/ Lake/ Pond	- everyday - 7 ons nos Canal Pond	yes yes yes		Good Proper
Suggestions if any:					
B.	**Water Tank Facility**				
	Overhead Tank	Capacity: 1 lakh lit	✓	-	
	Underground Sump	Capacity: -	-	-	
Suggestions if any:					
C.	**Drainage Facility**				
	Available (Yes/ No)	yes			
Suggestions if any:					
D.	**Type of Drainage**				
	Closed/ Open	closed	✓		
	If Open than Pucca / Kutchcha				
	Whether drain water is discharged directly in to Water bodies/ Sewer plants				
Suggestions if any:					

E.	**Transport Facility**				
	Railway Station (Y/N) (If No than Nearest Rly Station---Kms)	Yes NO	1.5 km		
	Bus station (Y/N) Condition: (If No than Nearest Bus Station---Kms)	NO	4 km		
	Local Transportation (Auto/ Jeep/Chhakda/ Private Vehicles/ Other)	Yes			
Suggestions if any:					
F.	**Electricity Distribution**				
	(Y/N) Govt./ Private (Less than 6 hrs./ More Than 6 hrs)	Yes Govt	Gov	more than 6 hrs	

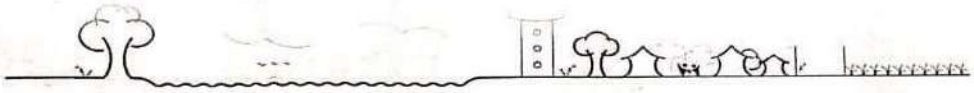


V. SOCIAL INFRASTRUCTURAL FACILITIES:

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

5

Suggestions if any:					
L.	**Education Facilities:**				
	Aaganwadi/ Play group	4	✓	-	Good
	Primary School	1	✓	-	"
	Secondary school	1	✓	-	"
	Higher sec. School	1	✓	-	"
	ITI college/ vocational Training Center	1 - KVK	✓	-	"
	Art, Commerce& Science /Polytechnic/ Engineering/ Medical/ Management/ other college facilities	-	-	-	-
	If any of the above Facility is not available in village than approx. distance from village: .....kms.				
Suggestions if any:					
M.	**Socio- Culture Facilities**				
	Community Hall (With or without TV) Location:	Good condition	2 Nos. Punsary	yes	-



VI. SUSTAINABLE /GREEN INFRASTRUCTURE FACILITIES:

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

VII. DATA COLLECTION FROM VILLAGE

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

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3/11/2021

Gujarat Technological University, Ahmedabad, Gujarat

Vishwakarma Yojana: Phase VI
Techno Economic Survey

Recent Projects going on for Development of Village	-
Any NGO working for village development	N 0

8. Additional Information/ Requirement:

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

9. Smart Village Proposal Design

Sr. No.	Descriptions	Information/ Detail	Remarks
1.		-	

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

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

3/11/2021

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

Techno Economic Survey

Vishwakarma Yojana: Phase VIII

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 (15km)

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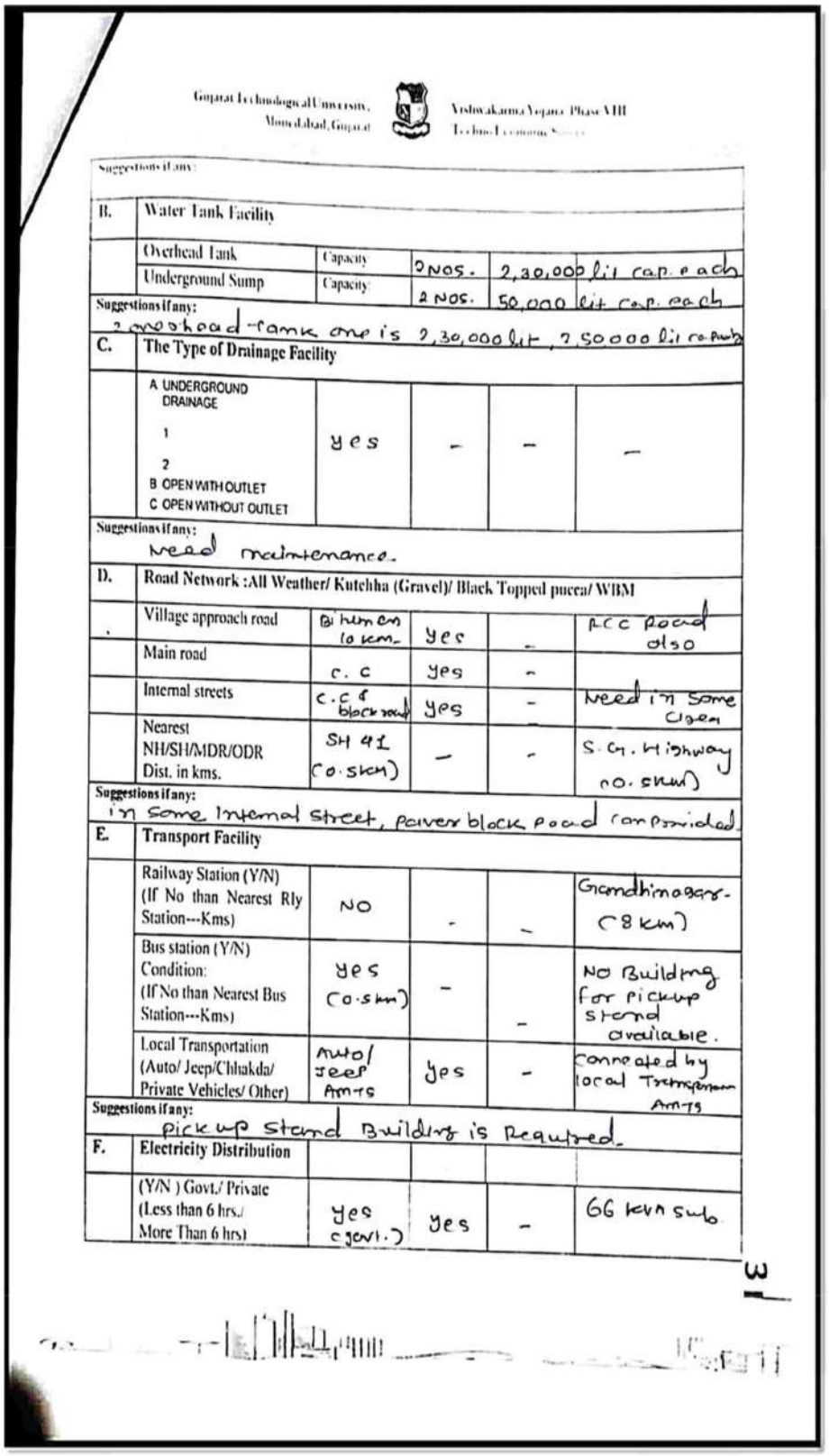
7.	Name of Nearest Town with Distance	Gandhinagar, 15km
8.	Distance to the nearest bus station (in kilometers):	Adalaj Chowkadi (0.5km)
9.	Whether village is connected to all road for the any facility or town or City?	Connected by SH 41, SG Highway.

III. OCCUPATIONAL DETAILS:

Name of Three Major Occupation groups in Village	1. Agriculture 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 & chemical)			Not use for Irrigation



Gujarat Technological University, Ahmedabad, Gujarat — Vishwakarma Yojana Phase VIII — Technical Evaluation Survey

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 50000 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 10 km.	yes	-	RCC Road also
	Main road	C. C	yes	-	
	Internal streets	C.C & black road	yes	-	Need in some Open
	Nearest NH/SH/MDR/ODR Dist. in kms.	SH 41 (0.5KM)	-	-	S.H. Highway (0.5KM)

Suggestions if any: in some Internal Street, paver block road completed

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 Amts	yes	-	connected by local Transportation Amts

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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Vishwakarma Yojana: Phase VIII
Techno Economic Survey

L. SOCIAL INFRASTRUCTURAL FACILITIES:

Sr. No.	Descriptions	Information/ Detail	Adequate	Inadequate	Remarks
	Power supply for Domestic Use	good	Adequate	.	Available in shela village
J.	Health Facilities:				
	Power supply for ICDS (Anganwadi)	good	yes	-	-
	Power supply for Sub-Centre / Commercial Use	2 NOS.	yes yes	.	good infrastructure
	PHC / Road/ Street Lights	NO. 675 poles	-	-	35 (Jade 10 km (Thaltej village)
	BLOCK PHC / Electrification in CHC/RH / Government Buildings/ Schools/ Hospital	1 NOS. good 1 NOS.	yes yes yes		need maintenance
	Renewable Energy Source Facilities (Y/N) / Private Clinic	Available	-		1 NO. Biogas plant for street light at only
	LED Facilities / Private Hospital/ Nursing Home	yes NOS.	yes.		
	Suggestions if any: facilities are very limited, solar lights need maintenance				location need
G.	AYUSH Health Facility / Sanitation Facility				
	sonography /ultrasound facility / Public Latrine Blocks	yes			Total household latrine : 230 completed : 80 remaining : 150
	If any of the above Facility is not available in village than approx. distance from village: 10 kms (gandhinagar) / Location Condition	2 NOS. good		-	
	Suggestions if any: Community Toilet (With bath/ without bath	yes	yes		without bath facilities
K.	Educational Facilities:				
	Anganwadi/ Play group / Solid & liquid waste Disposal system available	8 NOS.	- yes	-	NO well available maintained
	Primary School (1 to 8) / Any facility for Waste	6 NOS.	- yes	-	need maintenance
	Secondary school (from 1 to 10)	3 NOS.	yes	-	seperate for
	Higher sec. School (1 to 12) / Suggestions if any: Door to door collection system for solid waste				boys & girls
	H.J college / Vocational Training Center / Irrigation Facility:	NO.	-	-	12 km gandhinagar
	Art, Commerce & Science / Polytechnic/ Engineering/ Medical/ Management/ other college facilities	Grant Nashinola, aid college / Tubewell	- / yes	-	Pre PTC CPAD training available to centre
	If any of the above Facility is not available in village than approx. distance from village: 12 kms. (gandhinagar) / Other (Specify) / Suggestions if any:				
I.	Housing Condition:				
	Kutch/ Pucca (Approx. ratio)	Pucca	yes	-	more than 90% Pucca houses

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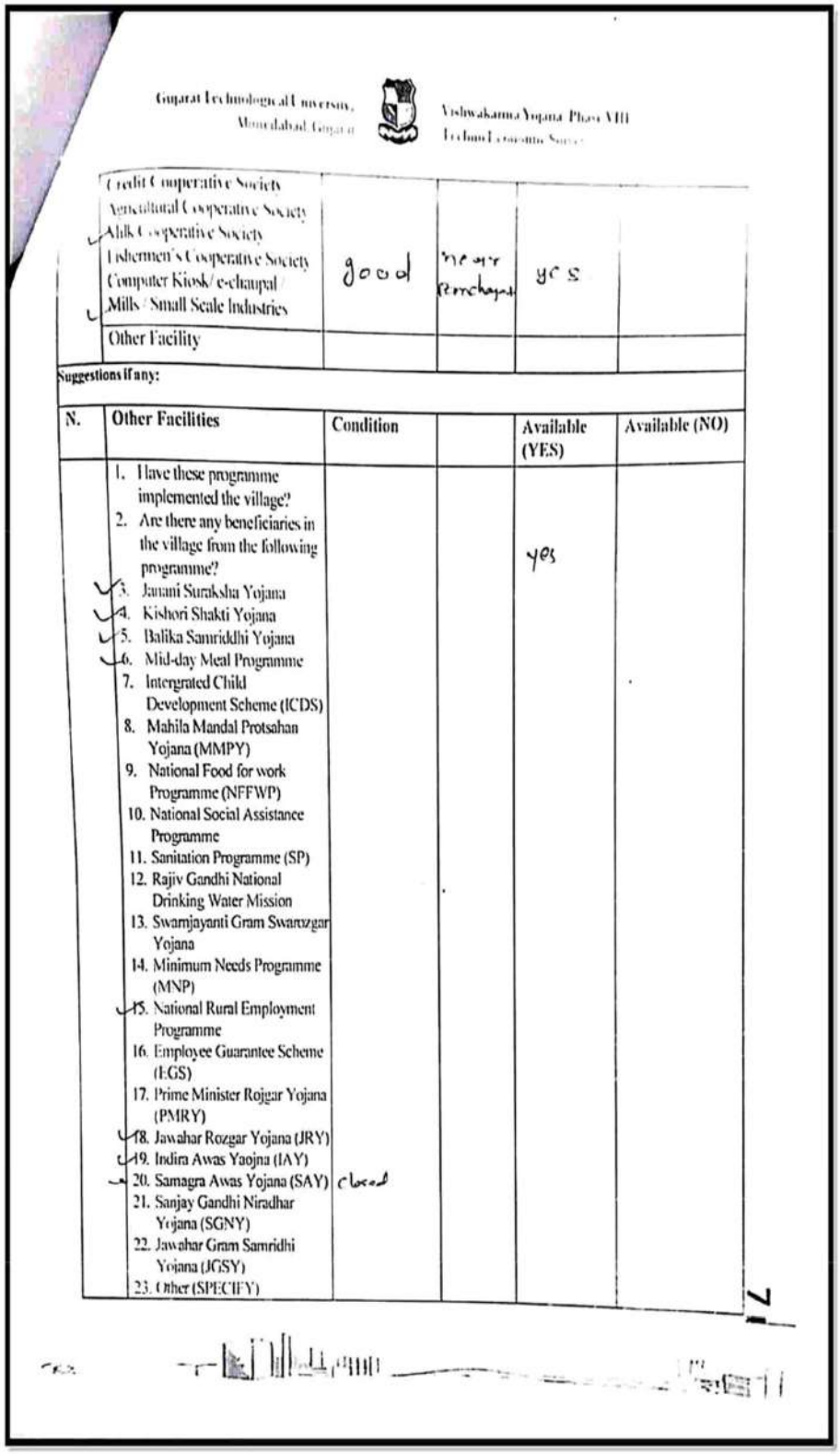
Suggestions if any:

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)	Gramtal	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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Vishwakarma Yojana Phase VIII
Technical Consultancy Service

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)				

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VI. SUSTAINABLE /GREEN INFRASTRUCTURE FACILITIES:

Sr. No.	Descriptions	Information/ Details	Adequate	Inadequate	Remarks
1.	Adoption of Non-Conventional Energy Sources/ Renewable Energy Sources	Not available			
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

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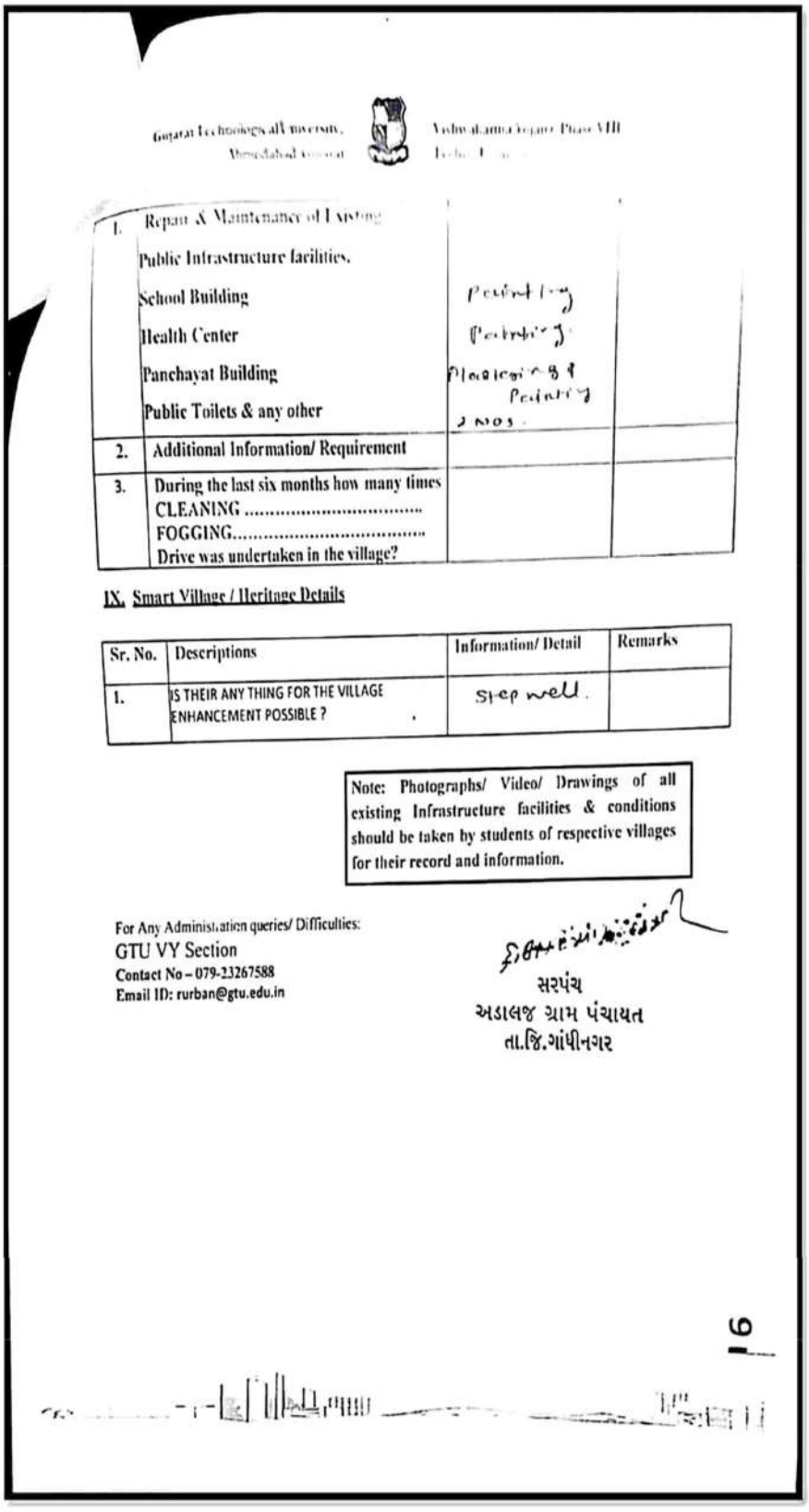

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Vishwakarma Yojana Phase VIII

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

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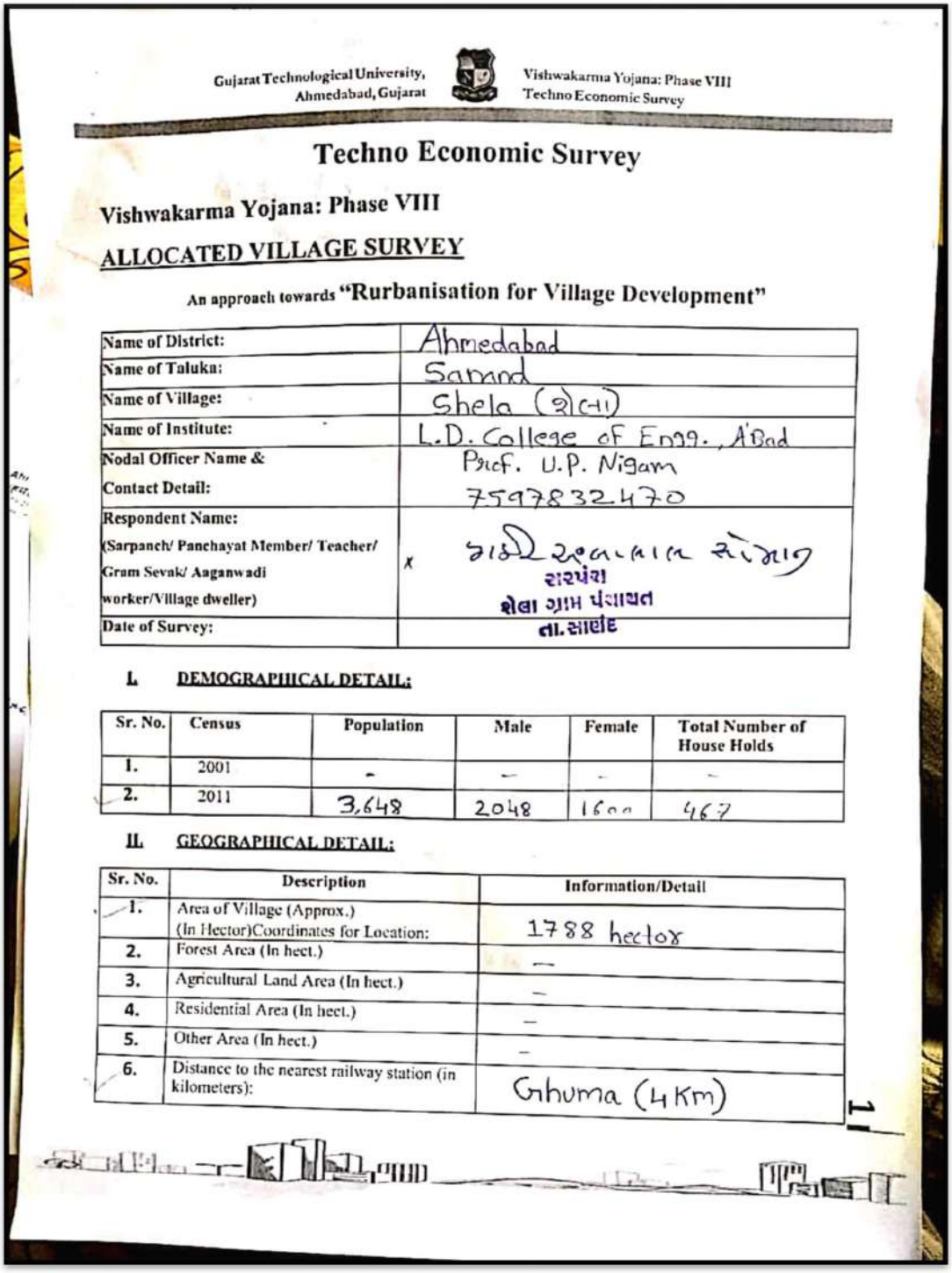
12.3 Scanned copy (fr Part-I), Original (for–Part-II) Shela Techno- Economic Survey



Gujarat Technological University, Ahmedabad, Gujarat

Vishwakarma Yojana: Phase VIII
Techno Economic Survey

Techno Economic Survey

Vishwakarma Yojana: Phase VIII

ALLOCATED VILLAGE SURVEY

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

Name of District:	Ahmedabad
Name of Taluka:	Sanand
Name of Village:	Shela (શેલા)
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)	✗ ગોવિંદભાઈ રબારી સરપંચ શેલા ગ્રામ પંચાયત તા. સાણંદ
Date of Survey:	

I. DEMOGRAPHICAL DETAIL:

Sr. No.	Census	Population	Male	Female	Total Number of House Holds
1.	2001	-	-	-	-
2.	2011	3,648	2048	1600	467

II. GEOGRAPHICAL DETAIL:

Sr. No.	Description	Information/Detail
1.	Area of Village (Approx.) (In Hector)Coordinates for Location:	1788 hector
2.	Forest Area (In hect.)	–
3.	Agricultural Land Area (In hect.)	–
4.	Residential Area (In hect.)	–
5.	Other Area (In hect.)	–
6.	Distance to the nearest railway station (in kilometers):	Ghuma (4 Km)

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7.	Name of Nearest Town with Distance:	Sanand (12 KM)
8.	Distance to the nearest bus station (in kilometers):	3km Telav
9.	Whether village is connected to all road for the any facility or town or City?	yes

III. OCCUPATIONAL DETAILS:

Name of Three Major Occupation groups in Village	1.	Agriculture (Farming)
	2.	labours
	3.	Job

Major crops grown in the village:	1.	wheat
	2.	Rice
	3.	Mustard (Tuver)

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	Borewell	Yes		in good Condition
2.	DUG WELL Protected Well Un Protected Well	–	–	–	–
3.	WATER FROM SPRING Protected Spring Unprotected Spring Rainwater Tanker Truck Cart With Small Tank	Rain water	Yes	–	–
4.	SURFACE WATER (RIVER/DAM/ LAKE/POND/STREAM/CANAL/ Irrigation Channel Bottled Water Hand Pump	Narmada Canal	yes	-	Good

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	Other(Specify)Lake/ Pond	—	—	—	—
Suggestions if any:					
B.	**Water Tank Facility**				
	Overhead Tank 1 Nos	Capacity: ltr			
	Underground Sump 1 Nos	Capacity: ltr			
Suggestions if any:	Need Maintenance				
C.	**The Type of Drainage Facility**				
	A. UNDERGROUND DRAINAGE	Yes	—	—	—
Suggestions if any:	Need Maintenance				
D.	**Road Network :All Weather/ Kutchha (Gravel)/ Black Topped pucca/ WBM**				
	Village approach road	Bitumen Road	Yes		in Good condition
	Main road	Bitumen Road	Yes		in Good Condition
	Internal streets	R.C.C. Road	Yes		Need Resurfacing Kaleta Road
	Nearest NH/SH/MDR/ODR Dist. in kms.	3 Kms			S.P Ring Road
Suggestions if any:					
E.	**Transport Facility**				
	Railway Station (Y/N) (If No than Nearest Rly Station---Kms)	-NO-			Ghuma (4 KM)
	Bus station (Y/N) Condition: (If No than Nearest Bus Station---Kms)	NO			Telav (3 KM)
	Local Transportation (Auto/ Jeep/Chhakda/ Private Vehicles/ Other)	Yes			Auto/Private Vehicles
Suggestions if any:					
F.	**Electricity Distribution**				
	(Y/N) Govt./ Private (Less than 6 hrs./ More Than 6 hrs)	Yes (Govt.)	Yes	—	24 hrs

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	Power supply for Domestic Use	good (24 hrs)	Yes	-	Available in whole Village
	Power supply for Agricultural Use	good (.)	Yes	-	-
	Power supply for Commercial Use	-	-	-	-
	Road/ Street Lights	Yes	-		LED Bulbs
	Electrification in Government Buildings/ Schools/ Hospitals	Good	Yes	-	in Good Condition
	Renewable Energy Source Facilities (Y/ N)	Yes	-	-	For street Light
	LED Facilities	Yes	-	-	For Street light

Suggestions if any:

G.	Sanitation Facility				
	Public Latrine Blocks If available than Nos.	Not Available	NO		
	Location Condition	Not Available	NO		
	Community Toilet (With bath/ without bath facilities)	Not Available	NO		
	Solid & liquid waste Disposal system available	Not Available	NO		
	Any facility for Waste collection from road	Garbage Van	Garbage Van		

Suggestions if any: Need Public Lavatory

H.	Main Source of Irrigation Facility:				
	TANK/POND				
	STREAM/RIVER	Tank			Water Supply available only For 3 hours
	CANAL	CANAL			
	WELL				
	TUBE WELL.	TUBEWELL			
	OTHER (SPECIFY)				

Suggestions if any:

I.	Housing Condition:				
	Kutchha/Pucca (Approx. ratio)	Pucca	Yes	-	20% Kutcha house

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V. SOCIAL INFRASTRUCTURAL FACILITIES:

Sr. No.	Descriptions	Information/ Detail	Adequate	Inadequate	Remarks
J.	**Health Facilities:**				
	ICDS (Anganwadi)	5 Five	Yes		
	Sub-Centre	NO			
	PHC	01 No.		Yes	
	BLOCK PHC	NO			
	CHC/RH	NO			
	District/ Govt. Hospital	NO			
	Govt. Dispensary	NO			
	Private Clinic	3 NO.	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: ....3....kms. (Telav Gram)				
Suggestions if any:					
K.	**Education Facilities:**				
	Aaganwadi/ Play group	05	Yes		Sufficient
	Primary School	01	Yes		in Good Condition
	Secondary school	NO	-	-	-
	Higher sec. School	NO	-	-	-
	ITI college/ vocational Training Center	NO	-	-	-
	Art, Commerce& Science /Polytechnic/ Engineering/ Medical/ Management/ other college facilities	Private College 02 no.	Yes	-	in Shela Village

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

Suggestions if any:

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

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

Suggestions if any:

M.	Other Facilities	Condition	Location	Available (YES)	Available (NO)
	Post-office	Good	Internal street	Yes	
	Telecommunication Network/ STD booth	-	-	-	No
	General Market	-	-	-	No
	Shops (Public Distribution System)	Good	Internal streets	Yes	
	Panchayat Building	Good	At entrance	Yes	
	Pharmacy/Medical Shop	Good	Internal streets	Yes	
	Bank & ATM Facility	Good	Internal streets	Yes	
	Agriculture Co-operative Society	Good	Internal streets	Yes	
	Milk Co-operative Soc.	-	-	-	No
	Small Scale Industries	-	-	-	No
	Internet Cafes/ Common Service Center/Wi Fi	-	-	-	No
	Youth Club	Good	At entrance	Yes	
	Mahila Mandal	Good	above medical shop	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 yes Good	Internal street	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	Good		yes	
	4. Kishori Shakti Yojana				No
	5. Balika Samriddhi Yojana				
	6. Mid-day Meal Programme	Good		yes	
	7. Intergrated Child Development Scheme (ICDS)				No
	8. Mahila Mandal Protsahan Yojana (MMPY)	Good		yes	
	9. National Food for work Programme (NFFWP)				No
	10. National Social Assistance Programme				No
	11. Sanitation Programme (SP)				No
	12. Rajiv Gandhi National Drinking Water Mission				No
	13. Swarnjayanti Gram Swarozgar Yojana				No
	14. Minimum Needs Programme (MNP)				No
	15. National Rural Employment Programme				No
	16. Employee Guarantee Scheme (EGS)				No
	17. Prime Minister Rojgar Yojana (PMRY)				No
	18. Jawahar Rozgar Yojana (JRY)				No
	19. Indira Awas Yaojna (IAY)				No
	20. Samagra Awas Yojana (SAY)				
	21. Sanjay Gandhi Niradhar Yojana (SGNY)	Good		yes	No
	22. Jawahar Gram Samridhi Yojana (JGSY)				No
	23. Other (SPECIFY)				

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VI. SUSTAINABLE /GREEN INFRASTRUCTURE FACILITIES:

Sr. No.	Descriptions	Information/ Details	Adequate	Inadequate	Remarks
1.	Adoption of Non-Conventional Energy Sources/ Renewable Energy Sources	For street lights Yes	Yes		
2.	Bio-Gas Plant Solar Street Lights Rain Water Harvesting System	No yes ~~No~~ Yes	~		Need to maintain Solar street lights
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	✓		
2.	Recent Projects going on for Development of Village	no			
3.	Any NGO working for village development	No			
4.	Any natural calamity in the village during the last one year: EARTHQUAKES FLOODS CYCLONE DROUGHT LANDSLIDES AVALANCHE OTHER (SPECIFY)	/ No /			

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VIII. ADDITIONAL INFORMATION/ REQUIREMENT:

Sr. No.	Descriptions	Information/ Detail	Remarks
1.	Repair & Maintenance of Existing Public Infrastructure facilities, School Building Health Center Panchayat Building Public Toilets & any other	No ongoing work No No No No	Recently Panchayat office is Renovated
2.	Additional Information/ Requirement	—	—
3.	During the last six months how many times CLEANING ..... FOGGING..... Drive was undertaken in the village?	Cleaning every month of Garbage Place	—

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.

સરપંચ
શેલા ગ્રામ પંચાયત
તા.સાણંદ

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

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3/11/2021

L. D. College of Engineering, Ahmedabad-380 015
એલ. ડી. કોલેજઑફ઼ ઇંજીનિયરિંગ, અહમદાવાદ -૩૮૦૦૧૫
Phone: 079-26306752 (Office), 26303190 Fax: 079-26303105, 26304118
Email:ldce_civilp@yahoo.com Website: www.ldce.ac.in

ન.: એલ.ડી.સી.ઇ./સીવીલ/વિશ્વકર્મા યોજના-૨૦૨૦ /વિલેજ/363 dt. 26/12/2020

પ્રતિ,
સરપંચશ્રી,
ગ્રામ:શેલાગામ
તાલુકા:સાણંદ
જિલ્લા:અમદાવાદ

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

માનનીય સરપંચ શ્રી,

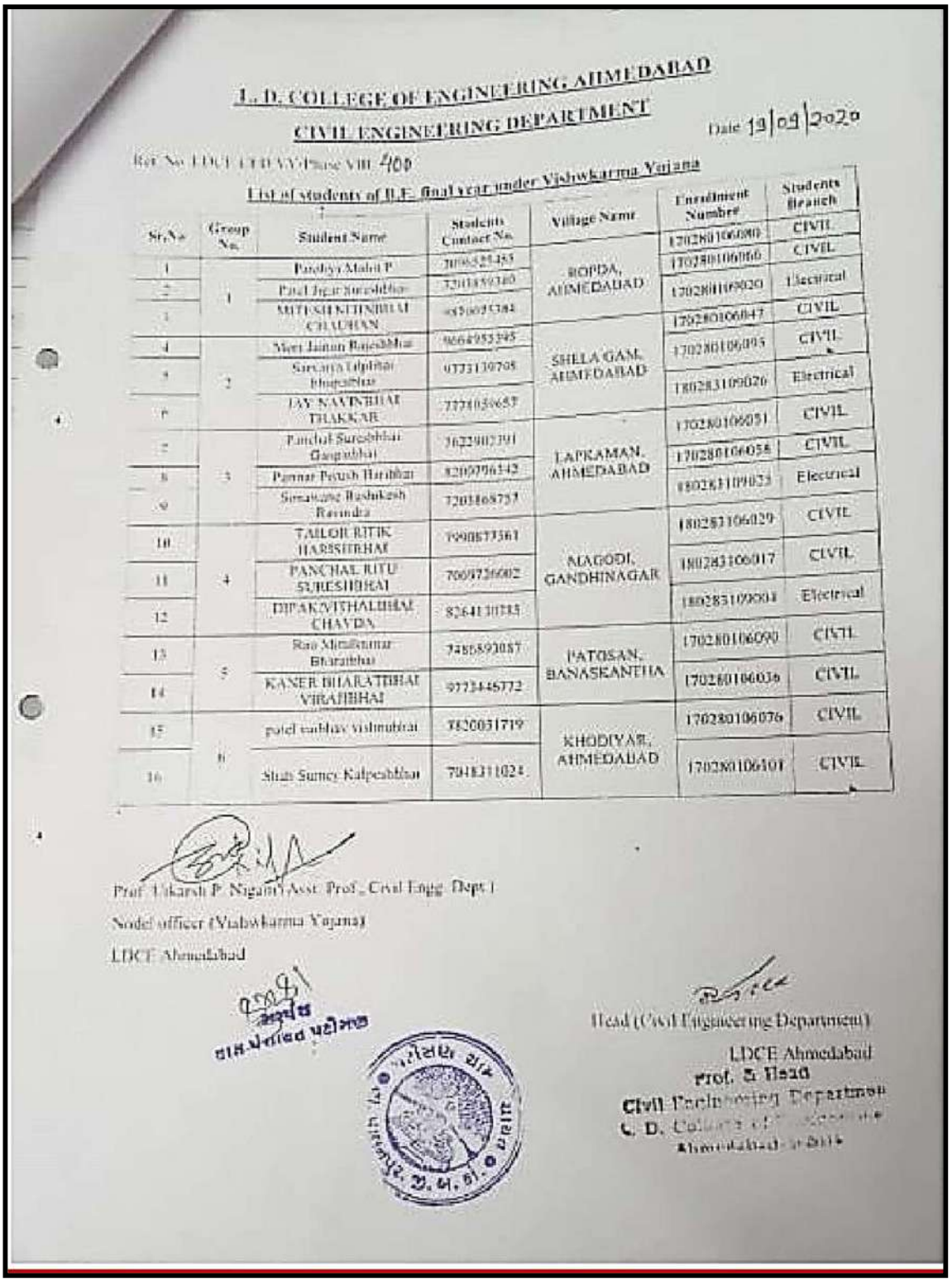
ઉપરોક્ત વિષય અન્વયે જનાણવવાનું કે ગુજરાત ટેક્નોલોજીકલ યુનિવર્સિટી, ગાંધીનગર હેઠળ ચાલતી વિશ્વકર્મા યોજના-૨૦૨૦ (ફેઝ-૮) માં લા. દ. ઇજનેરી કોલેજ ના વિધાર્થી દ્વારા ગુજરાત રાજ્યના ગ્રામના વિકાસમાં ભાગીદાર થઇ વિકાસ ના કામો ચાલતા રહે અને આ કાર્યક્રમના ભાગરૂપે ગ્રામની સમસ્યાઓનું ટેકનોલોજી ની સહાય થી નિરાકરણ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

આભાર સહ,

ખાતાના વડા (સીવીલ)
પ્રાધ્યાપક અને ખાતાના વડા
સિવિલ ઇજનેરી વિભાગ
એલ. ઈ. ઇજનેરી મહાવિદ્યાલય
અમદાવાદ પિન. ૩૮૦૦૧૫

બિડાણ: (૧). પ્રોજેક્ટના કાર્ય અંતર્ગત લીધેલ વિધાર્થીઓની યાદી.

3/11/2021



L. D. COLLEGE OF ENGINEERING, AHMEDABAD

CIVIL ENGINEERING DEPARTMENT

Date 19/09/2020

Ref. No: LDCE/VISHWAKARMA/Phase VIII/ 409

List of Students of B.E. final year under Vishwakarma Yojana

Sr.No	Group No.	Student Name	Students Contact No.	Village Name	Enrollment Number	Students Branch
1	1	Pandya Mahir P.	8866585455	RODA, AHMEDABAD	170280106080	CIVIL
2		Patel Jigar Sureshbhai	7201859360		170280106066	CIVIL
3		MITESHKUMAR CHAUHAN	9586053384		170280109020	Electrical
4	2	Meet Jainan Rajeshbhai	9664955395	SHELA GAM, AHMEDABAD	170280106047	CIVIL
5		Sarvaiya Utpalbhai Bhupatbhai	9773139705		170280106095	CIVIL
6		JAY NAVINBHAI THAKKAR	7778059655		180283109020	Electrical
7	3	Panchal Sureshbhai Gangabhai	3622902791	LAPKAMAN, AHMEDABAD	170280106051	CIVIL
8		Parmar Piyush Harishbhai	8200796142		170280106058	CIVIL
9		Sonawane Rushikesh Ravindra	7203868757		180283109023	Electrical
10	4	TAILOR RITIK HARSHBHAI	7990877361	ADAGODI, GANDHINAGAR	180283106029	CIVIL
11		PANCHAL RITU SURESHBHAI	7069726082		180283106017	CIVIL
12		DIPAKVITHALBHAI CHAVDA	8264130735		180283109004	Electrical
13	5	Rao Manikumar Bharatbhai	7435893087	PATOSAN, BANASKANTHA	170280106090	CIVIL
14		KANER BHARATBHAI VIRABHAI	9773445772		170280106036	CIVIL
15	6	patel subhav vishnubhai	7820031719	KHODIYAR, AHMEDABAD	170280106076	CIVIL
16		Shah Sumeet Kalpeshbhai	7048311024		170280106101	CIVIL

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

Nodal officer (Vishwakarma Yojana)

LDCE Ahmedabad

Head (Civil Engineering Department)

LDCE Ahmedabad

Prof. & Head

Civil Engineering Department

L. D. College of Engineering

Ahmedabad-380015

3/11/2021

12.4 Gap Analysis

VILLAGE GAP Analysis					
Village Facilities	Planning Commission/UDPFI Norms	Village Name	SHELA		
		Population: 5000			
		Existing	Required as per Norms	Future Projection Design	Gap
Social Infrastructure re Facilities					
Education					
Anganwadi	Each or Per 2500 population	8	2	-	+6
Primary School	Each Per 2500 population	6	1	-	+5
Secondary School	Per 7,500 population	3	1	-	+2
Higher Secondary School	Per 15,000 Population	1	1	-	0
College	Per 125,000 Population	0	0	-	0
Tech. Training Institute	Per 100000 Population	0	0	-	0
Agriculture Research Centre	Per 100000 Population	0	0	-	0
Skill Development Center	Per 100000 Population	0	0	-	0
Health Facility					
Govt/Panchyat Dispensary or Sub PHC or Health Centre	Each Village	1	2	-	-1
Primary Health & Child Health Center	Per 20,000 population	1	1	-	0
Child Welfare and Maternity Home	Per 10,000 population	0	0	-	0
Multispeciality Hospital	Per 100000 Population	0	0	-	0
Public Latrines	1 for 50 families (if toilet is not there in home, specially for slum pockets & kutcha house)	0	1	-	-1
Physical Infrastructure Facilities					
Transportation		Adequate			
Pucca Village Approach Road	Each village	Adequate	10 km approach road		
Bus/Auto Stand provision	All Villages connected by PT (ST Bus or Auto)	Inadequate	No pick up stand available (connected by ST bus, auto, AMTS)		
Drinking Water (Mini. 70 lpcd)		Adequate			
Over Head Tank	1 /3 of Total Demand	480000 lit.			
U/G Sump	2 /3 of Total Demand	100000 lit			
Drainage Network - Open		Inadequate			
Drainage Network - Cover		adequate	90% coverd		
Waste Management System		Inadequate			
Socio- Cultural Infrastr ucture Facilities					
Community Hall	Per 10000 Population	0	1	-	-1
community hall and Public Library	Per 15000 Population	0	1	-	-1
Cremation Ground	Per 20,000 population	1	1	-	0
Post Office	Per 10,000 population	1	0	-	+1
Gram Panchayat Building	Each individual/group panchayat	1	1	-	0
APMC	Per 100000 Population	0	0	-	0
Fire Station	Per 100000 Population	0	0	-	0
Public Garden	Per village	1	1	-	0
Police post	Per 40,000Population	1	1	-	0
Shopping Mall	Shops are available				
Electrical D design					
Electricity Network		Adequate	66 kv Substation		
Any Smart Village Facility					
Technology					
		ESR cap	0		
		Sump cap	0		
		Lat	0		

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

Village	Part I	Part –II
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)
	Solar Based Pumpset For Agriculture (Electrical)	GSM Based Well Water Level Monitor System (Electrical)
	Design Of Solar Street Light (Electrical)	Automatic Phase Sequence Selector System (Electrical)
	Design of Combined solar powerfor the use of high power pump/motor for irrigation (Electrical)	Soft Starter Using 3 Phase Induction Motor (Electrical)
Ropda (Ahmedabad)	Primary Health Centre (Civil)	Community Hall (Civil)
	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)
Shela Gam (Ahmedabad)	**Design of Public Garden (CI)** **Design of Public Health centre (CI)** **Design of Bio gas Plant (CI)** **Design of Public Toilet (CI)** **Design of Public Library (CI)** **Design of Rainwater Harvesting (CI)** **Design of solar panel (EE)** **Design of smart bin concept (EE)** **Design of WiFi tower (EE)**	**Design of anganwadi building (CI)** **Design of pick-up stand (CI)** **Design of post office (CI)** **Design of skill development center (CI)** **Design of community hall (CI)** **Design of animal hospital (CI)** **Design of over/under voltage protection in rural areas (CE)** **Design of an intelligent and efficient light control system (CE)** **Design of smoke detector alarm circuit (CE)**

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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 system (Electrical)	Smart dustbin management system (Electrical)
	GSM board synchronization with agriculture pump (Electrical)	Automatic bird repelled (Electrical)
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)	Community Center (Civil)
	Bio Gas Plant (Civil)	Vegetable Market Yard (Civil)
Patosan (Banaskantha)	Primary Health Centre (Civil)	Library (Civil)
	Solar Water Distribution System (Civil)	Fire station (Civil)
	Park (Civil)	Veterinary hospital (Civil)
	Library (Civil)	Public garden (Civil)
	Community Hall (Civil)	Post office (Civil)
	Toilet (Civil)	Bank and ATM (Civil)

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

Ideal Village (Punsari)

	
Nand Ghar	Solar Street Light
	
Door to Door Waste Collection	Post Office
	
RO Water Plant	CCTV Camera
	
House Latrine Project	Agro Service Centre

3/11/2021

Medical Shop

Cyber Café

Punsari Entrance Gate

Bus Stand and Mobile Toilet

Approach Road

Panchayat Office

SBI Punsari

Primary School

3/11/2021

SBI ATM

Ration Shop

Punsari
Sarpanch

Smart Village (Adalaj)

Health Centre

Anganwadi

Sahakari
Mandali

Temple

3/11/2021

ADC Bank & ATM

Internal Streets

Anganwadi

Panchayat Office

Water Tank

Street Light And PAS

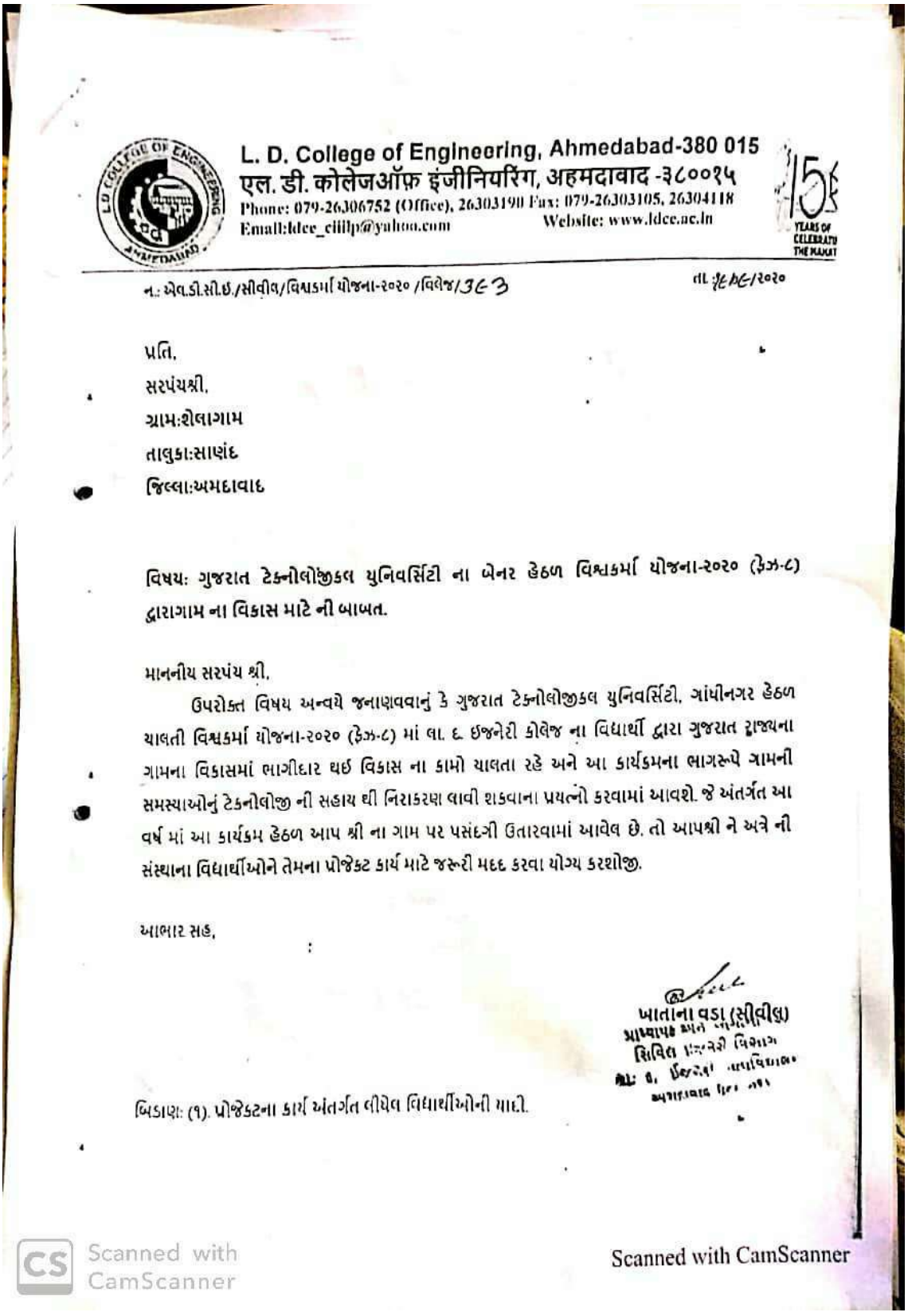
Main Cross Road

Main Street

3/11/2021

12.7 Village Interaction Report with the photograph as a report format

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



L. D. College of Engineering, Ahmedabad-380 015
એલ. ડી. કોલેજઑફ ઇંજીનિયરિંગ, અહમદાવાદ -૩૮૦૦૧૫
Phone: 079-26306752 (Office), 26303190 Fax: 079-26303105, 26304118
Email:ldce_ciiilp@yahoo.com Website: www.ldce.ac.in

15 YEARS OF CELEBRATING THE MARVEL

ન.: એલ.ડી.સી.ઇ./સીવીલ/વિશ્વકર્મા યોજના-૨૦૨૦ /વિલેજ/૩૯૩ તા. ૧૬/૧૨/૨૦૨૦

પ્રતિ,
સરપંચશ્રી,
ગ્રામ:શેલાગામ
તાલુકા:સાણંદ
જિલ્લા:અમદાવાદ

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

માનનીય સરપંચ શ્રી,

ઉપરોક્ત વિષય અન્વયે જનાણવવાનું કે ગુજરાત ટેક્નોલોજીકલ યુનિવર્સિટી, ગાંધીનગર હેઠળ ચાલતી વિશ્વકર્મા યોજના-૨૦૨૦ (ફેઝ-૮) માં લા. દ. ઇજનેરી કોલેજ ના વિધાર્થી દ્વારા ગુજરાત રાજ્યના ગામના વિકાસમાં ભાગીદાર થઇ વિકાસ ના કામો ચાલતા રહે અને આ કાર્યક્રમના ભાગરૂપે ગામની સમસ્યાઓનું ટેકનોલોજી 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 વિધાર્થીઓને તેમના પ્રોજેક્ટ કાર્ય માટે જરૂરી મદદ કરવા યોગ્ય કરશોજી.

આભાર સહ,

ખાતાના વડા (સીવીલ)
પ્રાધ્યાપક અને [illegible]
સિવિલ ઇજનેરી વિભાગ
એલ. ડી. ઇજનેરી મહાવિદ્યાલય
અમદાવાદ [illegible]

બિડાણ: (૧). પ્રોજેક્ટના કાર્ય અંતર્ગત લીધેલ વિધાર્થીઓની યાદી.

3/11/2021

CHAPTER 13.....SUSTAINABLE DESIGN PLANING PURPOSAL (PROTOTYPE DESIGN) PART 2

13.1 Design Proposals

Proposed Design in the Villages:

1. Design of anganwadi building (CIVIL)

2. Design of pick up stand (CIVIL)

3. Design of post office (CIVIL)

4. Design of skill development center (CIVIL)

5. Design of community hall (CIVIL)

6. Design of animal hospital (CIVIL)

7. Design of over/under voltage protection in rural areas (ELECTRICAL)

8. Design of an intelligent and efficient light control system (ELECTRICAL)

9. Design of smoke detector alarm circuit (ELECTRICAL)

8.1 Design Proposals

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 preconstruction and design phase. Conceptual estimates are often created throughout the preconstruction 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.

Design of anganwadi building

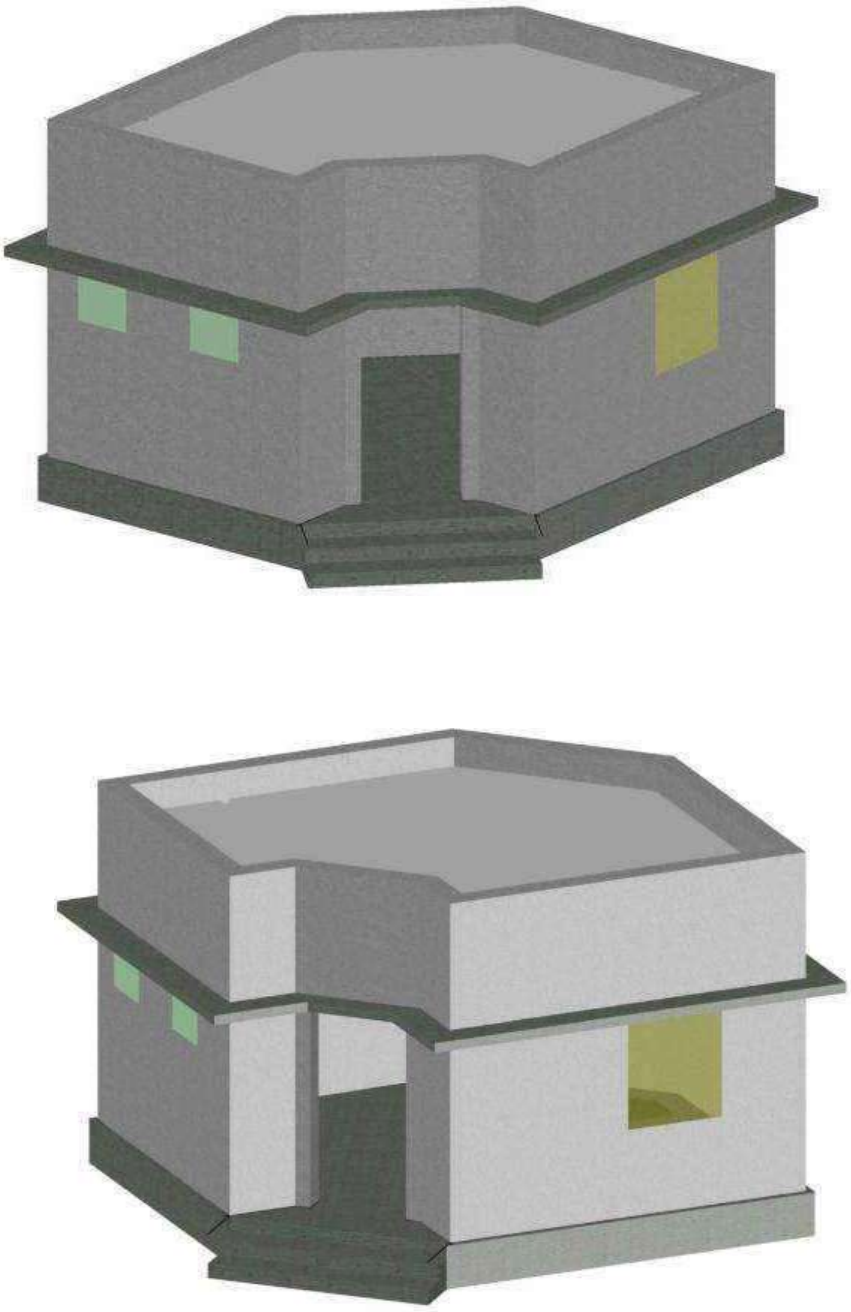


FIG.72: PROPOSED DESIGN FOR ANGANWADI

PROPOSED DESIGN FOR ANGANWADI AT SHELA, SANAD, AHMEDABAD							
MEASUREMENT SHEET							
ITEM	DESCRIPTION	NO	L	B/W	H/D	QUANTIY	UNITS
1.	Excavation for foundation.	1	18.00	0.50	1.0	9.000	9.000 cum
2.	C.C in foundation (M25 grade)	1	18.00	0.50	0.20	1.800	1.800 cum
3.	Masonry In foundation upto plinth.	1	18.00	0.36	1.25	8.100	8.100 cum
4.	Masonry in superstructure. Deduction for masonry.	1	18.00	0.23	2.88	11.920	10.615 cum
	W	2	1.20	0.23	2.10	0.660	
	V	2	0.60	0.23	0.60	0.165	
	D	1	1.00	0.23	2.10	0.480	
		Total deduction				1.305	
		Net masonry work					
5.	R.C.C. slab 120mm thick (M25 grade). Area of slab = 22.50sqmt	22.50 X 0.12				2.70	2.70 cum
6.	R.C.C. work for lintel. 10cm thick (M25 grade).	1	18.97	0.53	0.10	1.00	1.000 cum
7.	Earth filling in plinth, area of plinth = 22.50 sq.mt.	22.50 X 0.375				8.44	8.44 cum
8.	Floor finish 25 mm thick.	As per above				22.500	22.0 sq.mt
9.	12mm thick internal smooth plaster.	19 X 2.80				53.200	50.03 cum
	Deduction.						
	W	2	1.20	-	1.20	4.800	
	V	2	0.6	-	0.6	0.720	
	D	1	1.0	-	2.10	2.100	
	Addition of WC	1	2.12	-	2.10	4.450	
		Total deduction				7.620	
		Net internal plaster				50.030	
10.	20mm thick outer plaster.	1	19.90		4.56	90.740	83.120 sq.mt
	W	2	1.20	-	1.20	4.800	
	V	2	0.60	-	0.60	0.720	
	D	1	1.00	-	2.10	2.100	
		Total deduction				7.620	

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		Net outer plaster work		
11.	Outer white washing.	As per above		83.120 sq.mt
12.	Internal white washing.	As per above		50.030 sq.mt.
13.	Earth filling in plinth.	20.48 X 0.375		7.680 cum
14.	C.C bedding for flooring.	20.48 X 0.050		1.020 cum

***For Detail design drawing of anganwadi please refer sheet attached at the end of report.**

PROPOSED DESIGN FOR ANGANWADI AT SHELA, SANAD, AHMEDABAD
ABSTRACT SHEET

Sr. no.	Description of item	Quantity	Rate	Unit	Total amount
1.	Excavation for foundation up to 1.5mtstacking out useful material and disposed of excess material.	9.000	93.20	Cum	838.800
2.	Concreting work in M25 grade including formwork and reinforcement.	5.500	13000	Cum	71500.000
3.	First class Masonry work.	18.720	3250.0	Cum	60840.000
4.	12mmt thick internal smooth plaster work.	50.030	156.00	Sq.mt	7804.680
5.	20mm thick outer plaster.	83.120	170.00	Sq.mt	14130.400
6.	Outer white washing.	50.030	7.40	Sq.mt	370.222
7.	Earth filling in plinth.	7.680	70.00	Cum	537.600
8.	Painting work internal and outer.	133.15	70.20	9347.13	
9.	C.C. bedding.	1.020	2000.00	cum	2040.000
		Cost			**158061.17**
		2% water charge			3161.234
		10% contractor's profit			15806.17
		Total cost			**1,77,030 Rs**

MATERIAL CONSUMPTION SHEET

Sr. No.	Item/ materia	Quantity	Units
1.	Cement (53 grade)	60	Bag
2.	Sand	2.09	Cum
3.	Aggregate	4.18	Cum
4.	Steel (FE500)	8mm dia. – 142.623	Kg

TABLE 17 MATERIAL CONSUMPTION SHEET OF ANGANWADI

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Design of pick-up stand

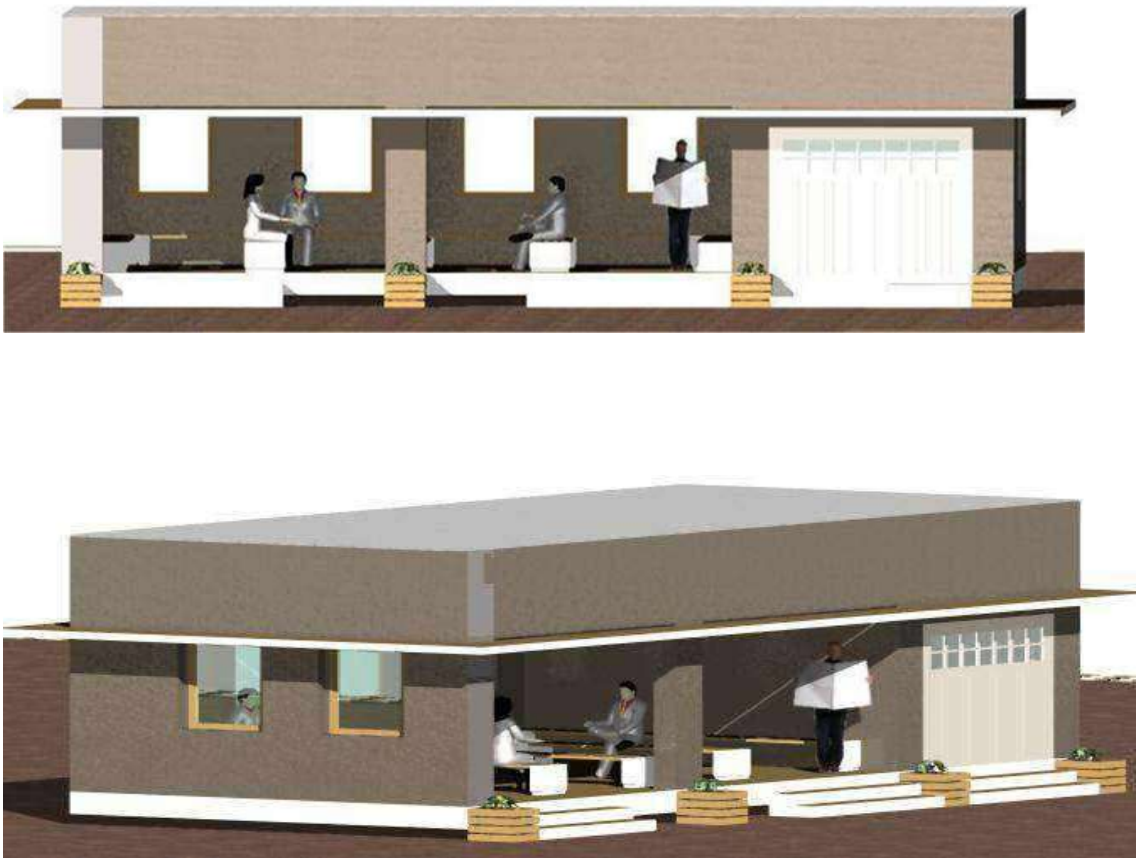

FIG.73: PROPOSED DESIGN FOR PICK-UP STAND

PROPOSED DESIGN FOR PICK-UP STAND AT SHELA, SANAD, AHMEDABAD

MEASUREMENT SHEET

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
		3.00	-	3.00	9.000	sq.mt

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	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

***For Detail design drawing of pick-up stand please refer sheet attached at the end**

PROPOSED DESIGN FOR PICK-UP STAND AT SHELA, SANAD, AHMEDABAD

ABSTRACT SHEET

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.	112.65	7.80	Sq.mt	878.770
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

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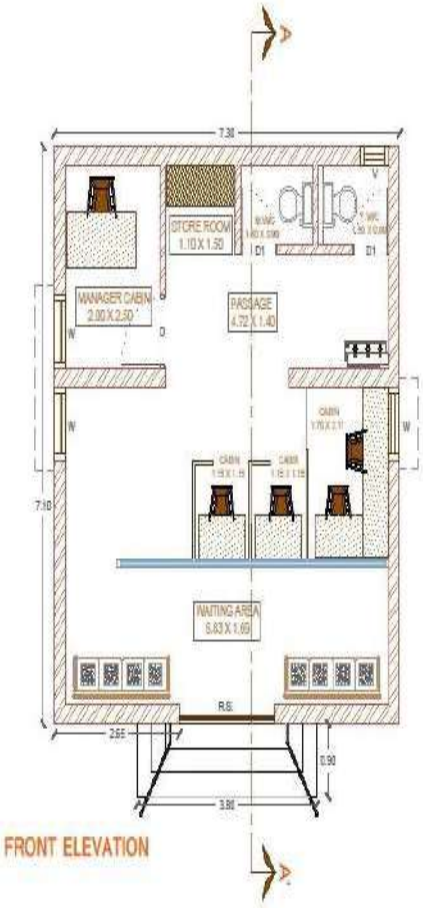
Sr. No	Item	Quantity	Unit
1.	Cement	369.66	Bags
2.	Sand	23.195	Cum
3.	Aggregate	16.87	Cum
4.	Brick	12000	Nos.
5.	Steel	16mm Dia. = 980	Kg.
		8mm Dia. = 390	

TABLE 19 MATERIAL CONSUMPTION SHEET OF PICKUP STAND

Design of post office



NOTE

All Dimensions are in M (meter) unless and untile stated

Total area of plot

07.30 x 07.10 m = 51.83 sq.mt.

SCHEDULE OF OPENING

DOOR		
	R.S.	= 2.00 X 2.10 mt.
	D	= 0.90 X 2.10 mt.
	D1	= 0.76 X 2.10 mt.
WINDOW		
	W	= 0.90 X 1.20 mt.
VENTI.		
	V	= 0.60 X 0.60 mt.

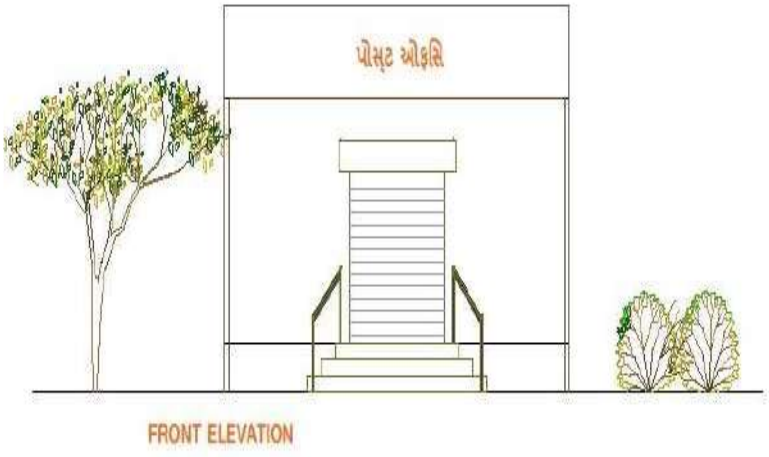


FIG.74: PROPOSED DESIGN FOR POST OFFICE

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PROPOSED DESIGN FOR POST OFFICE AT SHELA, SANAD, AHMEDABAD

MEASUREMENT SHEET

Sr. no.	Description	no.	Length	Width	Height	Quantity	Total Quantity
1	earth excavation						34.42 cum.m
	for wall	1	34.05	0.9	1.11	34.016	
	for step	1	4	1	0.1	0.4	
2	P.C.C.						6.53 cum. m
	for Foundation	1	34.05	0.9	0.2	6.129	
	for step	1	4	1	0.1	0.4	
3	2nd class masonry						22.063 cum.m
	0.6 mm thick wall	1	34.35	0.6	0.2	4.122	
	0.4 mm thick wall	1	34.55	0.4	0.2	2.764	
	0.3 mm thick wall	1	34.65	0.3	1.46	15.177	
4	DPC	1	34.65	0.3		10.39	10.39 sq.m
5	1st class brick masonry for superstructure	1	34.72	0.23	3	23.95	25.94 Cum.m
	Partition wall	1	6.72	0.12	3	2.42	
	Parapet wall	1	27.88	0.12	1.15	3.85	
						30.22	
	Deduction						
	O	1	2.6	0.23	3	1.794	
	R.S.	1	2	0.23	2.1	0.966	
	D	1	0.9	0.12	2.1	0.223	
	D1	1	0.76	0.12	2.1	0.192	
	W	3	0.9	0.23	1.2	0.745	
	V	1	0.6	0.23	0.6	0.0828	
	Lintel						
	R.S.	1	2.3	0.23	0.15	0.079	
	D	1	1.2	0.12	0.15	0.0216	
	D1	1	0.6	0.12	0.15	0.0191	
	W	3	1.2	0.23	0.15	0.124	
	V	1	0.9	0.23	0.15	0.031	
						4.276	

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6	R.C.C. work						
	Lintel						
	R.S.	1	2.3	0.23	0.15	0.079	
	D	1	1.2	0.12	0.15	0.0216	
	D1	1	0.6	0.12	0.15	0.0191	5.458 cum.m
	W	3	1.2	0.23	0.15	0.124	
	V	1	0.9	0.23	0.15	0.031	
						0.2747	
	Slab	1	7.3	7.1	0.1	5.183	
7	Steel						428.53 Kg
	1% of R.C.C.					428.53	
8	wood work						
	D	1	0.9		2.1	1.89	6.72 sq.m
	D1	1	0.76		2.1	1.59	
	W	3	0.9		1.2	3.24	
9	Internal plaster						
	ceiling front area	1	6.83	3.91		26.705	
	manager cabin	1	2	2.5		5	
	store room	1	3.1	0.99		3.069	
	W.C.	1	1.5	0.99		1.485	
	Passage	1	4.72	1.4		6.608	
	Wall						
	Front area	2	6.83		3	40.98	
		2	3.91		3	23.476	191.91 sq.m
	manager cabin	2	2		3	12	
		2	2.5		3	15	
	store room	2	3.1		3	18.6	
		2	0.99		3	5.94	
	W.C.	2	1.5		3	9	
		2	0.99		3	5.94	
	Passage	2	4.72		3	28.32	
		2	1.4		3	8.9	
						211	

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	Deduction						
	O	1	2.6		3	4.2	
	R.S.	1	2		2.1	7.8	
	D	1	0.9		2.1	1.89	
	D1	1	0.76		2.1	1.596	
	W	3	0.9		1.2	3.24	
	V	1	0.6		0.6	0.36	
						19.086	
10	**Outer plaster**						
	Wall	2	7.3		4.75	69.35	
		2	7.1		4.75	67.45	
	parapet top	2	7.3	0.12		1.752	**164.49 sq.m**
		2	7.1	0.12		1.704	
	parapet inside	2	7.06		1.15	16.238	
		2	6.86		1.15	15.778	
						172.272	
	Deduction					7.8	
11	**Flooring**	1				42.86	**42.86 sq.m**
12	**Skirting**						
	Front area	2	6.83			13.66	
		2	3.91			7.82	
	manager cabin	2	2			4	
		2	2.5			5	
	store room	2	3.1			6.2	
		2	0.99			1.98	
	W.C.	2	1.5			3	
		2	0.99			1.98	
	Passage	2	4.72			9.44	
		2	1.4			2.8	**49.62 m**
						55.88	
	Deduction						
	D	1	0.9			0.9	
	D1	1	0.76			0.76	
	R.S.	1	2			2	
	O	1	2.6			2.6	
						6.26	

***For Detail design drawing of pick-up stand please refer sheet attached at the end of report**

PROPOSED DESIGN FOR POST OFFICE AT SHELA, SANAD, AHMEDABAD
ABSTRACT SHEET

Sr. no.	Quantity	Description	Rate	Per	Amount
			Rs.		Rs.
1	34.42	Earth excavation	150	m3	5163
2	6.53	P.C.C.	3900	m3	25467
3	22.063	Brick masonry upto plinth	5200	m3	114728
4	10.39	DPC	120	m2	1247
5	25.94	Brick masonry for super structure	4900	m3	127106
6	5.458	R.C.C. work	4300	m3	23470
7	428.53	Steel	60	Kg	25712
8	65	wood work	2000	m2	130000
9	191.91	Internal plaster	260	m2	49897
10	164.49	Outer plaster	310	m2	50992
11	42.86	Flooring	450	m2	19287
12	49.62	Skirting	50	m	2481
					575550
		ADD 3% CONTIGENCIES			17267
		ADD 2% LABOUR CHARGES			11511
					604328
*ALL ABOVE RATE FILLED MAY VARY DUE TO MARKET INFLATION			GRAND TOTAL		605000

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Design of skill development center

- **Scenario :-**

There is no Skill Development in whole village, so there is instant need of bank in that village.

By keeping in this mind we proposed this design.

- **Existing situation** :-

Right now no any Skill Development in is available so there is no photograph of any existing

Building Of bank.

- **Benefits :-**

It also aims to create opportunities for the development of talent within the country and improve the overall scope and space for underdeveloped sectors.

PROPOSED DESIGN FOR SKILL DEVELOPMENT CENTER AT SHELA, SANAD, AHMEDABAD

MEASURMENT SHEET

Sr. No	Item Description	No.	Length	Width/	Height	Quantity	
1	CENTER LINE LENGTH						
	= 93M						
2	EARTHWORK IN FOUNDATION						
		1	93.00	0.9	1.2	100.44	cu m
3	P.C.C. IN FOUNDATION						
		1	93.00	0.90	0.15	12.56	cu m
4	BRICK MASONARY IN FOUNDATION						
	FIRST STEP: =93-(1/2)X0.6X15	1	88.20	0.60	0.10	5.29	cu m
	SECOND STEP: 93-(1/2)X0.5X15	1	89.00	0.50	0.10	4.45	cu m
	THIRD STEP: 93-(1/2)X0.4X15	1	89.80	0.40	0.10	3.59	cu m
	FOURTH STEP: 93-(1/2)X0.3X15	1	90.60	0.30	0.75	20.39	cu m
					Total	33.72	cu m
5	Earth Filling in Plinth						
	Seminar room (6m x 4m)	1	6.00	4.00	0.45	10.80	cu m
	Workshop (11.7m x 4m)	1	11.70	4.00	0.45	21.06	cu m
	Class room 1 (3m x 4m)	1	3.00	4.00	0.45	5.40	cu m
	Class room 2 (3m x 4m)	1	3.00	4.00	0.45	5.40	cu m
	Staff room (3m x 4m)	1	3.00	4.00	0.45	5.40	cu m
	Computer room (8.11m x 4m)	1	8.11	4.00	0.45	14.60	cu m
	Meeting room (4.8m x 3.7m)	1	4.80	3.70	0.45	7.99	cu m
	Men's Toilet (3m x 2m)	1	3.00	2.00	0.45	2.70	cu m
	Women's Toilet (3m x 2m)	1	3.00	2.00	0.45	2.70	cu m
	Reception Area (9.1m x 8.3m)	1	9.10	8.30	0.45	33.99	cu m
					TOTAL	99.24	cu m
6	Damp Proof Course(DPC)						
	93 - ((0.3/2)*16)						
	90.6	1	90.60	0.30		27.18	sq. m
7	Brick Work in Super Structure						
	93 - ((0.3/2)*16)						

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	90.6	1	90.60	0.30	3.00	81.54	cu m
					Total	81.54	cu m
8	Deduction:						
	Door:						
	D(1.0 X 2.10 m)	9	1.00	0.30	2.10	5.67	cu m
	D1(2.0 X 2.10 m)	1	2.00	0.30	2.10	1.26	cu m
	Windows:						
	W(1.20 X 1.50 m)	16	1.20	0.30	1.50	8.64	
	Ventilation:						
	V1 (0.60 x 0.90 m)	2	0.60	0.30	0.90	0.32	cu m
					Total	15.89	cu m
9	Lintel:						
	Door:						
	D(1.0 X 2.10 m)(L= 1.20+0.15+0.15)	9	1.30	0.30	0.15	0.53	cu m
	D1(2.0 X 2.10 m)	1	2.30	0.30	0.15	0.10	cu m
	Windows:						
	W(1.20 X 1.50 m)	16	1.50	0.30	0.15	1.08	cu m
	Ventilation:						
	V1 (0.60 x 0.90 m)	2	0.90	0.30	0.15	0.08	cu m
					Total	1.79	cu m
10	Total Brickwork after deduction				Total	63.86	cu m
12	Slab						
	L = 18.6 m						
	B = 17.5 m						
	H = 0.250	1	18.60	17.50	0.25	81.38	cu m
13	Internal plaster						
	Seminar room (6m x 4m)	2	6.00		3.00	36	sq m

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		2	4.00		3.00	24	sq m
	Workshop (11.7m x 4m)	2	11.70		3.00	70.2	sq m
		2	4.00		3.00	24	sq m
	Class room 1 (3m x 4m)	2	3.00		3.00	18	sq m
		2	4.00		3.00	24	sq m
	Class room 2 (3m x 4m)	2	3.00		3.00	18	sq m
		2	4.00		3.00	24	sq m
	Staff room (3m x 4m)	2	3.00		3.00	18	sq m
		2	4.00		3.00	24	sq m
	Computer room (8.11m x 4m)	2	8.11		3.00	48.66	sq m
		2	4.00		3.00	24	sq m
	Meeting room (4.8m x 3.7m)	2	4.80		3.00	28.8	sq m
		2	3.70		3.00	22.2	sq m
	Men's Toilet (3m x 2m)	2	3.00		3.00	18	sq m
		2	2.00		3.00	12	sq m
	Men's toilet 1 (3.4m x 2.2m)	2	3.40		3.00	20.4	sq m
		2	2.20		3.00	13.2	sq m
	Women's Toilet (3m x 2m)	2	3.00		3.00	18	sq m
		2	2.00		3.00	12	sq m
	Reception Area (9.1m x 8.3m)	2	9.10		3.00	54.6	sq m
		2	8.30		3.00	49.8	sq m
14	Plaster for ceiling					601.86	sq m
	Seminar room (6m x 4m)	1	6.00	4.00		24	sq m
	Workshop (11.7m x 4m)	1	11.70	4.00		46.8	sq m
	Class room 1 (3m x 4m)	1	3.00	4.00		12	sq m
	Class room 2 (3m x 4m)	1	3.00	4.00		12	sq m
	Staff room (3m x 4m)	1	3.00	4.00		12	sq m
	Computer room (8.11m x 4m)	1	8.11	4.00		32.44	sq m
	Meeting room (4.8m x 3.7m)	1	4.80	3.70		17.76	sq m
	Men's Toilet (3m x 2m)	1	3.00	2.00		6	sq m
	Women's Toilet (3m x 2m)	1	3.00	2.00		6	sq m
	Reception Area (9.1m x 8.3m)	1	9.10	8.30		75.53	sq m
						244.53	sq m

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15	Outer plaster for different room						
	Seminar room (6m x 4m)	2	6.00		3.00	36	sq m
		2	4.00		3.00	24	sq m
	Workshop (11.7m x 4m)	2	11.70		3.00	70.2	sq m
		2	4.00		3.00	24	sq m
	Class room 1 (3m x 4m)	2	3.00		3.00	18	sq m
		2	4.00		3.00	24	sq m
	Class room 2 (3m x 4m)	2	3.00		3.00	18	sq m
		2	4.00		3.00	24	sq m
	Staff room (3m x 4m)	2	3.00		3.00	18	sq m
		2	4.00		3.00	24	sq m
	Computer room (8.11m x 4m)	2	8.11		3.00	48.66	sq m
		2	4.00		3.00	24	sq m
	Meeting room (4.8m x 3.7m)	2	4.80		3.00	28.8	sq m
		2	3.70		3.00	22.2	sq m
	Men's Toilet (3m x 2m)	2	3.00		3.00	18	sq m
		2	2.00		3.00	12	sq m
	Men's toilet 1 (3.4m x 2.2m)	2	3.40		3.00	20.4	sq m
		2	2.20		3.00	13.2	sq m
	Women's Toilet (3m x 2m)	2	3.00		3.00	18	sq m
		2	2.00		3.00	12	sq m
	Reception Area (9.1m x 8.3m)	2	9.10		3.00	54.6	sq m
		2	8.30		3.00	49.8	sq m
						601.86	
16	Outer plaster for boundary						
	L = 18.6 m	2	18.6		2	74.4	sq m
	B = 17.5 m	2	17.5		2	70	sq m
	Height = 2m					144.4	sq m
	Total plaster					1592.65	sq m
17	Deduction for Plaster						
	Door:						
	D(1.0 X 2.10 m)	9	1.00		2.10	18.9	sq m

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	D1(2.0 X 2.10 m)	1	2.00		2.10	4.2	sq m
	Windows:						
	W(1.20 X 1.50 m)	16	1.20		1.50	28.8	sq m
	Ventilation:						
	V1 (0.60 x 0.90 m)	2	0.60		0.60	0.72	sq m
						52.62	
18	Final plaster after Deduction					1540.03	sq m
19	R.C.C Work						
	Lintel:						
	Door:						
	D(1.0 X 2.10 m)(L= 1.20+0.15+0.15)	9	1.30	0.30	0.15	0.53	cu m
	D1(2.0 X 2.10 m)	1	2.30	0.30	0.15	0.10	cu m
	Windows:						
	W(1.20 X 1.50 m)	16	1.50	0.30	0.15	1.08	cu m
	Ventilation:						
	V1 (0.60 x 0.90 m)	2	0.90	0.30	0.15	0.08	cu m
					Total	1.79	cu m
	Slab						
	L = 18.6 m						
	B = 17.5 m						
	H = 0.250	1	18.60	17.50	0.25	81.38	cu m
20	Total R.C.C work					83.17	

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PROPOSED DESIGN FOR SKILL DEVELOPMENT CENTER AT SHELA, SANAD, AHMEDABAD

ABTRECT SHEET

NO.	ITEM DESCRIPTION	QUANTITY	RATE	PER	AMOUNT	RS
1	EXCAVATION WORK	100.44	160	CU.M.	16070.4	RS
2	P.C.C.	12.56	3000	CU.M.	37680	RS
3	TOTAL BRICK MASONARY	63.86	3200	CU.M.	204352	RS
4	PLASTERING	1540.03	175	SQ.M.	269505	RS
5	FLOOORING	244.53	850	SQ.M.	207851	RS
6	R.C.C. WORK	83.17	5010	CU.M.	416682	RS
7	WHITE WASHING	1540.03	20	SQ.M.	30800.6	RS
8	PAINTING	1540.03	30	SQ.M.	46200.9	RS
9	TOTAL AMOUNT				1229141	RS
10	CONTI 5%				61457.1	RS
11	10% CONTACTOR CHARGES				122914	RS
12	2% WATER CHARGES				24582.8	RS
13	TOTAL AMOUNT				1438095	RS

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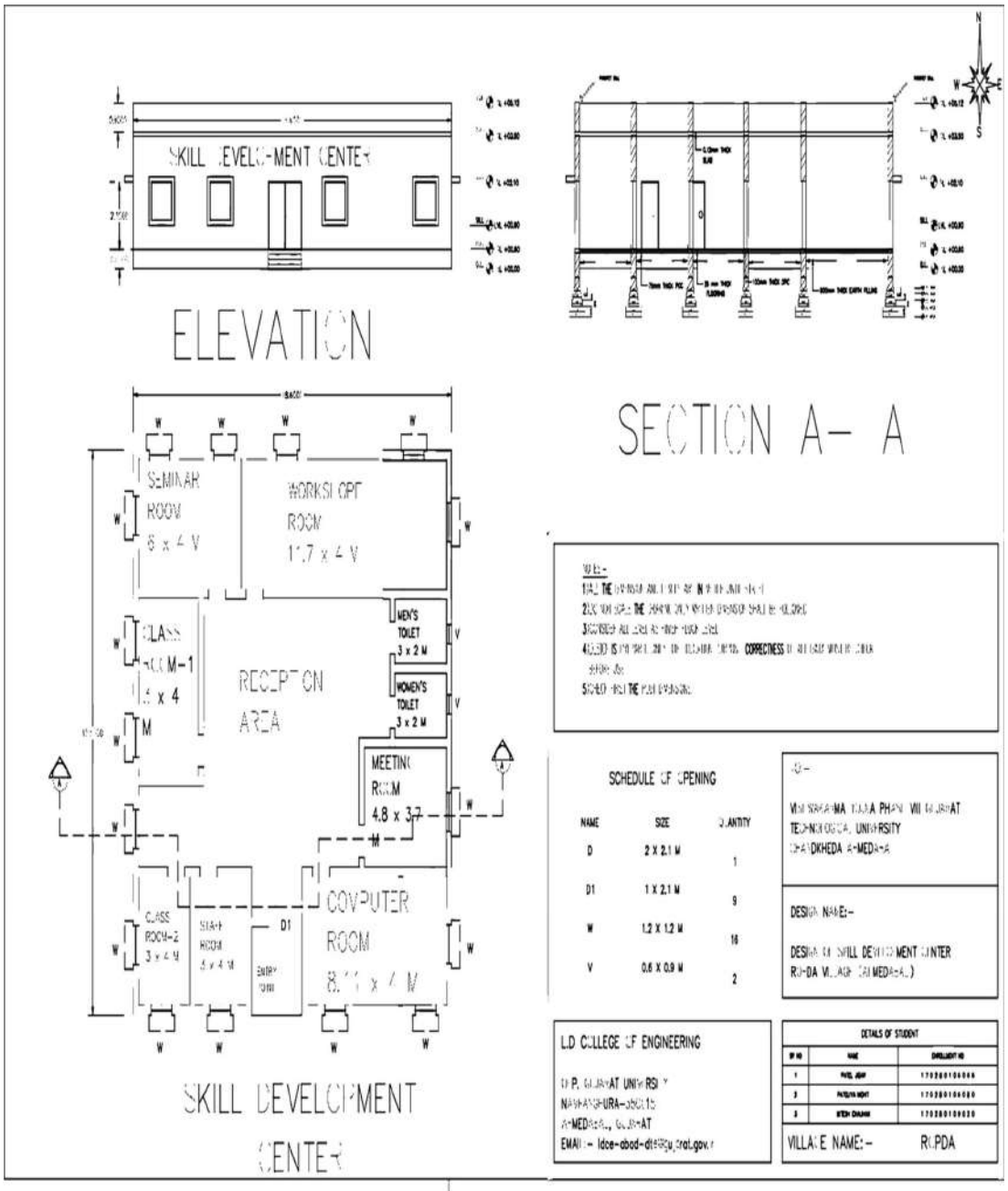

FIG.75: PROPOSED DESIGN FOR SKILL DEVELOPMENT CENTER

***For Detail design drawing of SKILL DEVELOPMENT CENTER please refer sheet attached at the end of report**

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Design of community hall

Scenario:-

There is no any community hall in whole village, so there is instant need of bank in that village. By keeping in this mind, we proposed this design.

Existing situation:-

Right now, no any community hall is available so there is no photograph of any existing building of bank.

Benefits:-

To boost their economies and revitalize their communities, many small towns throughout the United States are investing in community recreation centres.

PROPOSED DESIGN FOR COMMUNITY HALL AT SHELA, SANAD, AHMEDABAD

MEASURMENT SHEET

Sr. No	Item Description	No.	Length	Width	Height	Quantity	
1	Earthwork in Foundation						
	Footing (1.5m x 1.5m)	54	2	2	1.5	324.00	
	Depth From GL = 1.5 m						
2	P.C.C. in Foundation						
	Footing (1.5m x 1.5m)	54	1.70	1.70	0.10	15.61	
	Thickness = 0.10					15.61	**cu m**
3	Column(300mm x 300mm)						
	Base(1.5m x 1.5m)	54	1.50	1.50	0.20	24.30	
	Stem(0.30 x0.30)						
	height= 1.25+0.55 = 1.80 m	54	0.30	0.30	1.80	8.75	**cu m**
4	Plinth Beam						
	Beam (300 mm x 400 mm)						
	Beam - 1 (5.34 m length)	9	5.34	0.30	0.40	5.77	**cu m**
	Beam - 2 (4.067 m length)	9	4.07	0.30	0.40	4.39	**cu m**
	Beam - 3 (5 m length)	36	5.00	0.30	0.40	21.60	
	Beam - 4 (4.92 m length)	9	4.92	0.30	0.40	5.31	
	Beam - 5 (4.83 m length)	6	4.83	0.30	0.40	3.48	
	Beam - 6 (4.67 m length)	6	4.67	0.30	0.40	3.36	
	Beam - 7 (4.08m length)	6	4.08	0.30	0.40	2.94	
	Beam - 8 (6.41m length)	6	6.41	0.30	0.40	4.62	
	Beam - 9 (5.3m length)	6	5.30	0.30	0.40	3.82	
					TOTAL	10.16	cu m
5	Earth Filling in Plinth						

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	Reception (15.4m x 5m)	1	15.40	5.00	0.45	34.65	cu m
	Office (4m x 3m)	1	4.00	3.00	0.45	5.40	cu m
	Store room For Chair (3m x 3m)	2	3.00	3.00	0.45	8.10	cu m
	Hall (22m x 14.4m)	1	22.00	14.40	0.45	142.56	cu m
	Sound System (3m x 4m)	2	3.00	4.00	0.45	10.80	cu m
	Vegetable Room (5m x 5.3m)	1	5.00	5.30	0.45	11.93	cu m
	Store room For Kitchen (5m x 4m)	1	5.00	4.00	0.45	9.00	cu m
	Women's toilet (3m x 2m)	1	3.00	2.00	0.45	2.70	cu m
	Men's toilet (3m x 1.7m)	1	3.00	1.70	0.45	2.30	cu m
	Women's toilet 2 (4.7m x 3m)	1	4.70	3.00	0.45	6.35	cu m
	Men's toilet 2 (4.7m x 3m)	1	4.70	3.00	0.45	6.35	cu m
	Dinning (12.4m x 24m)	1	12.40	24.00	0.45	133.92	cu m
	Store room For Chair (5m x 3.2m)	1	5.00	3.20	0.45	7.20	cu m
	Kitchen (5m x 10.9m)	1	5.00	10.90	0.45	24.53	cu m
					TOTAL	371.12	cu m
6	Damp Proof Course(DPC)						
	263 - ((0.3/2)*29)						
	258.65	1	258.65	0.30		77.60	sq. m
7	Brick Work in Super Structure						
	263 - ((0.3/2)*29)						
	258.65	1	258.65	0.30	3.00	232.79	cu m
					Total	232.79	cu m
8	Deduction:						
	Door:						
	D(1.0 X 2.10 m)	16	1.00	0.30	2.10	10.08	cu m
	D1(2.0 X 2.10 m)	2	2.00	0.30	2.10	2.52	cu m
	Windows:						

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	W(1.20 X 1.50 m)	17	1.20	0.30	1.50	9.18	cu m
	Ventilation:						
	V1 (0.60 x 0.90 m)	8	0.60	0.90	0.60	2.59	cu m
					Total	24.37	cu m
9	Lintel:						
	Door:						
	D(1.0 X 2.10 m)(L= 1.20+0.15+0.15)	16	1.30	0.30	0.15	0.94	cu m
	D1(2.0 X 2.10 m)	2	2.30	0.30	0.15	0.21	cu m
	Windows:						
	W(1.20 X 1.50 m)	17	1.50	0.30	0.15	1.15	cu m
	Ventilation:						
	V1 (0.60 x 0.90 m)	8	0.90	0.30	0.15	0.32	cu m
					Total	2.61	cu m
10	Total Brickwork after deduction				Total	205.80	cu m
12	Slab						
	L = 24.6 m						
	B = 40.6 m						
	H = 0.250	1	24.60	40.60	0.25	249.69	cu m
13	Internal plaster						
	Reception (15.4m x 5m)	2	15.50		3.00	93	sq m
		2	5.00		3.00	30	sq m
	Office (4m x 3m)	2	4.00		3.00	24	sq m
		2	3.00		3.00	18	sq m

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	Store room For Chair (3m x 3m)	4	3.00		3.00	36	sq m
		4	3.00		3.00	36	sq m
	Hall (22m x 14.4m)	2	22.00		3.00	132	sq m
		2	14.40		3.00	86.4	sq m
	Sound System (3m x 4m)	2	3.00		3.00	18	sq m
		2	4.00		3.00	24	sq m
	Vegetable Room (5m x 5.3m)	2	5.00		3.00	30	sq m
		2	5.30		3.00	31.8	sq m
	Store room For Kitchen (5m x 4m)	2	5.00		3.00	30	sq m
		2	4.00		3.00	24	sq m
	Women's toilet (3m x 2m)	2	3.00		3.00	18	sq m
		2	2.00		3.00	12	sq m
	Men's toilet (3m x 1.7m)	2	3.00		3.00	18	sq m
		2	1.70		3.00	10.2	sq m
	Women's toilet 2 (4.7m x 3m)	2	4.70		3.00	28.2	sq m
		2	3.00		3.00	18	sq m
	Men's toilet 2 (4.7m x 3m)	2	4.70		3.00	28.2	sq m
		2	3.00		3.00	18	sq m
	Dinning (12.4m x 24m)	2	12.40		3.00	74.4	sq m
		2	24.00		3.00	144	sq m
	Store room For Chair (5m x 3.2m)	2	5.00		3.00	30	sq m
		2	3.20		3.00	19.2	sq m
	Kitchen (5m x 10.9m)	2	5.00		3.00	30	sq m
		2	10.90		3.00	65.4	sq m
14	Plaster for ceiling					1126.8	sq m
	Reception (15.4m x 5m)	1	15.40	5.00		77	sq m
	Office (4m x 3m)	1	4.00	3.00		12	sq m
	Store room For Chair (3m x 3m)	2	3.00	3.00		18	sq m
	Hall (22m x 14.4m)	1	22.00	14.40		316.8	sq m
	Sound System (3m x 4m)	2	3.00	4.00		24	sq m
	Vegetable Room (5m x 5.3m)	1	5.00	5.30		26.5	sq m

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	Store room For Kitchen (5m x 4m)	1	5.00	4.00		20	sq m
	Women's toilet (3m x 2m)	1	3.00	2.00		6	sq m
	Men's toilet (3m x 1.7m)	1	3.00	1.70		5.1	sq m
	Women's toilet 2 (4.7m x 3m)	1	4.70	3.00		14.1	sq m
	Men's toilet 2 (4.7m x 3m)	1	4.70	3.00		14.1	sq m
	Dinning (12.4m x 24m)	1	12.40	24.00		297.6	sq m
	Store room For Chair (5m x 3.2m)	1	5.00	3.20		16	sq m
	Kitchen (5m x 10.9m)	1	5.00	10.90		54.5	sq m
						847.2	sq m
16	Outer plaster for boundary						
	L = 24.6 m	1	24.6		2	49.2	sq m
	B = 40.6 m	2	40.6		2	162.4	sq m
	Height = 2m					211.6	sq m
	Total plaster					2185.6	sq m
17	Deduction for Plaster						
	Door:						
	D(1.0 X 2.10 m)	16	1.00		2.10	33.6	sq m
	D1(2.0 X 2.10 m)	2	2.00		2.10	8.4	sq m
	Windows:						
	W(1.20 X 1.50 m)	17	1.20		1.50	30.6	sq m
	Ventilation:						
	V1 (0.60 x 0.90 m)	8	0.60		0.60	2.88	sq m
						75.48	
18	Final plaster after Deduction					2110.12	sq m

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19	R.C.C Work						
	Lintel:						
	Door:						
	D(1.0 X 2.10 m)(L= 1.20+0.15+0.15)	16	1.30	0.30	0.15	0.94	cu m
	D1(2.0 X 2.10 m)	2	2.30	0.30	0.15	0.21	cu m
	Windows:						
	W(1.20 X 1.50 m)	17	1.50	0.30	0.15	1.15	cu m
	Ventilation:						
	V1 (0.60 x 0.90 m)	8	0.90	0.30	0.15	0.32	cu m
					Total	2.61	cu m
	Slab						
	L = 24.6 m						
	B = 40.6 m						
	H = 0.250	1	24.60	40.60	0.25	249.69	cu m
20	Total R.C.C work					252.30	

***For Detail design drawing of COMMUNITY HALL please refer sheet attached at the end of report**

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PROPOSED DESIGN FOR COMMUNITY HALL AT SHELA, SANAD, AHMEDABAD

ABSTRECT SHEET

NO.	ITEM DESCRIPTION	QUANTITY	RATE	PER	AMOUNT	RS
1	EXCAVATION WORK	100.44	160	CU. M.	16070.4	RS
2	P.C.C.	12.56	3000	CU. M.	37680	RS
3	TOTAL BRICK MASONARY	63.86	3200	CU. M.	204352	RS
4	PLASTERING	1540.03	175	SQ. M.	269505	RS
5	FLOOORING	244.53	850	SQ. M.	207851	RS
6	R.C.C. WORK	83.17	5010	CU. M.	416682	RS
7	WHITE WASHING	1540.03	20	SQ. M.	30800.6	RS
8	PAINTING	1540.03	30	SQ. M.	46200.9	RS
9	TOTAL AMOUNT				1229141	RS
10	CONTI..... 5%				61457.1	RS
11	10% CONTACTOR CHARGES				122914	RS
12	2% WATER CHARGES				24582.8	RS
13	TOTAL AMOUNT				1438095	RS

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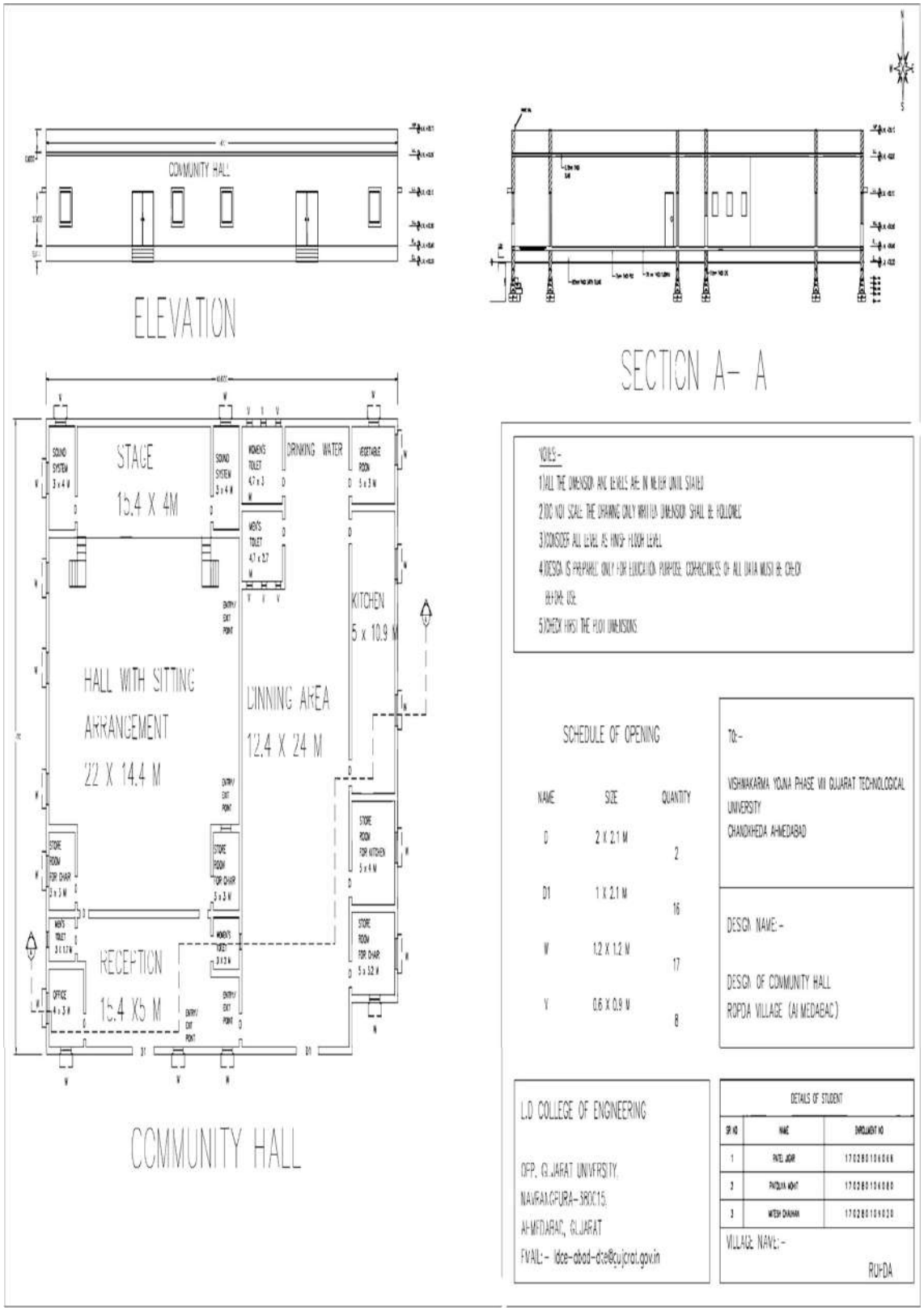

FIG.76: PROPOSED DESIGN COMMUNITY HALL

3/11/2021

Design of animal hospital

Scenario :-

There is no Animal Hospital in whole village, so there is instant need of bank in that village. By keeping in this mind we proposed this design.

Existing situation :-

Right now no any Hospital is available so there is no photograph of any existing building Of bank.

Benefits :-

Fast Emergency Care. More so than other pet boarding facilities, veterinary hospitals have access to medical equipment and animal care expertise. Should an emergency arise, a doctor will always be on-call to take care of the situation

PROPOSED DESIGN FOR ANIMAL HOSPITAL AT SHELA, SANAD, AHMEDABAD

MEASURMENT SHEET

Sr. No	Item Description	No.	Length	Width	Height	Quantity	
1	CENTER LINE LENGTH						
	= 152.2M						
2	EARTHWORK IN FOUNDATION						
		1	152.20	0.9	1.2	164.38	cu m
3	P.C.C. IN FOUNDATION						
		1	152.20	0.90	0.15	20.55	cu m
4	BRICK MASONARY IN FOUNDATION						
	FIRST STEP: =158.5-(1/2)X0.6X21	1	152.20	0.60	0.10	9.13	cu m
	SECOND STEP: 158.5-(1/2)X0.5X21	1	153.25	0.50	0.10	7.66	cu m
	THIRD STEP:158.5-(1/2)X0.4X21	1	154.30	0.40	0.10	6.17	cu m
	FOURTH STEP:158.5-(1/2)X0.3X21	1	155.35	0.30	0.75	34.95	cu m
					Total	57.92	cu m
5	Earth Filling in Plinth						
	Freezer Room (5m x 2m)	1	5.00	2.00	0.45	4.50	cu m
	Radiology (3m x 3.5m)	1	3.00	3.50	0.45	4.73	cu m
	ICU (5m x 3.5m)	1	5.00	3.50	0.45	7.88	cu m
	Isolation (3m x 3.5m)	1	3.00	3.50	0.45	4.73	cu m
	Lab / X-ray (3.7m x 3m)	1	3.70	3.00	0.45	5.00	cu m
	Exam room 1 (3m x 3.5m)	1	3.00	3.50	0.45	4.73	cu m
	Exam room 2 (3m x 3.5m)	1	3.00	3.50	0.45	4.73	cu m
	Exam room 3 (3m x 3.5m)	1	3.00	3.50	0.45	4.73	cu m
	Men's Toilet (4m x 1.6m)	1	4.00	1.60	0.45	2.88	cu m
	Women's Toilet (4m x 1.6m)	1	4.00	1.60	0.45	2.88	cu m
	Surgery Room 1 (4.5m x 4m)	1	4.50	4.00	0.45	8.10	cu m
	Surgery Room 2 (4.5m x 4m)	1	4.50	4.00	0.45	8.10	cu m
	Utility Room (4m x 5.8m)	1	4.00	5.80	0.45	10.44	cu m
	Reception Area (4m x 5.8m)	1	4.00	5.80	0.45	10.44	cu m
					TOTAL	68.90	cu m
6	Damp Proof Course(DPC)						
	152.2 - ((0.3/2)*21)						
	149.05	1	149.05	0.30		44.72	sq. m
7	Brick Work in Super Structure						

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	152.2 - ((0.3/2)*21)						
	149.05	1	149.05	0.30	3.00	134.15	cu m
					Total	134.15	cu m
8	Deduction:						
	Door:						
	D(1.0 X 2.10 m)	14	1.00	0.30	2.10	8.82	cu m
	D1(2.0 X 2.10 m)	1	2.00	0.30	2.10	1.26	cu m
	Windows:						
	W(1.20 X 1.50 m)	12	1.20	0.30	1.50	6.48	
	Ventilation:						
	V1 (0.60 x 0.90 m)	2	0.60	0.30	0.90	0.32	cu m
					Total	16.88	cu m
9	Lintel:						
	Door:						
	D(1.0 X 2.10 m)(L= 1.20+0.15+0.15)	14	1.30	0.30	0.15	0.82	cu m
	D1(2.0 X 2.10 m)	1	2.30	0.30	0.15	0.10	cu m
	Windows:						
	W(1.20 X 1.50 m)	12	1.50	0.30	0.15	0.81	cu m
	Ventilation:						
	V1 (0.60 x 0.90 m)	2	0.90	0.30	0.15	0.08	cu m
					Total	1.81	cu m
10	Total Brickwork after deduction				Total	115.45	cu m
12	Slab						
	L = 17.5 m						
	B = 15.8 m						
	H = 0.250	1	17.50	15.80	0.25	69.13	cu m
13	Internal plaster						
	Freezer Room (5m x 2m)	2	5.00		3.00	30	sq m
		2	2.00		3.00	12	sq m
	Radiology (3m x 3.5m)	2	3.00		3.00	18	sq m
		2	3.50		3.00	21	sq m
	ICU (5m x 3.5m)	2	5.00		3.00	30	sq m
		2	3.50		3.00	21	sq m
	Isolation (3m x 3.5m)	2	3.00		3.00	18	sq m
		2	3.50		3.00	21	sq m
	Lab / X-ray (3.7m x 3m)	2	3.70		3.00	22.2	sq m
		2	3.00		3.00	18	sq m
	Exam room 1 (3m x 3.5m)	2	3.00		3.00	18	sq m

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		2	3.50		3.00	21	sq m
	Exam room 2 (3m x 3.5m)	2	3.00		3.00	18	sq m
		2	3.50		3.00	21	sq m
	Exam room 3 (3m x 3.5m)	2	3.00		3.00	18	sq m
		2	3.50		3.00	21	sq m
	Men's Toilet (4m x 1.6m)	2	4.00		3.00	24	sq m
		2	1.60		3.00	9.6	sq m
	Women's Toilet (4m x 1.6m)	2	4.00		3.00	24	sq m
		2	1.60		3.00	9.6	sq m
	Surgery Room 1 (4.5m x 4m)	2	4.50		3.00	27	sq m
		2	4.00		3.00	24	sq m
	Surgery Room 2 (4.5m x 4m)	2	4.50		3.00	27	sq m
		2	4.00		3.00	24	sq m
	Utility Room (4m x 5.8m)	2	4.00		3.00	24	sq m
		2	5.80		3.00	34.8	sq m
	Reception Area (4m x 5.8m)	2	4.00		3.00	24	sq m
		2	5.80		3.00	34.8	sq m
14	Plaster for ceiling					615	sq m
	Freezer Room (5m x 2m)	1	5.00	5.30		26.5	sq m
	Radiology (3m x 3.5m)	1	3.00	4.50		13.5	sq m
	ICU (5m x 3.5m)	1	5.00	2.75		13.75	sq m
	Isolation (3m x 3.5m)	1	3.00	3.00		9	sq m
	Lab / X-ray (3.7m x 3m)	1	3.70	3.00		11.1	sq m
	Exam room 1 (3m x 3.5m)	1	3.00	8.60		25.8	sq m
	Exam room 2 (3m x 3.5m)	1	3.00	3.00		9	sq m
	Exam room 3 (3m x 3.5m)	1	3.00	3.00		9	sq m
	Men's Toilet (4m x 1.6m)	1	4.00	3.00		12	sq m
	Women's Toilet (4m x 1.6m)	1	4.00	3.00		12	sq m
	Surgery Room 1 (4.5m x 4m)	1	4.50	3.00		13.5	sq m
	Surgery Room 2 (4.5m x 4m)	1	4.50	3.00		13.5	sq m
	Utility Room (4m x 5.8m)	1	4.00	3.00		12	sq m
	Reception Area (4m x 5.8m)	1	4.00	3.00		12	sq m
						192.65	sq m
15	Outer plaster for different room						
	Staff Room (3.2m x 3m)	2	3.20		3.00	19.2	sq m
		2	3.00		3.00	18	sq m
	Office (3.5m x 4.47m)	2	3.50		3.00	21	sq m
		2	4.47		3.00	26.82	sq m
	Control room (3.5m x 2m)	2	3.50		3.00	21	sq m
		2	2.00		3.00	12	sq m
	Store room 2 (3.5m x 2m)	2	4.00		3.00	24	sq m
		2	3.95		3.00	23.7	sq m
	Inquiry Room (4m x 3.95m)	2	3.70		3.00	22.2	sq m
		2	3.95		3.00	23.7	sq m

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	Computer room (3.7m x 3.95m)	2	3.70		3.00	22.2	sq m
		2	3.95		3.00	23.7	sq m
	Meeting Room (4.7m x 3m)	2	4.70		3.00	28.2	sq m
		2	3.00		3.00	18	sq m
	Men's Toilet (3m x 2m)	2	3.00		3.00	18	sq m
		2	2.00		3.00	12	sq m
	Women's Toilet (3m x 2m)	2	3.00		3.00	18	sq m
		2	2.00		3.00	12	sq m
	Drinking Water (1.7m x 3.29m)	2	1.70		3.00	10.2	sq m
		2	3.29		3.00	19.74	sq m
	Reception Area (4.2m x 10.05m)	2	4.20		3.00	25.2	sq m
		2	10.05		3.00	60.3	sq m
						479.16	
16	Outer plaster for boundary						
	L = 12.9 m	2	12.9		2	51.6	sq m
	B = 13.95 m	2	13.95		2	55.8	sq m
	Height = 2m					107.4	sq m
	Total plaster					1394.21	sq m
17	Deduction for Plaster						
	Door:						
	D(1.0 X 2.10 m)	9	1.00		2.10	18.9	sq m
	D1(2.0 X 2.10 m)	1	2.00		2.10	4.2	sq m
	Windows:						
	W(1.20 X 1.50 m)	10	1.20		1.50	18	sq m
	Ventilation:						
	V1 (0.60 x 0.90 m)	2	0.60		0.60	0.72	sq m
						41.82	
18	Final plaster after Deduction					1352.39	sq m
19	R.C.C Work						
	Lintel:						
	Door:						
	D(1.0 X 2.10 m)(L= 1.20+0.15+0.15)	9	1.30	0.30	0.15	0.53	cu m
	D1(2.0 X 2.10 m)	1	2.30	0.30	0.15	0.10	cu m
	Windows:						
	W(1.20 X 1.50 m)	10	1.50	0.30	0.15	0.68	cu m
	Ventilation:						

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	V1 (0.60 x 0.90 m)	2	0.90	0.30	0.15	0.08	cu m
					Total	1.39	cu m
	Slab						
	L = 12.9 m						
	B = 13.95 m						
	H = 0.250	1	12.90	13.95	0.25	44.99	cu m
20	Total R.C.C work					46.37	

***For Detail design drawing of ANIMAL HOSPITAL please refer sheet attached at the end of report**

PROPOSED DESIGN FOR ANIMAL HOSPITAL AT SHELA, SANAD, AHMEDABAD

ABSTRECT SHEET

NO.	ITEM DESCRIPTION	QUANTITY	RATE	PER	AMOUNT	RS
1	EXCAVATION WORK	164.38	160	CU.M.	26300.8	RS
2	P.C.C.	20.55	3000	CU.M.	61650	RS
3	TOTAL BRICK MASONARY	115.45	3200	CU.M.	369440	RS
4	PLASTERING	1157.76	175	SQ.M.	202608	RS
5	FLOOORING	192.65	850	SQ.M.	163753	RS
6	R.C.C. WORK	46.37	5010	CU.M.	232314	RS
7	WHITE WASHING	1157.76	20	SQ.M.	23155.2	RS
8	PAINTING	1157.76	30	SQ.M.	34732.8	RS
9	TOTAL AMOUNT				1113953	RS
10	CONTI 5%				55697.7	RS
11	10% CONTACTOR CHARGES				111395	RS
12	2% WATER CHARGES				22279.1	RS
13	TOTAL AMOUNT				1303325	RS

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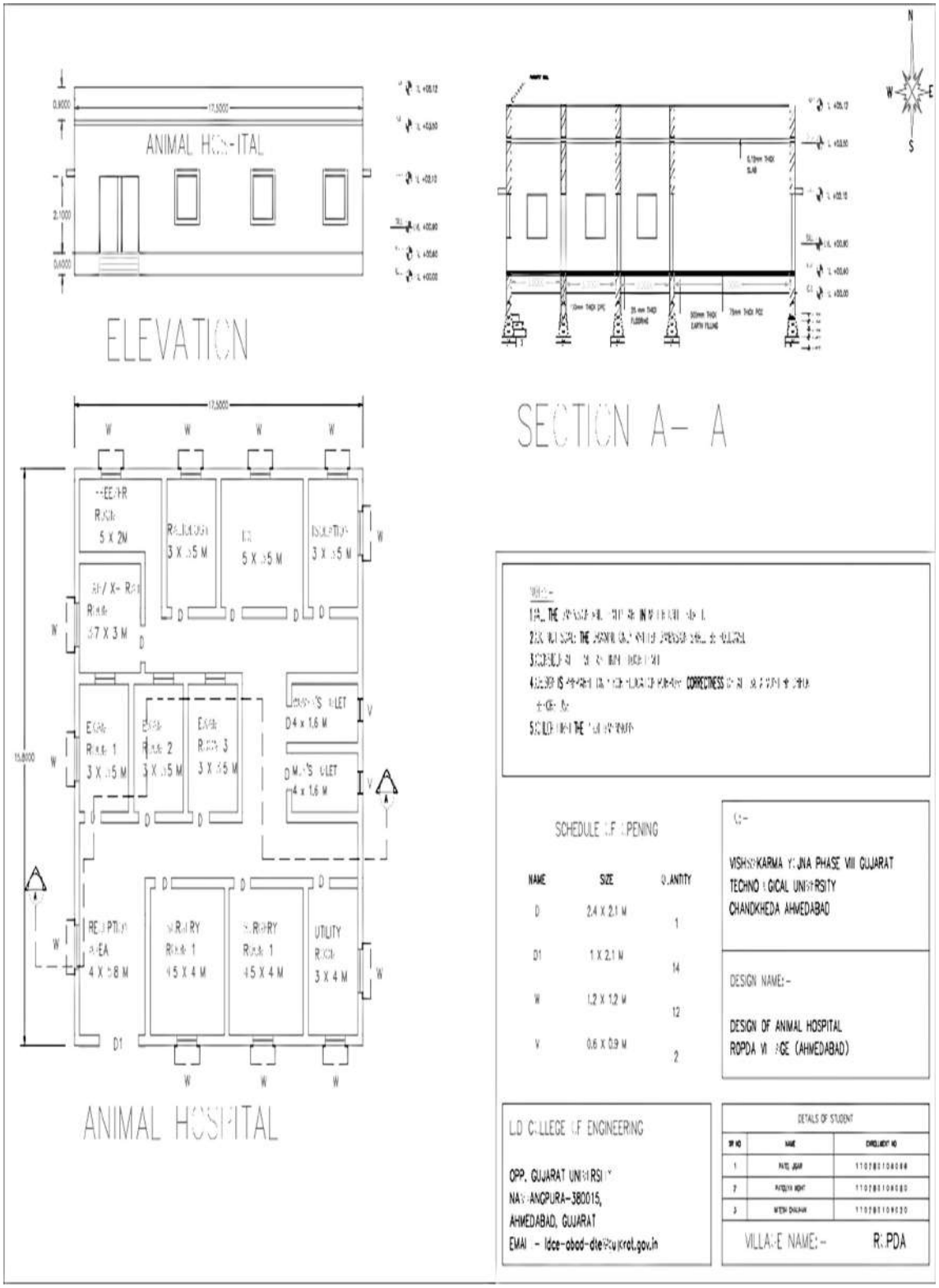

FIG.77: PROPOSED DESIGN ANIMAL HEALTH CENTER

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Design of over/under voltage protection in rural areas

Purpose

A major reason of this **low voltage** is overloading. The afternoon is a time of high demand, so during this time, the voltage tends to decrease naturally. Apart from that, summer days also cause a scarcity of power because of over demand. A common reason of this is the air conditioners which take away much of the power. When the power corporation in the city identifies this huge demand, they quickly announce 5 percent reduction in power in respective regions. This results in **diminishing voltage** or voltage fluctuation.

Needless to opine, this **diminishing voltage** causes the lights to become dim, flicker or glowing unusually brighter and it disrupts your mood when you sit to read something or doing any household work. The bulbs can get fused in certain instances. The tv may not run, the radio will not get started and you will find it difficult to power on the computer.

Current scenario:

Quality of Supply and Service (QoS) of electricity by the distribution companies (DISCOMs) has significant influence on a household's use of appliances that can improve its standard of living. Inadequate electricity supply can limit the duration of use of appliances. Poor quality of electricity supply like frequent outages and voltage fluctuations can damage appliances or reduce their life. Some households invest in options like solar lamps, inverters, or voltage stabilisers. Others either restrict the use of appliances or avoid buying them altogether. Rural electrification programmes in India till date have succeeded in providing **near-universal household access to electricity**. The discourse is now shifting to providing reliable and quality supply as reflected in the Ministry of Power's forthcoming **draft distribution perspective plan** to ensure round the clock power to all. This survey focuses on the perception of household related to electricity supply quality since it affects its decision on purchase and use of appliances. We have also been monitoring actual electricity supply quality at about 400 locations across India since 2015 under the Electricity Supply Monitoring Initiative (ESMI).

Under voltage protection using comparator circuit:

The components required for the block diagram of the comparator circuit is the power supply, step down transformer, bridge rectifier, two pre-set pins, comparators, voltage regulator, relay, buzzer and AC current. This circuit is planned to expand a low voltage and high voltage tripping mechanism to protect the load from the damage. Generally, in homes & industries, we can observe that there is a fluctuation in AC power supply takes place frequently. Due to the fluctuations of the AC power supply, the electronic gadgets will damage easily. To overcome this problem, we can implement the tripping mechanism of over voltage and under voltage protection circuit.

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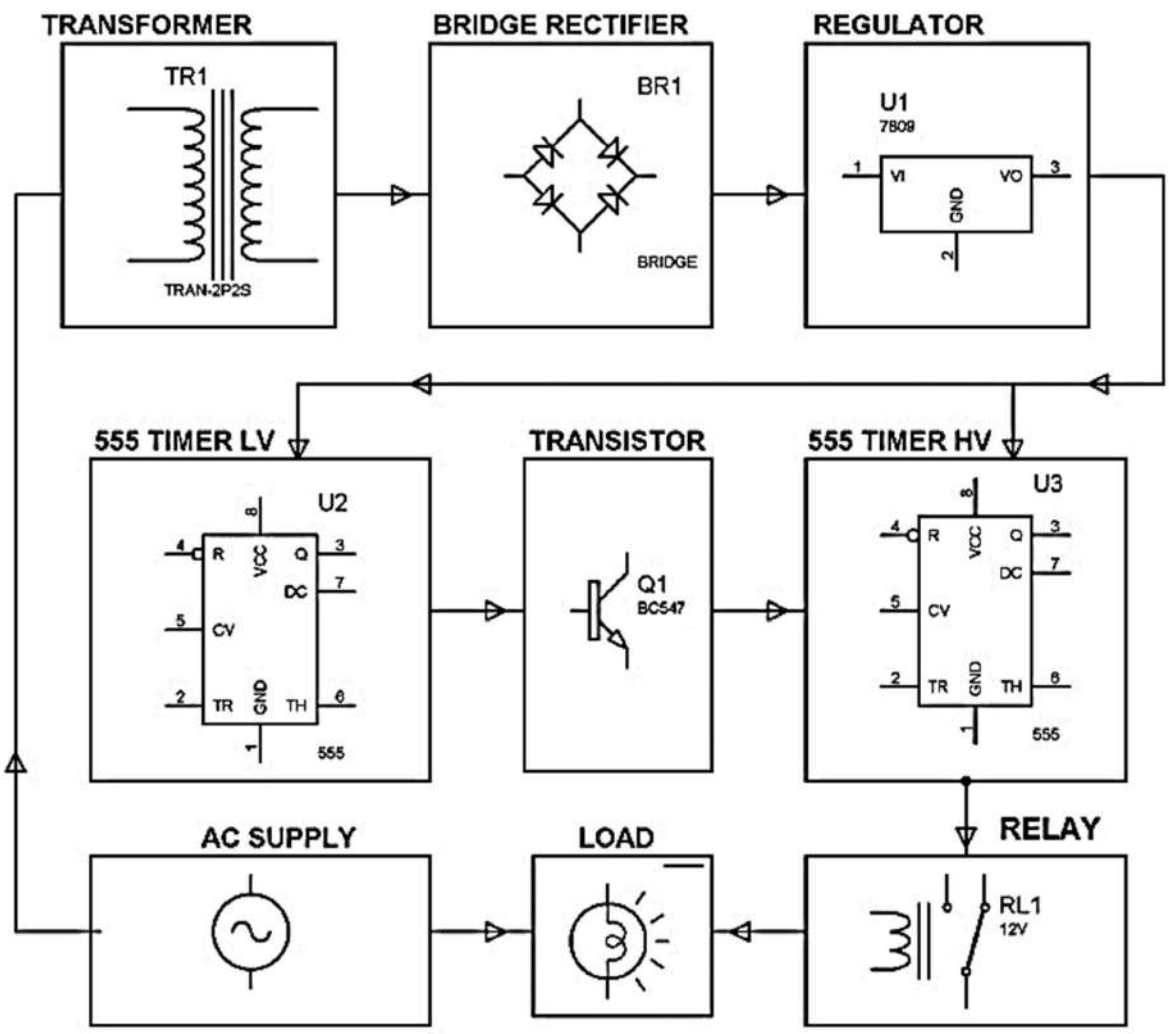

FIG.78 : Block Diagram of Over Voltage and Under Voltage Circuit Using Comparator

Circuit Diagram Operation

The circuit diagram consists of two IC which are named as LM324, LM7812, NPN transistor, two Zennor diodes, capacitors and LED respectively. In the circuit, we can observe that the input of 220v AC through a transformer T1 and it reduce up to 12v with the help of the bridge rectifier. By using the two capacitors C1 & C2 of power smoothing filters we can convert the voltage, alternating current to direct current.

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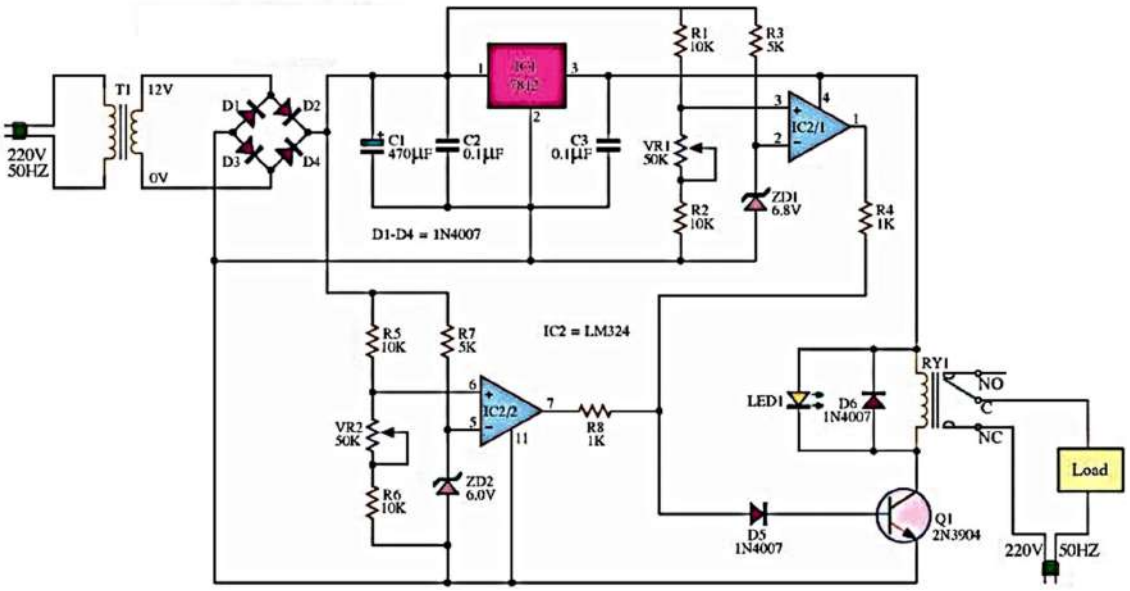

FIG.79 : Circuit of Over Voltage and Under Voltage Protection Using A Comparator

The IC Rex bit is an input pin of IC1 is computing to the 12v power supply is fixed to the IC2. Thus we can consider as an IC op-amp and its pressure act as an IC2/1 is a high voltage detector, high voltage ICs, current works to the transistor Q1 and the relay function works with the cutting of power from the load intensity. The IC/2 is used to detect the lower voltages and with VR1 & VR2 the two components are specified. The LED is used to display the high power & low power over a specified.

Over Voltage & Under Voltage Protection System Using Timer

This is another type of protection system using timer circuit is designed for the low voltage & high voltage protection system load from the damage. From the above circuit, we can observe that in the place of comparator we are using a timer in this circuit. These two timers are delivered an output error to switch the relay mechanism when the voltage violates its arranged limits. Therefore it protects the appliances from the adverse effects of the supply voltage.

Circuit Diagram Operation

The entire power supply of this circuit is in rectified DC supply and to get the variable voltage the regulated power is connected to the timers & unregulated power is connected to the potentiometer. The two timers configurations are working as a comparator i.e., the input is at the timer to the pin 2, it is less positive than the 1/3 Vcc. The output pin is at the pin 3 which goes high and once the input pin 2 is more positive than the 1/3 Vcc it will be reversed. The potentiometer VR1 is connected to the first timer for under voltage cutoff, the potentiometer VR2 is connected to the second timer for over voltage cutoff.

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For the formation of switch logic, the two transistors are connected to the two timers. Generally, we consider that normal operating conditions are between 160 to 250V at this voltage the output of the first timer is considered as a low, thus the transistor 1 is in the cutoff state. Therefore, the result will be the reset pin of the second timer is at high which produces the output at pin 3 is high. So that the transistor 2 is in the conducting state and the relay coils are energized. Hence, in the normal conditions, the load will not get interrupted.

In the over voltage conditions are considered about above the 260V at this condition the second timer pin 2 will be high. It produces the low output at the pin 3, therefore the drivers turn the second transistor into the cut-off mode. Thus, the relay coils are de-energized from the main power supply the load gets tripped. In the same way, in the under-voltage conditions, the first timer output is high and drives the first transistor mode in the conduction state. Therefore, the reset pin of the second timer is at the low condition and the second transistor is in the cut-off mode.

Finally, the relay is operated to isolate the load from the main power supply. The conditions of the over voltage and under voltage positions are also displayed on the LED indication which is connected to the respective timers are shown in the figure.

Application of Over Voltage and Under Voltage

- It is used in the home appliances, industries to control the voltage fluctuations
- Protection of sensitive electronic devices
- Agriculture motors
- Water pumps

Advantages of Over Voltage and Under Voltage

- The price of this circuit is very less and reliable
- It can handle heavy loads up to 7A
- In the abnormal condition automatically the switch is OFF state
- In the safe condition automatically the switch is in the ON-state
- These are highly sensitive

DESIGN OF OVER/UNDER VOLTAGE PROTECTION IN RURAL AREAS		
Estimation and costing		
SR NO.	**Component**	**Price**
1	Transformer 230/12 V	450
2	Bridge Rectifier	360
3	Regulator	220
4	555 Timer	40
5	Transistor	50
6	Relay	180
	TOTAL	**1300 RS.**

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Design of an intelligent and efficient light control system

Current scenario:

Recently, many researches have been carried out to save the energy in many aspects such as producing a device which consumes very less energy or designing a system which helps to reduce the power consumption using the existing devices. In this paper, a room light control system is proposed which is named as light control system (LCS). This proposed system will able to provide the needed light which provides the satisfaction of users and will provide energy saving and management.

Need of this design:

In this project, the Lighting Control System and the decision-making algorithm, are discussed. As per the algorithm the system will first check any occupant is there in the room. If so then the system will check the intensity of light in the room and if it is low then it will switch on the light. Our proposed system can able to minimize the energy consumed for lighting in a room and can able to provide it efficiently.

INTRODUCTION:

Power saving have become a necessary thing in our day-to-day life. Many conventional power saving methods such as using electrical devices which consumes very less energy or cutting off the entire power supply for a scheduled time for a particular area are not efficient and there will be a lot discomforts to the users and cost may also increase to use a low power electrical device. Buildings are responsible for up to 40% of energy usage. Most part of this energy is used mainly for maintaining good lighting such that the workers feel comfortable. Nowadays the newly constructed modernised or automated buildings may have lighting system to improve the comfort of occupants and to save the energy. But there are large number of old buildings which contains the traditional lighting system. To reduce the energy consumption in those types of buildings and to help the owners of that building in terms of saving electricity bill an intelligent and an effective method is discussed in this paper. Because of advancement in Sensor technology a very cheap and portable methods to measure our surroundings are available. The amounts of light required to for a good environment to work comfortably in various areas are shown in table 1 which is recommended by CIBSE lighting guides.'

Required intensity of light for various environment:

Intensity required Filing – Office work- 300 lux

General office (Typing and Writing)- 500lux

Painting- 750 lux , Classrooms- 300 lux

Classrooms for evening class- 500 lux

Auditorium- 500 lux

Assembly (Industry) -1000 lux

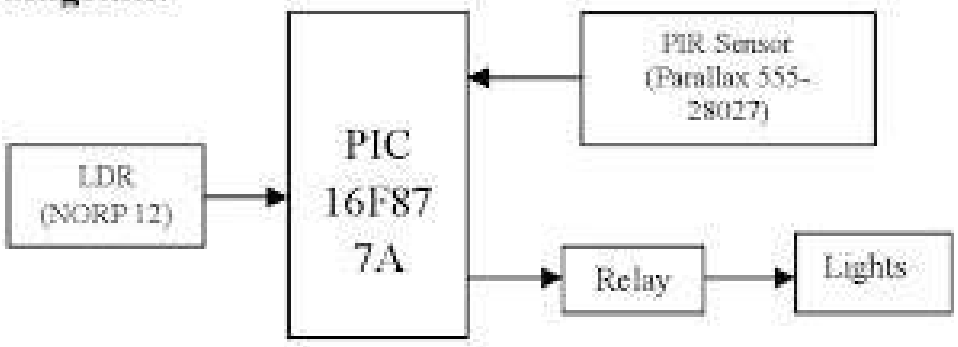
EXISTING SYSTEM: This section describes about the most commonly used lighting control system used in buildings. Since this method is going to use wireless sensor network it is mandatory to know the operation of existing lighting control system. It can be decided that energy loss is occurred with a lighting system when the lighting system illuminates a light which is an area which is not being used currently at that particular time or when it illuminates a light even though sufficient lighting is available to work. The most commonly used lighting systems are explained below. 2.1 A Switch operated manually: In this method a user has to switch ON and OFF the required lights. Since the user can switch on and off the lights as per their preferences there is a chance of keeping the lights in on state even though it was not need during that time. This may occur because of carelessness of user and a large amount of power is wasted.

The lighting system with occupant detection uses passive infrared sensor (PIR). This PIR sensor detects any movement is present in that particular area. If any movement is there means then this system automatically switches ON the lights. If timers are not used in this type of system means then the lights will be kept in ON state even after the user left the place. Because of this fault also a large amount of energy can be wasted. Then another drawback about this type of system is, it will switch ON the lights when there is an occupant is present in that area. But there is a possibility of enough lighting will be there at that particular time. This system is not going to check the intensity of light before switching on the lights. Because of this also a large amount of energy can be lost.

PROPOSED SYSTEM: The proposed system overcomes all the drawbacks of existing system. This system takes two things into account before taking any action, namely (1) human presence and (2) intensity of light. The system consists of a PIR sensor (Parallax 555- 28027) and an LDR (NORP 12). The PIR sensor is used to detect whether any occupants are there in that room and LDR is used to detect the intensity of light in that room. Apart from this an algorithm can be implemented in our system which uses both the LDR and PIR sensor to decide whether to switch on the light or not.

SYSTEM DESIGN:

Block diagram:



This system can be implemented using a PIC 16F877A, a LDR, A PIR sensor and the lights can be controlled by relays. The LDR sensor will keep on sensing the intensity of light and sends it to the microcontroller. The PIR sensor will send a signal to the microcontroller if there is any occupant in the room. If anybody is present in the room then the microcontroller compares the sensed value of intensity in the room with the value already stored in the microcontroller. If the sensed value is less than the value stored in the microcontroller then the light will be switched on by connecting the relay.

ALGORITHM:

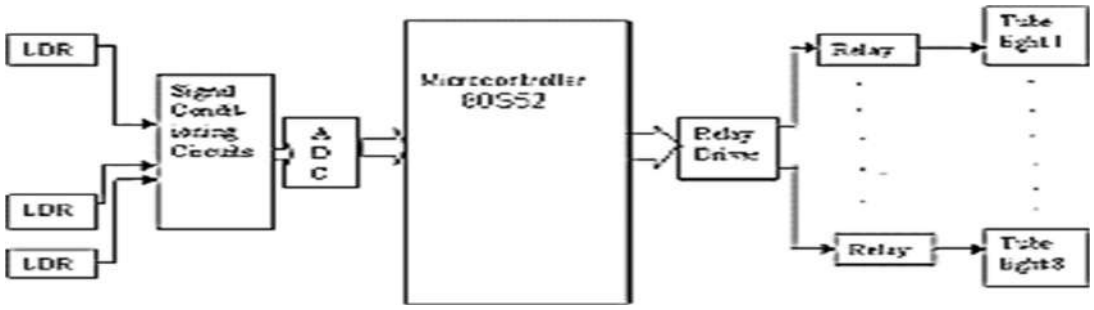
Step 1: Start

Step 2: Check whether any occupant is there in the room using PIR sensor.

Step 3: If any Occupants is there means then compare the intensity of light in the room which was sensed by LDR. If nobody was there means then after some time delay again go to step 1.

Step 4: If the sensed intensity is less than the required level, then switch on the light or if it was enough means then after some time delay proceed to step 1. As per the algorithm our system will first check whether any occupants are there in the room with the help of PIR sensor where the system has been installed. If any occupants are there then it will check the value of light. luminance which is sensed through LDR and then the sensed value will be compared with the value stored in the microcontroller, if the value is less than the lights will be switched on or if the sensed value is greater than the stored value then it will wait for some time and again it will from the first. While checking for occupants if no one is there in the room then the system will wait for some time (delay), which can be programmed in the microcontroller then it will start from the first step.

FLOW CHART



RESULTS:

The proposed system has been implemented in a room with four lights each of 40 watts. Since it is normal classroom where evening classes are also conducted the intensity required has been set to 500 lux which was set as the reference level in microcontroller. Before implementing this system, around 800 watts of energy was consumed per day. After implementing this system in that room it has been considerably reduced to 480 Watts. Thus on using this system a large amount of energy can be saved.

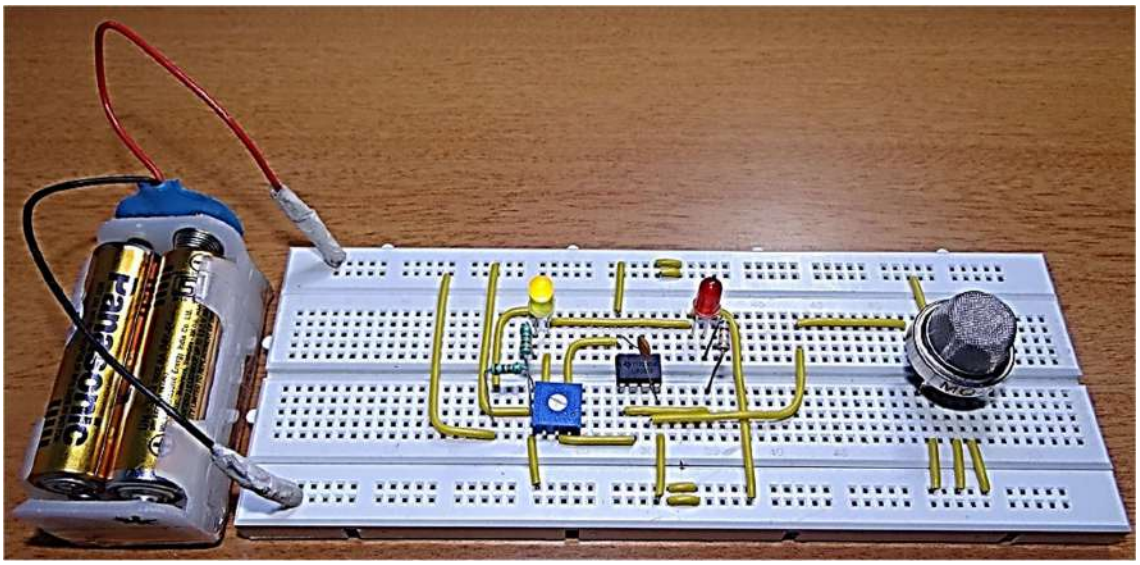
CONCLUSION AND FUTURE WORK:

The proposed system can able to reduce the power consumption to the maximum limit and also this system will help us to keep the working environment in a pleasant and comfortable manner. In this system the number of persons present in the room (Person counter) can be included and also the data transmission from PIR sensor to microcontroller can be implemented through wireless such that the system will become a scalable one in the sense a single system can able to control a large number of rooms. Apart from these things the system can be upgraded to allow the users to configure the intensity of light in real time.

Design of smoke detector alarm circuit

A Smoke Detector is a smoke sensing device that indicates fire. Smoke Detectors are very common in homes, offices, schools and industries. Smoke Detectors are very useful devices as the damage caused by fire accidents is catastrophic.

Now a days, smoke detectors and smoke alarms are very cheap as its usage is increasing and cost of manufacturing is decreasing. In this project, we are implementing a simple Smoke Detector Circuit using simple hardware. We used a Gas/Smoke sensor for detecting smoke. The article is divided into information about Smoke sensor, circuit diagram and working.



A Brief Introduction to Smoke Sensor:

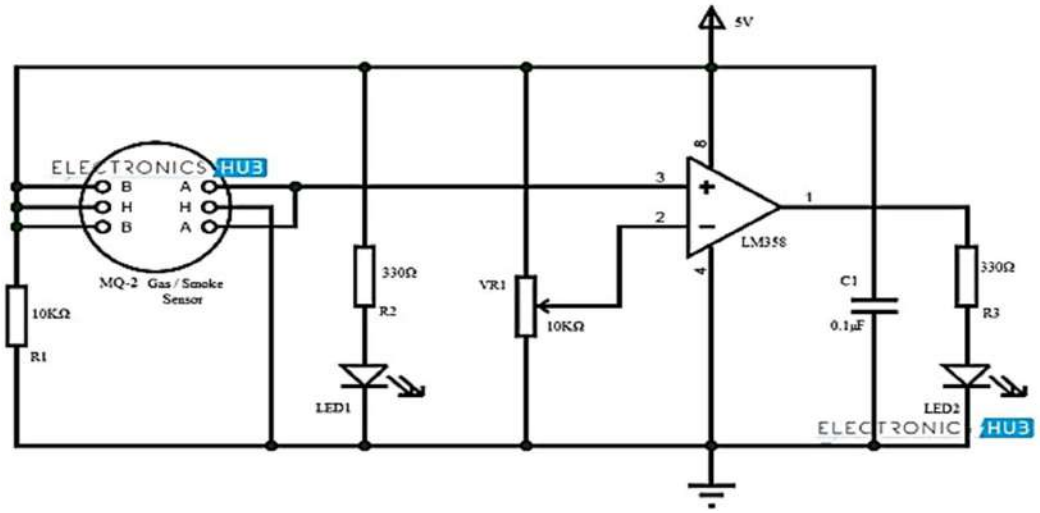
There are two types of smoke detectors. Optical or Photoelectric smoke detectors and Ionization smoke detectors. Optical smoke detectors consists of a light source like LED and a light detector like photocell. The photocell conducts as long as the light falls on it. When there is smoke, the light from the source is interrupted and the photocell doesn't conduct. Ionization smoke detectors consists of two electrodes and an

ionization chamber filled with ions. When there is no smoke, the ions move freely and the electrodes conduct normally.

In the presence of smoke, the chamber is filled with smoke and interrupts the movement of ions. The electrodes do not conduct anymore. Depending on the type of sensor and manufacturer, the conductivity conditions may change but the idea remains the same. Based on the output of the smoke detector, an alarm system can be implemented.

The sensor used in this project is MQ-2 Gas/Smoke sensor. It is sensitive to LPG, Hydrogen, Smoke, Methane, Propane, Alcohol, Butane and other industrial combustible gases. It has two electrodes made of Aluminum Oxide (Al2O3) and a heating element made of Tin dioxide (SnO¬2) which acts as the main sensing layer.

Circuit Diagram



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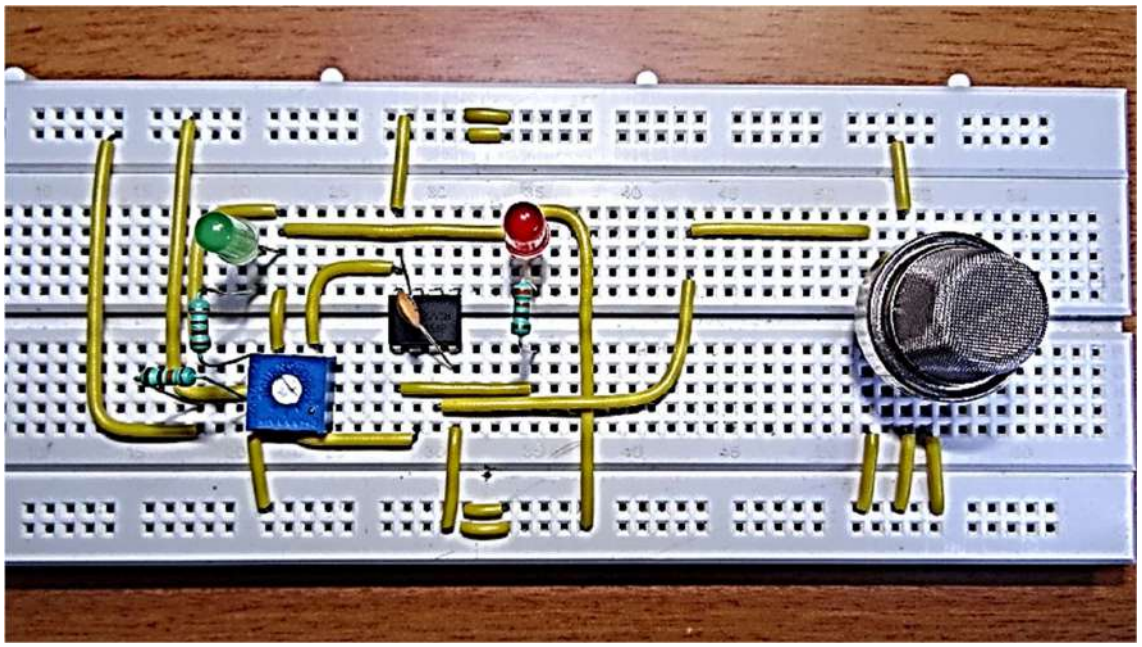
Components Required

- MQ-2 Sensor
- LM358
- 10KΩ
- 330Ω
- LED
- 0.1µF
- 10KΩ POT

Working

Smoke Detectors are amazing devices as they are small, cheap yet very useful. In this project, we implemented a simple Smoke Detector Circuit with adjustable sensitivity. We used a Smoke Sensor MQ-2 as the main sensory device. The working of the circuit is simple and is explained below.



LM358 acts as a comparator in this circuit. The inverting terminal of LM358 is connected to POT so that the sensitivity of the circuit can be adjusted. The output of LM358 is given to an LED as an indicator although a buzzer can be used as an alarm. The non-inverting terminal of LM358 is connected with output of smoke sensor.

Initially, when the air is clean, the conductivity between the electrodes is less, as the resistance is in the order of 50KΩ. The inverting terminal input of comparator is higher than the non-inverting terminal input. The indicator LED is OFF. In the event of fire, when the sensor is filled with smoke, the resistance of the sensor falls to 5KΩ and the conductivity between the electrodes increases.

This provides a higher input at the non-inverting terminal of comparator than the inverting terminal and the output of comparator is high. The alarming LED is turned ON as an indication of presence of smoke.

Note

- The heating element in the Smoke Sensor must be preheated before it can sense any smoke or gas.
- The sensor gets hot because of the heating coil and it is advised not to touch the sensor while it is switched on.
- The sensitivity of the circuit to different concentrations of smoke can be adjusted by using the POT.
- The output LED can be replaced with a loud buzzer for effective alarm.

DESIGN OF OVER/UNDER VOLTAGE PROTECTION IN RURAL AREAS		
Estimation and costing		
SR NO.	**Component**	**Price**
1	MQ-2 smoke detector Sensor	380
2	LM358 comparator ckt	450
3	Resistor: 10KΩ 330Ω	20
4	LED lights	3*500=1500
5	0.1µF capacitor	180
6	10KΩ Potentiometer	60
	TOTAL	**2600 RS.**

13.2 Reason for Students Recommending this Design

Reason for recommending those designs has been already included in those designs.

13.3 About Design Suggestions/Benefits to the Villagers

Same has also been included in their particular designs.

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CHAPTER 14 .....SUSTAINABLE TECHNICAL OPTIONS PART 2

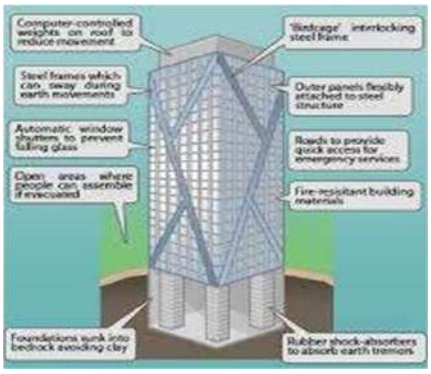
14.1 Civil Engineering

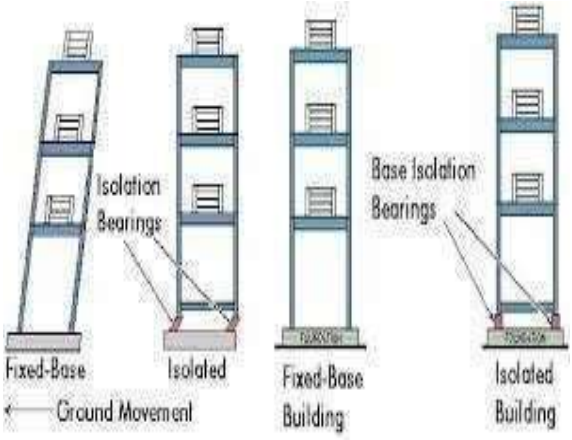
14.1.1 Advanced Earthquake Resistant

Abstract :

Seismic loads should be considered in the cost estimation process as a consequence of changes in structural dimensions. Seismic loads received by buildings vary from one region to another, which are used as a basis for dimensioning structural components. This paper aims to investigate the potential cost changes of the reinforced concrete (RC) beam and column elements as an implication of variations in seismic load received by a building constructed in different seismic areas. The utilization of a building prototype was applied to three indices of seismic importance factor to represent the building occupancy category.

FIG.80 : advance earthquake resistant design, earthquake resistant design, damage due to earthquake without protection





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Introduction :

The earthquake risk consideration as one of the critical loads is required in the design process of a building to accommodate its potential occurrence. When a building failed to withstand seismic loads, it causes damage in various levels, both minor and severe damages, or even collapse. Indonesia, a country with various seismic potentials, especially in Aceh Province, has seen several high-intensity earthquakes occur in the last 15 years . The magnitude of the potential seismic load that may be received by a building is determined by some interrelated factors. Seismicity around the construction site can determine earthquake disturbances; characteristics of soil movements, such as amplitude, duration, and predominant period; and structural dynamic response characteristics, such as natural periods, attenuation factors, and ductility factors. Building dimensions in some locations may be affected differently by seismic loads. The building's flexibility plays one of the leading roles during an earthquake. The high-to-wide ratio of a building defines its flexibility. Understanding the seismic potential is essential during the structure design process of a building, especially in buildings that are constructed at locations with a high level of earthquake vulnerability . Regarding the type of structure material, studies have been carried out related to reinforced concrete structures , steel structures , and composite materials . For the aspect of structural components, some studies were conducted focusing on frame structures , beam and column structures , and other structural components, namely, slab and wall . Earthquake potential has also been assessed by examining aspects of risk to structural elements , regularity shapes of building , building utilization , potential seismic hazards , and cost of damages . These considerations are vital to ensure appropriate design as well as cost efficiency against earthquake risks . The structure is designed not only to meet the requirements of the building safety aspect but also mandatory to consider the economic aspects. The costs required for the structural components of a building need to be estimated by considering the earthquake potential. This consideration is intended so that the dimensions of the designed structure effectively withstand all loads and, at the same time, efficient on costs. The total cost of structural components for various potential seismic loads should be estimated by simulating the loads from some seismic design categories. This paper analyses the total cost of RC structure components affected by seismic loads by considering the seismic design categories and the utilization of building as indicated by seismic importance factors.

Methods :

The Building Prototype The structural components were focused on analyzing the construction of reinforced concrete (RC). The prototype design will be simulated using software for the analysis and structural design system by applying seismic design categories and importance factors to the observed locations within Aceh Province, Indonesia. Quantity and Cost Analysis The RC components consist of concrete work (measured in a cubic meter), reinforcement work (measured in kilogram), and formwork (measured in square meter). A spreadsheet application was used to support the quantity takeoff (QTO) analysis. The quantity of concrete work (QC) was computed as the sum of all RC beams or columns based on the concrete section area (AC) and the length of RC beams or columns (L), as shown in equation

(1). The number and diameter of reinforcement bars should be designed as the total area closest required area (AR). The quantity of reinforcement work (QR) was determined by the rebars number and length (LR) and then converted into weight units (meter to kilogram) using the weight to length conversion index (c), as shown in equation n (2). The quantity of formwork (QF) is the total area of formwork used to cast a beam or column and determined by the casting perimeter length (LP) of concrete and the length of RC beams or columns (L), as shown in equation (3): The unit price (UP) of work is the primary reference for calculating the price of an RC component of the building structure. The UPs of work are calculated based on the prices and requirements of materials, labor, equipment, and overhead/profit. The UP of works used in this study refers to the results of previous studies [48]. All price uses for cost analysis were measured in Indonesian Rupiah (IDR). The costs of works (CW) for all structural components were obtained from the multiplication between the quantity of work (Qi) and the unit price of work (UPi) as follows: The overall form of change for the costs of RC components was analyzed cumulatively by adding up the total cost for RC beams and RC columns. The change patterns of the cost were explained in two aspects. Firstly, the cost patterns were explained based on the composition of the RC cost of works. The cost compositions describe the percentage cost of work to the total cost of components, namely, RC beams and RC columns. Secondly, the cost changes were defined based on the relationship between the total cost (TC) of whole RC components and the potential seismic load in each zone. The TC was determined as the total cost per square meter of the building area from the two RC components reviewed. A linear regression approach was used to describe the total cost (TC) as a function of spectral acceleration (SS) from the zones observed for each importance factor (Ie) as follows:

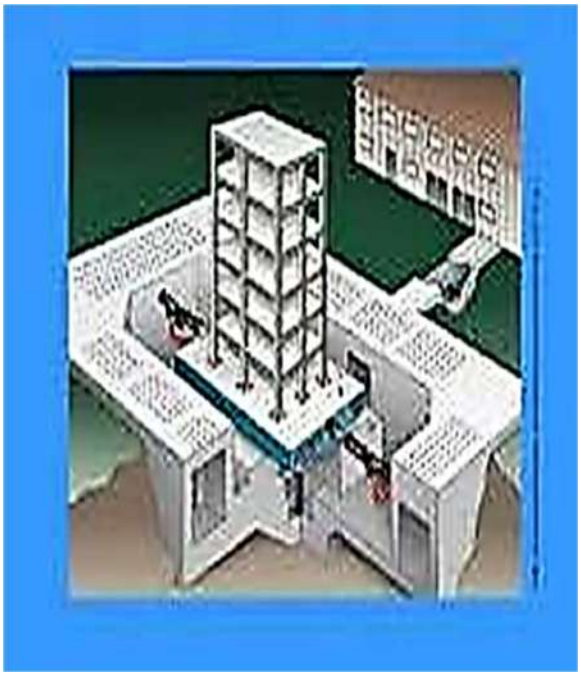

FIG.81 : earthquake proof houses

FIG.82: cost of earthquake proofing a house

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Conclusions :

This paper studied the changes in structural component costs of the RC beam and RC column of a building due to changes in seismic load. The load variations in the structure consider the seismic design categories (as represented in eight seismic zones, in SS) and the building occupancy categories (as defined by three importance factors, Ie).

The study indicated that seismic loads are an important factor that must be considered in cost estimation. The cost estimation process should be carried out by considering aspects of variations in seismic loads in a building if it is planned to be built at different locations. This consideration is required to ensure that a building is designed effectively from the aspect of structural resistance to earthquakes, as well as being efficient in terms of its economic aspects. The total cost required for structural components will increase in line with the increase in seismic loads. In sequence, changes in seismic load will have an impact on the structural dimensions, which are then followed by changes in the quantity of work, and in the end affect the increase in costs. The relationship of the total cost described the pattern of changes to the seismic potentials, as expressed in the SS parameters. Increasing in total costs per square meter for incremental in SS value of 0.1 are 0.68% (for Ie = 1.00), 1.70% (for Ie = 1.25), and 1.54% (for Ie = 1.50).

The study also confirmed that variations in building occupancy categories contribute to increased costs in the design of a building. The difference in occupancy categories has consequences for the potential risks for building users when the building is damaged or even collapsed due to exceeding seismic loads. Applying the importance factors as represented in variations in building occupancy shows a significant impact on the increase in total building costs. Furthermore, implementation of this study can be directed at the establishment of cost estimates standard, especially for conceptual cost estimates. For government budget planners, the results of this study can also be a reference in evaluating the budget allocation policy for a typical building planned in a different region.

14.1.2 Seismic Retrofitting of Buildings

Seismic retrofit (or rehabilitation) strategies have been developed in the past few decades following

the introduction of new seismic provisions and the availability of advanced materials

- Increasing the global capacity (strengthening). This is typically done by the addition of cross braces or new structural walls.

- Reduction of the seismic demand by means of supplementary damping and/or use of base isolation systems

- Increasing the local capacity of structural elements. This strategy recognizes the inherent capacity within the existing structures, and therefore adopts a more cost-effective approach

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to selectively upgrade local capacity (deformation/ductility, strength or stiffness) of individual structural components.

• Selective weakening retrofit. This is a counter-intuitive strategy to change the inelastic mechanism of the structure, while recognizing the inherent capacity of the structure • Allowing sliding connections such as passageway bridges to accommodate additional movement between seismically independent structures.

• Addition of seismic friction dampers to simultaneously add damping and a selectable amount of additional stiffness. Recently more holistic approaches to building retrofitting are being explored, including combined seismic and energy retrofitting. Such combined strategies aim to exploit cost savings by applying energy retrofitting and seismic strengthening interventions at once, hence improving the seismic and thermal performance of buildings.

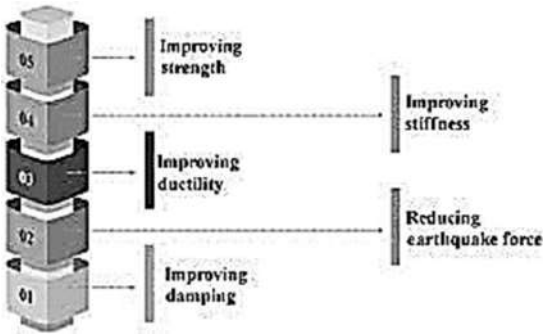


Fig 83 : seismic loading

Seismic retrofitting is the modification of existing structures to make them more resistant to seismic activity, ground motion, or soil failure due to earthquakes. With better understanding of seismic demand on structures and with our recent experiences with large earthquakes near urban centers, the need of seismic retrofitting is well acknowledged. Prior to the introduction of modern seismic codes in the late 1960s for developed countries (US, Japan etc.) and late 1970s for many other parts of the world (Turkey, China etc.),[1] many structures were designed without adequate detailing and reinforcement for seismic protection. In view of the imminent problem, various research work has been carried out. State-of-the-art technical guidelines for seismic assessment, retrofit and rehabilitation have been published around the world – such as the ASCE-SEI 41and the New Zealand Society for Earthquake Engineering (NZSEE)'s guidelines. These codes must be regularly updated; the 1994 Northridge earthquake brought to light the brittleness of welded steel frames, for example, The retrofit techniques outlined here are also applicable for other natural hazards such as tropical cyclones, tornadoes, and severe winds from thunderstorms. Whilst current practice of seismic retrofitting is predominantly concerned with structural improvements to reduce the seismic hazard of using the structures, it is similarly essential to reduce the hazards and losses from non-structural elements. It is also important to keep in mind that there is no such thing as an

earthquake-proof structure, although seismic performance can be greatly enhanced through proper initial design or subsequent modifications.

Fig 84 : seismic retrofitting

14.1.3 Advance Practices in Constuction Field in Modern Material , Techniques and Equipment.

EQUIPMENT USED FOR SMALL AND MEDIUMCONSTRUCTION WORK

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

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

- Earth excavators.
- Earthmovers
- The Indian advanced construction techniques industry is experiencing a period of fast growth. Aiming to overcome the housing problem, it also has to face the dual challenge of fulfilling the needs of the client and maintain the quality standards.

Fig 85: earthquake proof structure

- At the same time, the up-gradation of technology through the adoption of new techniques has become necessary to survive in a tough competitive environment.
- The traditional methods of construction are inadequate in executing the work speedily with economy and quality. The construction industry in India must switch over to advanced construction techniques to achieve its goal in "minimum time with maximum efficiency".

ADVANCED CONSTRUCTION TECHNIQUES –

NECESSITY

1. The building construction activity, especially the residential and commercial complex is highly labor intensive with very little mechanization. Approximately 35% of the total construction cost is spent on labor.

2. The laborers have their limitations and may fail to meet the time limits. The quality of workmanship, too, differs from person to person. Hence, quality standards cannot be maintained. Wastage of material is considerably high as it is handled and utilized manually.

3. The objective of the construction organizations should be 'speed and economy'. This cannot be achieved with labor oriented advanced construction techniques.

4. Only studying and adopting modern industrial techniques and equipment is the solution. By this, one can save material, reduce labor expenses, and increase the speed of work, leading to the economy in construction.

5. Though the scope of the subject is vast, in this chapter we shall discuss only the advanced techniques to be used in advanced construction techniques activities.

Fig86:advancedconstruction techniques

14.1.4 Engineering Aspects Of Soil mechanics - Environmental Impact Assessment

The term "soil" can have different meanings, depending upon the field in which it is considered. To a geologist, it is the material in the relative thin zone of the Earth's surface within which roots occur, and which are formed as the products of past surface processes. The rest of the crust is grouped under the term "rock". To a pedologist, it is the substance existing on the surface, which supports plant life.

To an engineer, it is a material that can be:

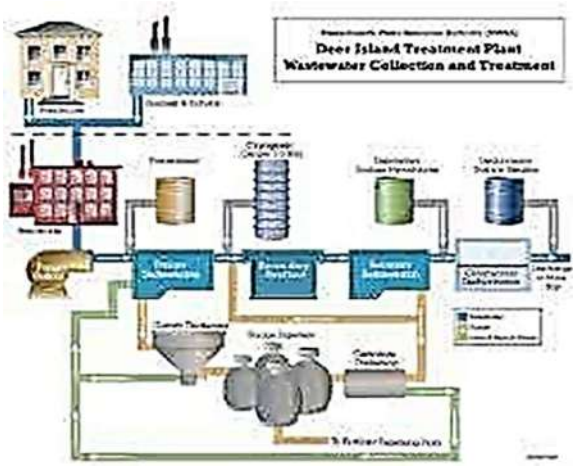
- built on: foundations of buildings, bridges
- built in: basements, culverts, tunnels
- built with: embankments, roads, dams
- supported: retaining walls

Soil Mechanics is a discipline of Civil Engineering involving the study of soil, its behaviour and application as an engineering material. Soil Mechanics is the application of laws of mechanics and hydraulics to engineering problems dealing with sediments and other unconsolidated accumulations of solid particles, which are produced by the mechanical and chemical disintegration of rocks, regardless of whether or not they contain an admixture of organic constituents. Soil consists of a multiphase aggregation of solid particles, water, and air. This fundamental composition gives rise to unique engineering properties, and the description of its mechanical behavior requires some of the most classic principles of engineering mechanics. Engineers are concerned with soil's mechanical properties: permeability, stiffness, and strength. These depend primarily on the nature of the soil grains, the current stress, the water content and unit weight. In the Earth's surface, rocks extend upto as much as 20 km depth. The major rock types are categorized as igneous, sedimentary, and metamorphic.

- Igneous rocks: formed from crystalline bodies of cooled magma.
- Sedimentary rocks: formed from layers of cemented sediments.
- Metamorphic rocks: formed by the alteration of existing rocks due to heat from igneous intrusions or pressure due to crustal movement. Soils are formed from materials that have resulted from the disintegration of rocks by various processes of physical and chemical weathering. The nature and structure of a given soil depends on the processes and conditions that formed it:
- Breakdown of parent rock: weathering, decomposition, erosion.
- Transportation to site of final deposition: gravity, flowing water, ice, wind.
- Environment of final deposition: flood plain, river terrace, glacial moraine, lacustrine or marine.
- Subsequent conditions of loading and drainage: little or no surcharge, heavy surcharge due to ice or overlying deposits, change from saline to freshwater, leaching, contamination.

14.1.5 Water Supply-Sewage System-Waste Water-Sustainable Development Techniques

Water is one of the world's most valuable resources, yet it is under constant threat due to climate change and resulting drought, explosive population growth, and waste. One of the most promising efforts to stem the global water crisis is industrial and municipal water reclamation and reuse. The Water Reuse Association defines reused, recycled, or reclaimed water as "water that is used more than one time before it passes back into the natural water cycle." Thus, water recycling is the reuse of treated wastewater for beneficial purposes such as agricultural and landscape irrigation, industrial processes, toilet flushing, or replenishing a groundwater basin (referred to as groundwater recharge).

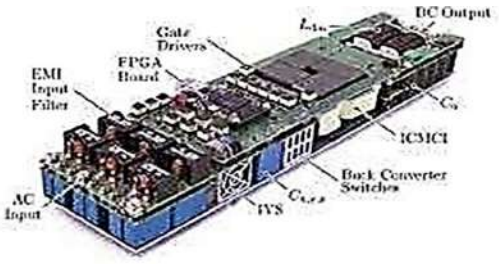


Water scarcity and water pollution are crucial issues in today's world. One of the ways to reduce the impact of water scarcity and pollution is to expand water and wastewater reuse. The increasing scarcity of water in the world along with rapid population increase in urban areas gives rise to concern about appropriate water management practices. In the context of trends in urban development, wastewater treatment deserves greater emphasis.

Currently, there is a growing awareness of the impact of sewage contamination on rivers and lakes. Accordingly, wastewater treatment is now receiving greater attention from the World Bank and government regulatory bodies. Urban wastewater treatment has received less attention compared to 'water supply & treatment.' Water scarcity coupled with the bursting seams of our cities and towns have taken a toll on our health and environment.

The traditional system needs to be transformed into a sustainable, closed-loop urban wastewater management system that is based on the conservation of water and nutrient resources. A huge loss of life-supporting resources is the result of failed organic wastewater recovery. A wastewater management team is well equipped to create a wastewater management strategy that will result in the reduction of pathogens in surface and groundwater to improve public health.

Fig 87: urban sewage treatment plant



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14.2 ELECTRICAL ENGINEERING

14.2.1 Design of Power Electronics converter

The main task of PE is to process and control the flow of electric energy by supplying voltage and current in a form that is optimum for load. PE converters has numerous applications like switched-mode power supplies, active power filters, electrical-machine-motion-control, renewable energy conversion systems distributed power generation, flexible AC transmission systems, vehicular technology etc. PE converters can be found wherever there is a need to modify the electrical energy form. In classical electronics, electrical currents and voltage are used to carry information, whereas in power electronics, they carry power. Some examples of application for power electronic converter systems are DC/DC converters used in many mobile devices, such as cell phones or PDAs, AC/DC converters in computers and TVs. Large scale power electronics are used to control 100's of megawatt of power flow across the nation.

14.2.2 Electronic Soft Starter for 1/3 Phase Induction Motor for Agriculture.

Soft Starters are starting devices, used for the acceleration, deceleration, and protection of the three phase electrical induction motors through the controlling applied voltage to 3 phase motor. Induction motor is most frequently used motor for industrial, domestic and agricultural applications. mostly industrial motors are 1ph or 3ph motor depending upon supply fed to it. Ac motor became most popular because of its simple and robust construction, low maintenance and can be suitable for any working condition. Due to its numerous applications, the induction motor needs some starting arrangements to start softly and safely.

14.2.3 Advanced Wireless Power Transfer System

Wireless power transfer (WPT), or electromagnetic power transfer is the transmission of electrical energy without any physical link (wires). In a wireless power transmission system, a transmitter device, driven by electric power from a power source, generates a time-varying EMF, which transmits power across space to a receiver device, which extracts power from the field and supplies it to user load. The technology of wireless power transfer can eliminate the use of the wires and batteries, thus increasing the mobility, convenience and safety of an electronic device including their users. Wireless power transfer is useful to power electrical devices where interconnecting wires are either not possible or inconvenient, hazardous.

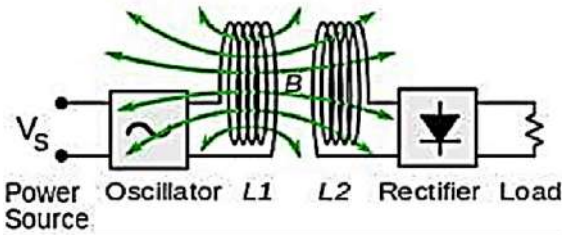

Fig 88: working of WPT

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14.2.4 Industrial Temperature Controller

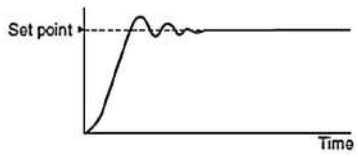
Temperature Controller A Temperature Controller is a device that is used to control heater or other equipment by comparing a sensor signal with a set point and performing calculations according to deviation between those values. Devices that can handle sensor signals other than for temperature, such as humidity, pressure, and flow rate, are called Controllers. Electronic controllers are specifically called Digital Controllers.

Temperature Control

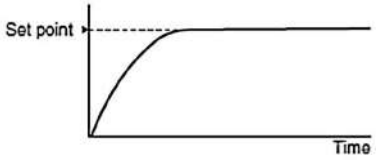
Temperature Controllers control temperature so that the process value will be the same as the set point, but the response will differ due to the characteristics of the controlled object and the control method of the Temperature Controller. Typically, a response shown in Figure (2) where the set point is reached as quick as possible without overshooting, is required in a Temperature Controller. There are also cases such as the one shown in Figure (1), where a response quickly increases the temperature even if it overshoots is required, and the one shown in Figure (3), where a response slowly increases the temperature is required.

Fig 89: temperature controller

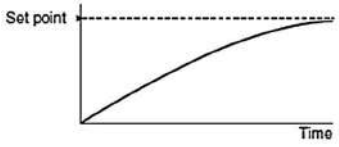
(1) Response where the process value settles on the set point while repeatedly overshooting and undershooting



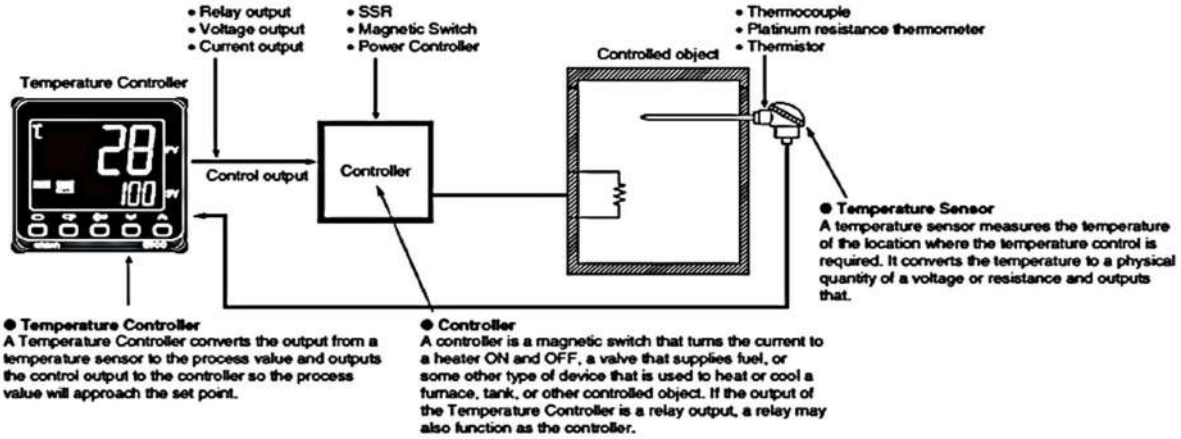
(2)Proper response



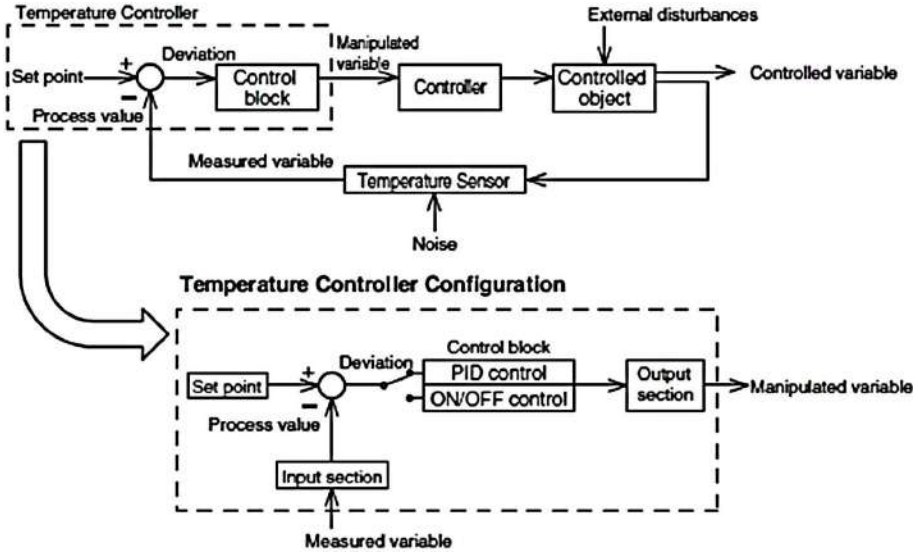
(3) Response where the process value slowly reaches the set point



Temperature Control Configuration (Design) Example

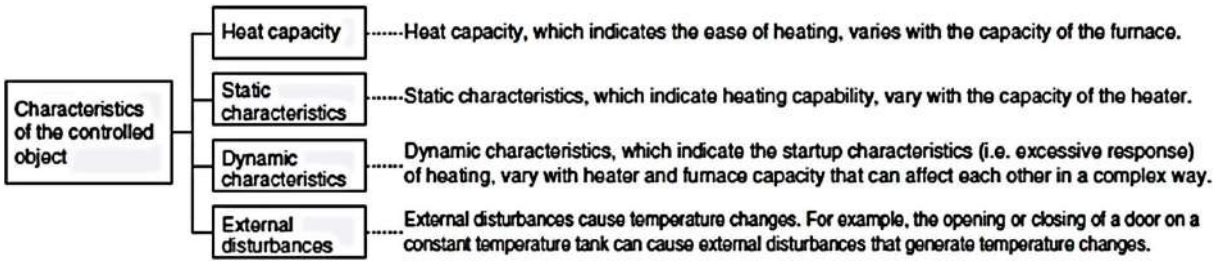


Configuration of a Feedback Control System



Temperature Controller Configuration

Characteristics of the Controlled Object



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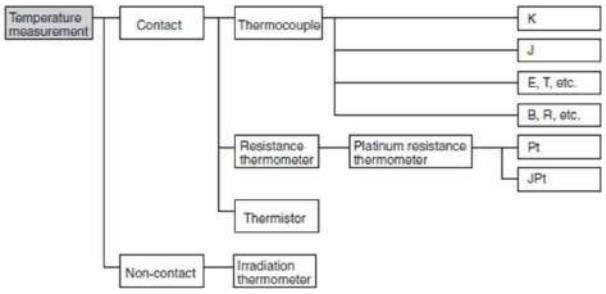
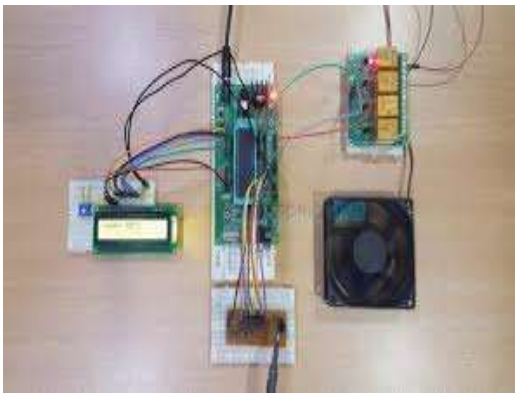
What Is a Temperature Sensor?

A Temperature Sensor measures the temperature of a location where the temperature control is required. It converts the temperature to a physical quantity of a voltage or resistance and outputs that.

Temperature Measurement Categories

There are two categories of temperature measurement, as described below.





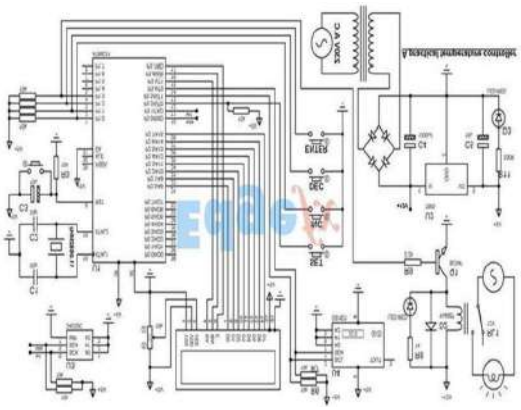


Fig 90 : circuit diagram

Actual Costing and Estimation

cost of Industrial Temperature Controller is highly variable according to the requirements, components used, temperature range and specifications of the particular company. Cost of the industrial temperature controller may vary in range between 16,000 to 40,000 INR.

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14.2.5 Accident Alerts in Modern Traffic Signal Control System - Camera Surveillance System

Abstract

Accidents are major cause of death, despite development of sophisticated systems for traffic management and other technology linked with vehicles. Hence, necessary that a common system for accident management is developed. For instance, traffic congestion in most urban areas can be alleviated by the real-time planning of routes. However, the designing of an efficient route planning algorithm to attain a globally optimal vehicle control is still a challenge that needs to be solved, especially when the unique preferences of drivers are considered. The accident management system is able to lessen amount of time required to alert an ambulance that it is required at an accident scene by using a multihop optimal forwarding algorithm. Finally, our system makes it easier for ambulance to quickly make their way through traffic congestion so that the chance of saving lives is increased.

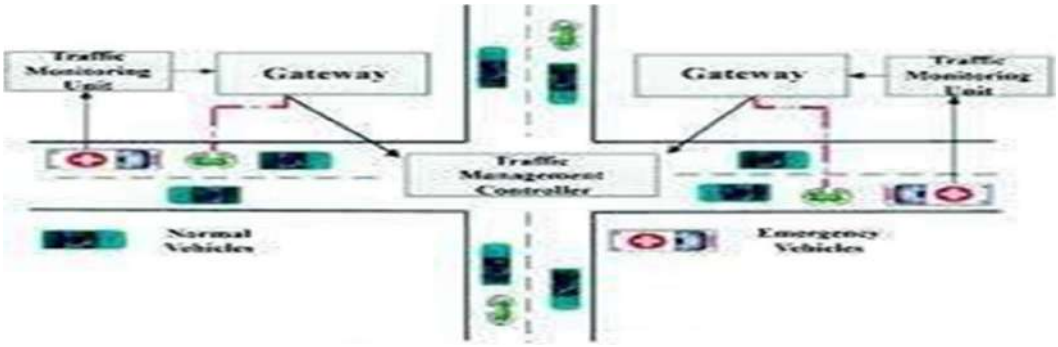

Fig 91: algorithm

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CHAPTER 15.....SMART AND SUSTAINABLE FEATURES OF DESIGN IMPACT ON SOCIETY

NO.	NAME	APPROXIMATE TIME	COST
1	Design of Public Garden	1 YEAR	**855166**
2	Design of Public Health center	1 YEAR	**955306**
3	Design of Bio gas Plant	8 MONTH	**47066**
4	Design of Public Toilet	3 MONTH	**220000**
5	Design of Public Library	9 MONTH	**870341**
6	Design of Rainwater Harvesting	1 MONTH	43500
7	Design of anganwadi building	1 YEAR	**177030**
8	Design of pick-up stand	4 MONTH	**475354**
9	Design of post office	8 MONTH	**605000**
10	Design of skill development center	1 YEAR	**1438095**
11	Design of community hall	1 YEAR	**1438095**
12	Design of animal hospital	1 YEAR	**1303325**

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CHAPTER 16.....SURVEY AND INTERVIEWING WITH SARPANCH AND TALATI AND VILLAGERS

3/11/2021

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

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

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

ગોવિંદભાઈ રામાભાઈ રબારી
સરપંચ
શેલા ગ્રામ પંચાયત
તા. સાણંદ

3/11/2021

CHAPTER 17.....IRRIGATION ACTIVITIES AND AGRO INDUSTRY ALTERNATE TECHNICS AND SOLUTION

An agro-industry is an enterprise that processes biomass, i.e. agricultural raw materials, which include ground and tree crops as well as livestock and fisheries, to create edible or usable forms, improve storage and shelf life, create easily transportable forms, enhance nutritive value, and extract chemicals for other uses. As the products of agro-industries are both edible and non-edible, the agro-industries can be classified as agro-food industries (or merely food processing industries) and agro-non-food industries. The agro industry provides the crucial farm-industry linkage which helps accelerate agricultural development by creating backward linkages (supply of credit, inputs and other production enhancement services) and forward linkages (processing and marketing), adding value to the farmer's produce, generating employment opportunities, and increasing the farmer's net income. This in turn motivates the farmer for better productivity and further opens up possibilities of industrial development. The agro industry generates new demand on the farm sector for more and different agricultural outputs which are more suitable for processing. An agro processing plant can open up new crop and livestock opportunities to the farmer and thus increase the farm income and employment. The paper identifies following major issues to be discussed and researched: 1. Organizational Patterns for Agro-Processing. 2. R&D Inputs and Technology Up gradation. 3. Market Development. 4. Need for Confessional Finance and Larger Margin Money for Working Capital. 5. Tax Incidence. 6. Linkage Agro industry with Planning for Agro-Climate Regions. 7. Strengthening of the Data Base. 8. Need for Further Research.

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Agriculture is the practice of cultivating plants and livestock.[1] Agriculture was the key development in the rise of sedentary human civilization, whereby farming of domesticated species created food surpluses that enabled people to live in cities. The history of agriculture began thousands of years ago. After gathering wild grains beginning at least 105,000 years ago, nascent farmers began to plant them around 11,500 years ago. Pigs, sheep, and cattle were domesticated over 10,000 years ago. Plants were independently cultivated in at least 11 regions of the world. Industrial agriculture based on largescale monoculture in the twentieth century came to dominate agricultural output, though about 2 billion people still depended on subsistence agriculture.

Modern agronomy, plant breeding, agrochemicals such as pesticides and fertilizers, and technological developments have sharply increased crop yields, while causing widespread ecological and environmental damage. Selective breeding and modern practices in animal husbandry have similarly increased the output of meat, but have raised concerns about animal welfare and environmental damage. Environmental issues include contributions to global warming, depletion of aquifers, deforestation, antibiotic resistance, and growth hormones in industrial meat production. Agriculture is both a cause of and sensitive to

environmental degradation, such as biodiversity loss, desertification, soil degradation and global warming, all of which can cause decreases in crop yield. Genetically modified organisms are widely used, although some are banned in certain countries. The major agricultural products can be broadly grouped into foods, fibers, fuels and raw materials (such as rubber). Food classes include cereals (grains), vegetables, fruits, oils, meat, milk, fungi and eggs. Over one-third of the world's workers are employed in agriculture, second only to the service sector, although in recent decades, the global trend of a decreasing number of agricultural workers continues, especially in developing countries where smallholding is being overtaken by industrial agriculture and mechanization.

Civilizations

In Eurasia, the Sumerians started to live in villages from about 8,000 BC, relying on the Tigris and Euphrates rivers and a canal system for irrigation. Ploughs appear in pictographs around 3,000 BC; seed-ploughs around 2,300 BC. Farmers grew wheat, barley, vegetables such as lentils and onions, and fruits including dates, grapes, and figs. Ancient Egyptian agriculture relied on the Nile River and its seasonal flooding. Farming started in the presynaptic period at the end of the Paleolithic, after 10,000 BC. Staple food crops were grains such as wheat and barley, alongside industrial crops such as flax and papyrus. In India, wheat, barley and jujube were domesticated by 9,000 BC, soon followed by sheep and goats. Cattle, sheep and goats

were domesticated in Mehrgarh culture by 8,000–6,000 BC. Cotton was cultivated by the 5th–4th millennium BC. Archeological evidence indicates an animaldrawn plough from 2,500 BC in the Indus Valley Civilization. In China, from the 5th century BC there was a nationwide granary system and widespread silk farming. Water-powered grain mills were in use by the 1st century BC, followed by irrigation. By the late 2nd century, heavy ploughs had been developed with iron ploughshares and moldboards. These spread westwards across Eurasia. Asian rice was domesticated 8,200–13,500 years ago – depending on the molecular clock

estimate that is used – on the Pearl River in southern China with a single genetic origin from the wild rice Oryza rufipogon. In Greece and Rome, the major cereals were wheat, emmer, and barley, alongside vegetables including peas, beans, and olives. Sheep and goats were kept mainly for dairy products.

Agro-industries are the enterprises, activities and institutions that deliver material inputs to the farming sector and transform, distribute and otherwise add value to agricultural and food products targeting an identified market demand. Benefits of agro-industries include providing employment in off-farm activities such as processing. Agro-industries also add value to, and increase demand for, farmers' products, thereby reducing poverty and food insecurity and stimulating economic growth. The many challenges faced by small and medium agro-industries in developing countries include poor infrastructure such as roads and electricity supplies, lack of inputs such as packaging, lack of technical expertise, and inadequate policies and weak institutional support. These challenges reduce the profitability, competiveness and ability of the sector to fully exploit the market opportunities arising from rapid population growth, urbanization and changing lifestyles and consumer preferences.

EXAMPLES OF ACTIVITIES

Dairy industry development in Afghanistan (2005–2014) This project developed and disseminated an integrated approach to local dairy industry development. It helped establish viable dairy enterprises, improved family nutrition and food security, and contributed to income and employment generation, with thousands of participating households obtaining regular cash incomes from sales of milk and byproducts. Women, who are the main beneficiaries, receive 87 percent of this "milk money", valued at several million dollars over recent years. Developing the capacity and technical skills of local communities, and establishing sustainable local enterprises and institutions are best practices for delivering these results.

Alternative Farming

- Organic Farming.
- Denitrification.
- Community Supported Agriculture.
- Agroecology.
- Farming Systems.

- Fertilizers.
- Crop Rotation.
- Soil Organic Carbon.

Organic farming

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The historic basis of 'alternative' farming practices lies in 'organic farming'. This movement had a start in the 1930s, with pioneers such as Albert Howard in the UK (as a developer of composting methods), Rudolf Steiner in Switzerland (as the founder of biodynamic farming), and Jerome I. Rodale in the US (who founded a number of magazines in this field). Organic farming got off the ground as a response to the use of industrial fertilizers, and more so since the 1940s to the use of synthetic pesticides. All forms of organic farming focus on agricultural practice of the farm as a whole. The aims of organic farming are to enhance biological diversity within the whole system; to increase soil biological activity; to maintain long-term soil fertility; to recycle wastes of plant and animal origin in order to return nutrients to the soil, thus minimizing the use of nonrenewable resources; to rely on renewable resources in locally organized agricultural systems; and to promote the healthy use of soil, water and air as well as minimize all forms of pollution thereto that may result from agricultural practices. This is translated into a number of specific requirements, including: no use of industrial fertilizers, no use of synthetic pesticides, no use of feed additives, no use of genetically modified (GM) crops, a none too strict crop rotation, and mechanical weed control. These strict and well recognizable requirements are all defined at the level of management activities; they are thought to result in a living soil ecosystem with high soil fertility, a good water quality, high biodiversity and a harmonious landscape. The farmers should be acting as part of an encompassing natural system. Although there are basic standards of the International Federation of Organic Agriculture Movements (IFOAM), national systems still do differ. For instance, in the US and in the UK there are formal requirements for the minimum area of natural habitats, whereas in other countries such as the Netherlands there are no formal requirements for that purpose, and Manhoudt and De Snoo (2003) report that in this country organic arable.

CHAPTER 18.....SOCIAL ACTIVITY

18. Social Activities – Any Activates Planned By Students

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

Awareness programs on Covid 19 were conducted in all the adopted villages during lock down and corona period to control the spread of pandemic disease in adoptedvillages.

3/11/2021

- We aware the villagers to keep social distance
- Wear mask
- Use sanitizer
- Wash hand
- Increase immunity
- Do yoga
- And also do not take mental stress.

CHAPTER 19.....SAGY VILLAGE

<< SAGY VILLAGE>> Questionnaire Survey form withthe Sarpanch Signature (Scanned copy attachment in thesoft Copy report and Original copy in hardbound report

SAANSAD ADARSH GRAM YOJANA (SAGY) Baseline Household Survey Questionnaire

Village: Shela Gram Panchayat: Shela Ward No. -

Block: _____ District: Ahmedabad

State: Gujarat LS Constituency: Ahmedabad East

1. Family Identity and Size

Name of Head of Household	Thakor Ambalal.							Male/ Female	M
SECC Survey ID:	-	Family Size	4	Over 18	2	6 to 18	-	Under 6	-

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	NO
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]
Ramibai G. Vaghela	45	M	N	Y	8th	Y	Y	-
Gautiben G Vaghela	40	F	N	Y	-	Y	Y	-
Akshay G Vaghela	26	M	N	N	B.Com	Y	Y	-
Payal G Vaghela	20	F	N	N	B.S.C	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
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-

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)

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AANSAD ADARSH GRAM YOJANA (SAGY) Baseline Household Survey Questionnaire

5. Hand washing

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

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

7. Do members take Regular Physical Exercise

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

8. Consumption of Tobacco

	Smoking	Chewing
Adults	✓	✓
Children	✗	✗

9. House & Homestead Data

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

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

Source of Water		Distance
Piped Water at Home	Yes / ~~No~~	
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	1 4 ~~55~~	2. Cultivable Area	~~0~~ 1 4
3. Irrigated Area	8 ~~Yes~~	4. Uncultivable Area	6

13. Principal Occupations in the Household

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

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

15. Agriculture Inputs

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

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

Name	Unit	Quantity
Cotton	-	-
wheat	-	-
Ground nut	-	-

17. Livestock Numbers

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

18. What games do Children Play
Cricket, Badminton

19. Do children play musical instrument (mention)
None

Schedule Filled By: Jay Thakkar
Principal Respondent: Jaimin mori, Laljji Savaliya
Date of Survey: 25/06/2021

3/11/2021

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: Shela

b. Ward Number:

c. Gram Panchayat: Shela

d. Block: Ahmedabad

e. District: Ahmedabad

f. State: Gujarat

g. Lok Sabha Constituency: Ahmedabad - East

h. Number of Habitations / Hamlets in the Gram Panchayat: Approx 300 243

i. Names of Habitations / Hamlets:

Shela -

Demographic Information

Number of Households 243 (Approx 300) Total Population 1228 Male 652 Female 576

SC HHs - ST HHs 3 OBC HHs - Other HHs -

II. Access to Infrastructure/Amenities etc.

i.	Access to Infrastructure / Facilities / Services	Located in the Village Yes (Y)/No(N)	If located elsewhere (N), distance in kms from the village
a.	Nearest Primary School	Y	
b.	Nearest Middle School	Y	
c.	Nearest Secondary School	N	9 Km
d.	Kisan Seva Kendra	N	9 Km
e.	Milk Cooperative /Collection Centre	Y	
g.	Health Sub Centre	N	5 Km
h.	Bank	N	4 Km
i.	ATM	N Y	
j.	Bus Stop	N	3 Km
k.	Railway Station	Y	

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

1

3/11/2021

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	Y	
p	Nearest Agro Service Centre	Y	
p	MSP based Government Procurement Centre		
q	Milk Cooperative /Collection Centre	Y	
r	Veterinary Care Centre		
s	Ayurveda Centre		
t	E – Seva Kendra	N	
u	Bus Stop	N	
v	Railway Station	Y	
w	Library	N	
x	Common Service Centre	Y	

IV. Sports Facilities in the Gram Panchayat

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

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

V. Education, ICDS

a. Number of Angan Wadi Centres: 1

b. Number of villages without Angan Wadi Centres —

Names of such villages: —

c. Schools (Number)

Primary Private: 0 Primary Govt.: 1

Middle Private: 0 Middle Govt.: 1

Secondary Private: 0 Secondary Govt.: 0

Higher Secondary Private: 0 Higher Secondary Govt: 0

VI. Public Distribution System

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

3/11/2021

SAANSAD ADARSH GRAM YOJANA (SAGY) Village Details Survey Questionnaire

viii. Land Category		Area in Acres		Land Category	Area in Acres		Irrigation Structure	No.
a.	Cultivable Land		d.	Pasture / Grazing Land	–	g.	Check Dam	0
b.	Irrigated Land		e.	Forests/ Plantations	–	h.	Wells/Bore Wells	.
c.	Un-irrigated Land		f.	Other Common Land	–	i	Tanks /Ponds	2

ix. Entitlement Related Parameters		
1	Number of active Job Card holders under MGNREGA	-
2	Number of active Job Card holders who have completed 100 days of work	-
3	Number of shops selling alcohol	-
4	Number of BPL families	113
5	Number of landless households	-
6	Number of IAY beneficiaries	-
7	Number of FRA beneficiaries	-
8	Number of common sanitation complexes	-
9	Number of SHGs	-
10	Number of active SHGs	-
11	Existence of SHG Federation in the Village (Yes / No)	NO
12	Number of Youth Clubs	0
13	Number of Bharat Nirman Volunteers	-

Name and Signature of Surveyor and Respondent

Jay Thakkar Jaimin mori Lalji Savaliya	ગ્રામ રોજગાર સેવક	ગ્રામ રોજગાર સેવક સરપંચ શેલા ગ્રામ પંચાયત તા.સાણંદ	25/06/2021
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

3/11/2021

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: Shela

b. Ward Number:

c. Gram Panchayat: Shela

d. Block: Ahmedabad

e. District: Ahmedabad

f. State: Gujarat

g. Lok Sabha Constituency: Ahmedabad - East

h. Number of Habitations / Hamlets in the Gram Panchayat: Approx 300 243

i. Names of Habitations / Hamlets:

Shela -

Demographic Information

Number of Households 243 Approx 300 Total Population 1228 Male 652 Female 576

SC HHs - ST HHs 3 OBC HHs - Other HHs -

II. Access to Infrastructure/Amenities etc.

i.	Access to Infrastructure / Facilities / Services	Located in the Village Yes (Y)/No(N)	If located elsewhere (N), distance in kms from the village
a.	Nearest Primary School	Y	
b.	Nearest Middle School	Y	
c.	Nearest Secondary School	N	9 km
d.	Kisan Seva Kendra	N	8 KM
e.	Milk Cooperative /Collection Centre	Y	
g.	Health Sub Centre	N	6 km
h.	Bank	N	4 Km
i.	ATM	N Y	
j.	Bus Stop	N	3 km
k.	Railway Station	Y	

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

1

3/11/2021

SAANSAD ADARSH GRAM YOJANA (SAGY) Village Details Survey Questionnaire

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

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: 3

iii. Drinking Water Facilities

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

If 3 mention the name of the habitations not covered:

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

If 3 mention the name of the habitations not covered:

b. Coverage under Open Drains: 1 *(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): N

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

vii. Education, ICDS

a. Number of Anganwadi Centres: 0

c. Schools (Number)

Primary Private: 0 Primary Govt.: 1

Middle Private: 0 Middle Govt.: 1

Secondary Private: 0 Secondary Govt.: 0

Higher Secondary Private: 0 Higher Secondary Govt: 0

2

3/11/2021

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 Good / Not Covered	Shela	-
b.	Hand Pump Coverage in Villages:	Covered Good / Not Covered	Shela	-
c.	Coverage under Covered Drains:	Covered Good / Not Covered	Shela	-
d.	Coverage under Open Drains:	Covered / Not Covered	Shela	-
e.	Villages with Household Electricity Connection (Numbers)	Connected 1 / Not Connected	Shela	-

VIII. Land and Irrigation

	Private Land	Area in Acres		Common Land	Area in Acres		Irrigation Structure	No.
a.	Cultivable Land	93	d.	Pasture / Grazing Land	-	g.	Check Dam	-
b.	Irrigated Land	0	e.	Forests/ Plantations	-	h.	Wells/Bore Wells	-
c.	Un-irrigated Land	28	f.	Other Common Land	-	i	Tanks /Ponds	-

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

3/11/2021

Technological University, —Vishwakarma Yojana- Phase VIII

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)	–
b)	Number of Households receiving pension (old age, widow, disability)	–
c)	Number of eligible Households who are not receiving pension	–
d)	Number of Households eligible for Ration Card	–
e)	Number of eligible HHs having ration cards	–
f)	Number of households covered under RSBY (Rashtriya Swasthya Bima Yojana)	–
g)	Number of HHs covered under AABY (Aam Aadmi Bima Yojana)	–
h)	Number of active Job Card holders under MGNREGA	–
i)	Number of Job Card holders who completed 100 days of work during 2013-14	–
j)	Number of shops selling alcohol	0
k)	Number of BPL families	113
l)	Number of landless households	–
m)	Number of IAY beneficiaries	–
n)	Number of FRA[2] beneficiaries	–
o)	Number of Community Sanitary Complexes	–
p)	Number of Households headed by single women	–
q)	Number of Households headed by physically handicapped persons	–
r)	Total number of Persons with Disability in the village	–
s)	Number of SHGs	–
t)	Number of active SHGs	–
u)	Number of SHG Federations	–
v)	Number of Youth Clubs	0
w)	Number of Bharat Nirman Volunteers	–

Name and Signature of Surveyor and Respondent[3]

Jay Thakkar Jaimin mori Lalji Savaliya Surveyor	PRI Respondent (Preferably Gram Panchayat Chairperson)	સરપંચ શેલા ગ્રામ પંચાયત તા. સાણંદ Official Respondent (preferably seniormost Government official in the Gram Panchayat)	25/05/2021 Date of Survey

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

4

3/11/2021

CHAPTER 20.....TDO-DDO COLLECTOR EMAIL SENDING SOFT COPY

Gmail Jaimin Mori <jaiminmori987@gmail.com>

Hello Sir/Madam , I am JAIMIN MORI student in L.D college of engineering and my team mates are JLALJI SARVAIYA AND JAY THAKKAR ,GTU is allOtted important and prestigious project of Vishwakarma Yojna (Phase-VIII) by the Govemment of Gujarat, in which the students would study the identified villages and make recommendations to achieve integrated and comprehensive development through Technological options. As a part of vishwakarma Yojana's guidelines, we have discussed and informed to all the respected officers about our project in which we will shortly notify about Shela village of Ahmedabad district, profile issues for development and our design work for them which are as below in pdf:

1 message

Jaimin Mori <jaiminmori987@gmail.com> 20 August 2021 at 12:03
To: collector-ahd@gujarat.gov.in
Cc: dish-ahd@gujarat.gov.in
Bcc: ddo-ahd@gujarat.gov.in, tdo-ahd@gujarat.gov.in, do-dish-ahd@gujarat.gov.in

SHELA VILLAGE VISHWAKARMA YOJANA PHASE 8.pdf
15142K

3/11/2021

CHAPTER 21.....COMPREHENSIVE REPORT FOR ENTIRE VILLAGE

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.

Rurbanisation 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. Shela village is in Ahmedabad district. In Shela village people are engaged with the agriculture and Business activity. In this village some educated people went to Ahmedabad 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.

shela village is in Ahmedabad district. In Shela village people are engaged with the agriculture and Business activity. In this village some educated people went to Ahmedabad 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 Shela 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.

We proposed design of civil and electrical

Design of Public Garden (CI)

Design of Public Health centre (CI)

Design of Bio gas Plant (CI)

Design of Public Toilet (CI)

Design of Public Library (CI)

Design of Rainwater Harvesting (CI)

Design of solar panel (EE)

Design of smart bin concept (EE)

3/11/2021

Design of WiFi tower (EE)

Design of anganwadi building (CI)

Design of pick-up stand (CI)

Design of post office (CI)

Design of skill development center (CI)

Design of community hall (CI)

Design of animal hospital (CI)

Design of over/under voltage protection in rural areas (CE)

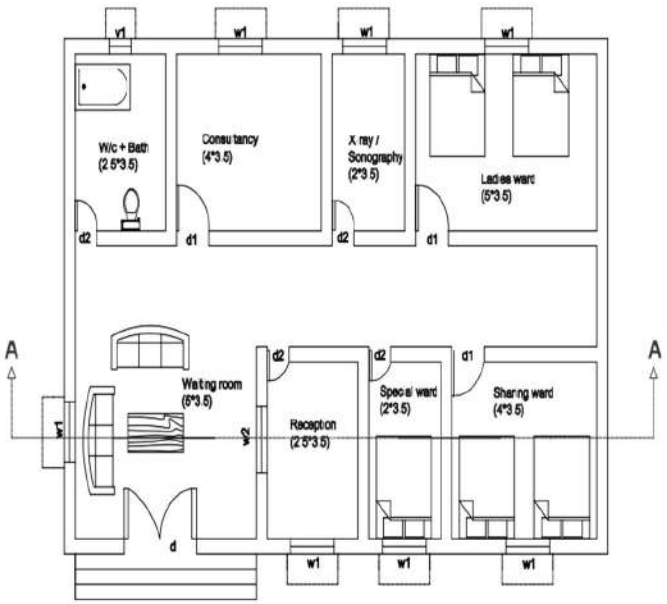
Design of an intelligent and efficient light control system (CE)

Design of smoke detector alarm circuit (CE)

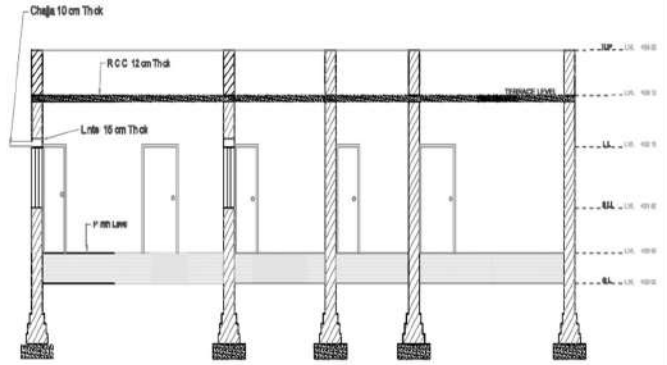
The key to India's progress was the development of its villages. In his unified vision, education, agriculture, village industry, social reform all came together to provide the basis for a vibrant rural society free from exploitation and linked to the urban centres as equals. Our planning incorporates this basic insight.

-MAHATMA GANDHIJI

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



PLAN



SECTION A-A

GENERAL NOTES

- All dimensions are in meter unless stated otherwise.
- Drawing should be read not to scale.
- Consider all level as finish floor level.
- Before starting the work various service i.e. Plumbing, electrical, fire service should consider.
- Design is prepared only for Education purpose. Correctness of all data must be check before use.

All Dimension Are In Meter

D	2.0*2.1
D1	0.9*2.1
D2	0.6*2.1
W1	1.2*1.2
W2	1.5*1.2
V1	0.6*0.45

Submitted To :-

Vishwakarma Yojana Phase VIII
Gujarat Technological University
Chandkheda - Ahemdabad

Design Name:-

Design of Public Health Center SHELA

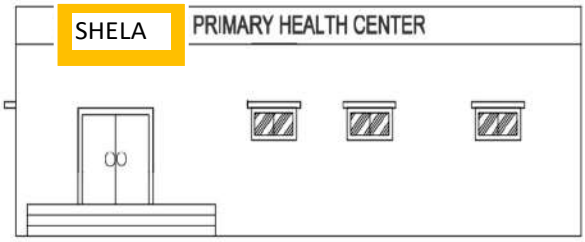
Drawing Title :-

Plan and Section of Proposed Public Health Center

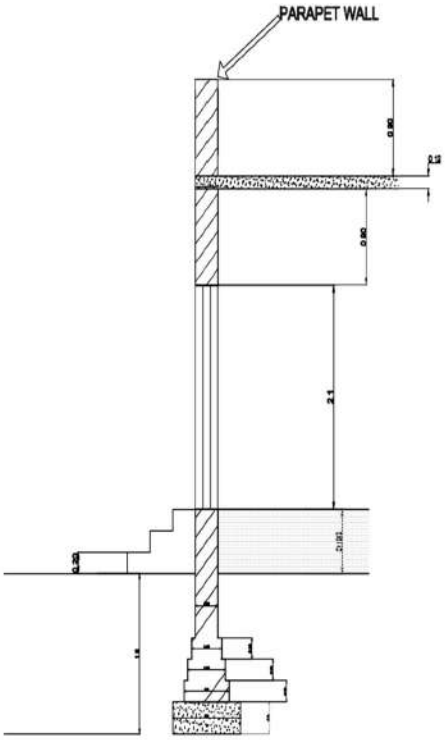
Submitted By :-

L.D. College of Engineering
Opp. Gujarat University,
Navrangpura, Ahmedabad.

3/11/2021



ELEVATION



FOUNDATION DETAILS

GENERAL NOTES

- All dimensions are in meter unless stated otherwise.
- Drawing should be read not to scale.
- Consider all level as finish floor level.
- Before starting the work various service i.e. Plumbing, electrical, fire service should consider.
- Design is prepared only for Education purpose. Correctness of all data must be check before use.

Submitted To :-

Vishwakarma Yojana Phase VIII
Gujarat Technological University
Chandkheda - Ahemdabad

Design Name:-

Design of Public Health Cente SHELA

Drawing Title :-

Elevation and Foundation details of Proposed Public Health Center

Submitted By :-

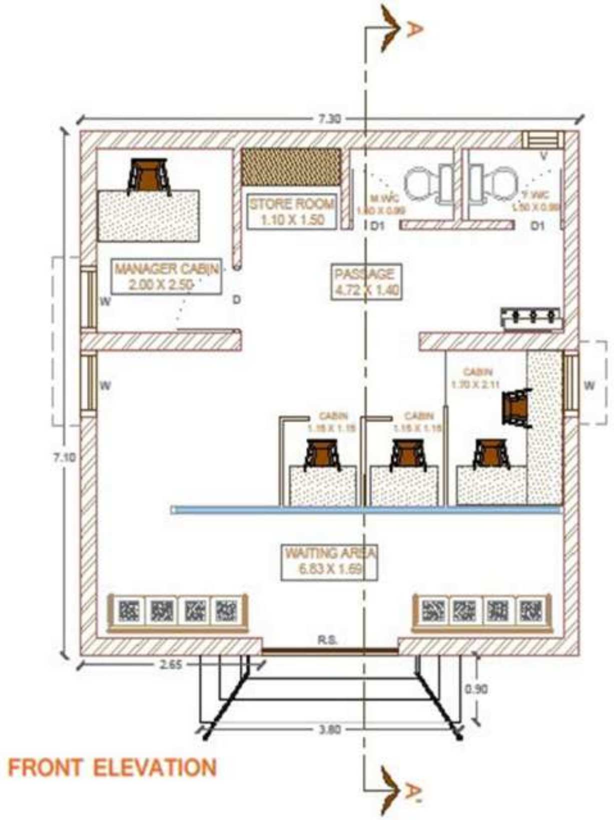
L.D. College of Engineering
Opp. Gujarat University,
Navrangpura, Ahmedabad.

3/11/2021

NOTE

All Dimensions are in M (meter) unless and untile stated
Total area of plot 07.30 x 07.10 m = 51.83 sq.mt.

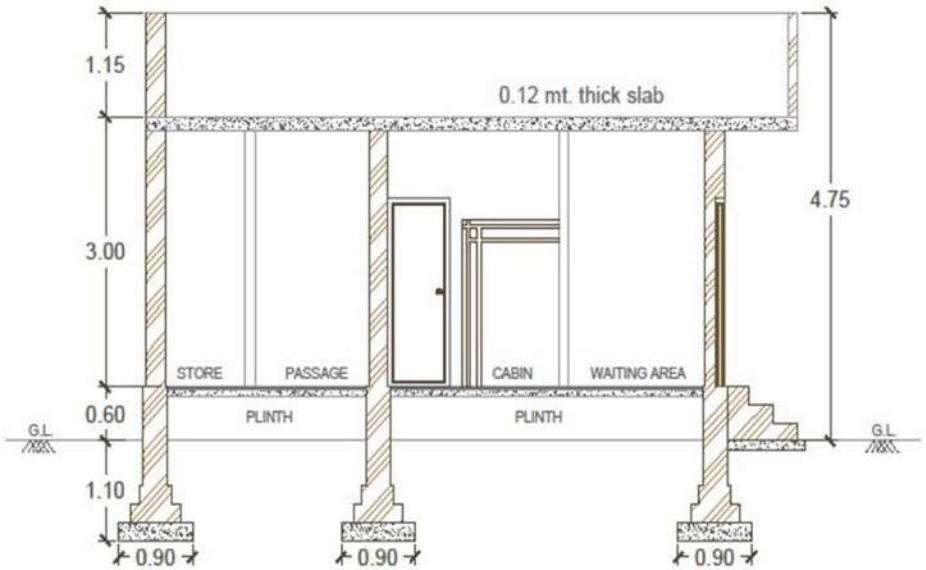
SCHEDULE OF OPENING		
DOOR	R.S.	= 2.00 X 2.10 mt.
	D	= 0.90 X 2.10 mt.
	D1	= 0.76 X 2.10 mt.
WINDOW	W	= 0.90 X 1.20 mt.
VENTI.	V	= 0.60 X 0.60 mt.



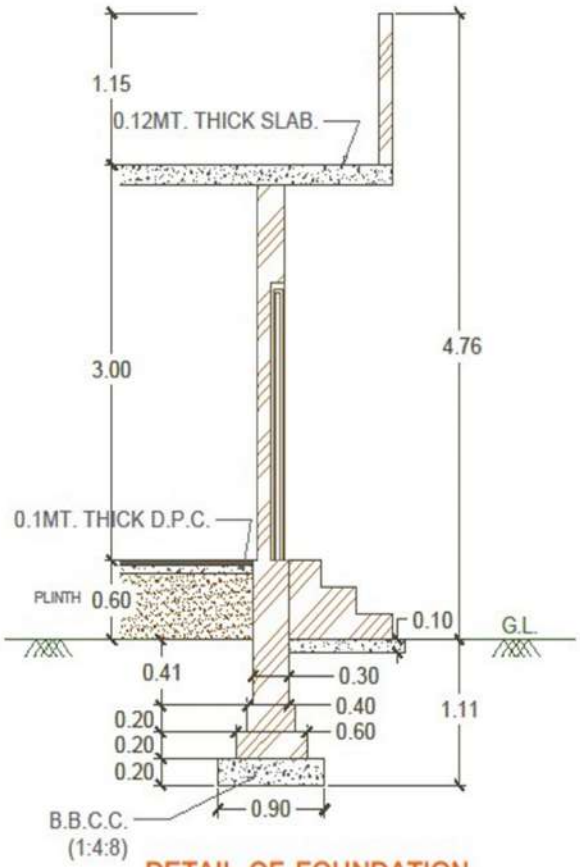
FRONT ELEVATION

FRONT ELEVATION

3/11/2021



SECTION A-A'

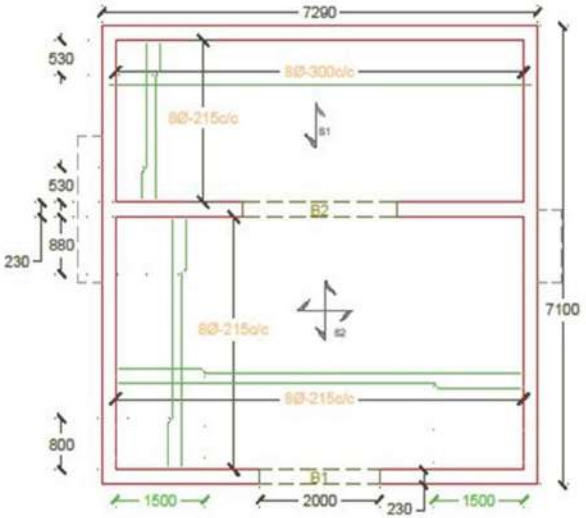


DETAIL OF FOUNDATION

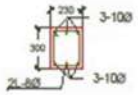
NOTE

All Dimensions are in M(meter) unless and untile stated

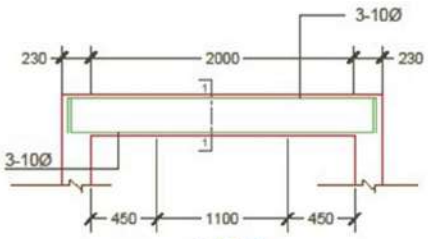
(1)Height of all partation wall are till slab bottom.
(2)Slab thicknes = 0.12 mt.
(3)Clear cover at beam = 25mm
at slab = 20 mm
(4)Grade of concrete = M25
(5)Grade of steel = fe415
(6)Offset of beam is inner side of structure



REINFORCEMENT DESIGN OF SLAB



SECTION(1.1)FOR
B1 : 230 X 300

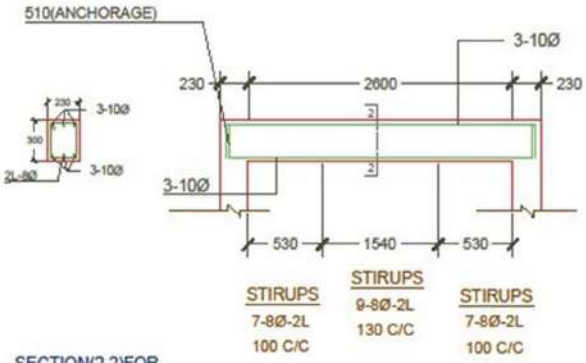


B1 - 230 x 300 mm

NOTE

All Dimensions are in mm unless and untile stated

(1)Height of all w/c partation wall are 2.2mt. and at bath 2.38 mt.
(2)Slab thicknes = 0.12 mt.
(3)Clear cover at beam = 25mm
at slab = 20 mm
(4)Grade of concrete = M25
(5)Grade of steel = fe415
(6)Offset of beam is inner side of structure



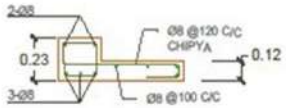
SECTION(2.2)FOR
B1 : 230 X 300

B2 - 230 x 300 mm

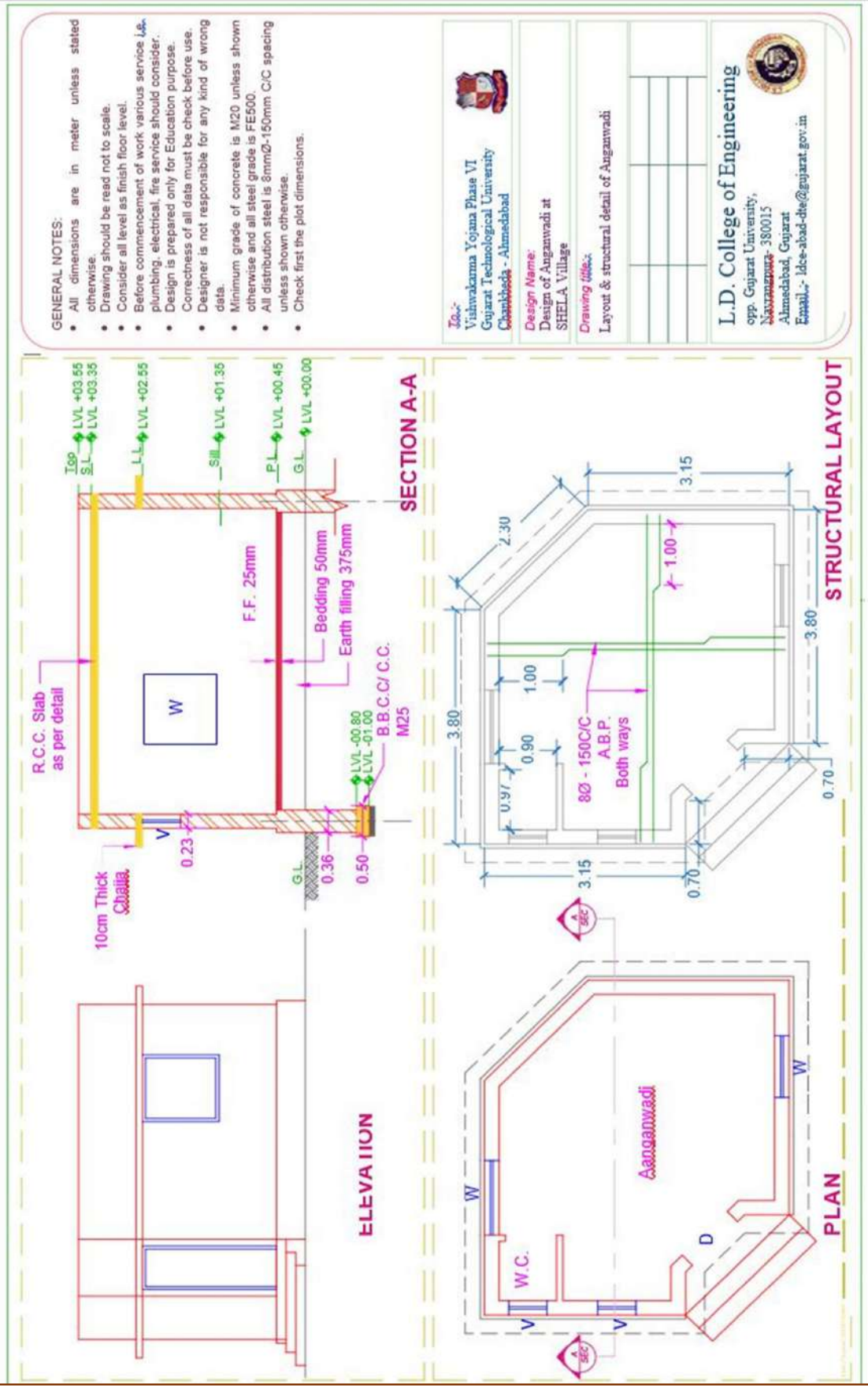
REINFORCEMENT							
SLAB MARK	SLAB THICK.	MAIN STEEL		DIST. STEEL		EXT.TOP	REMARK
		A	B	C	D	E	
S1	0.12	Ø8-@215C/C	—	Ø8-@250C/C	—	—	ONE WAY SLAB
S2	0.12	Ø8-@215C/C	Ø8-@215C/C	Ø8-@215C/C	Ø8-@215C/C	—	TWO WAY SLAB

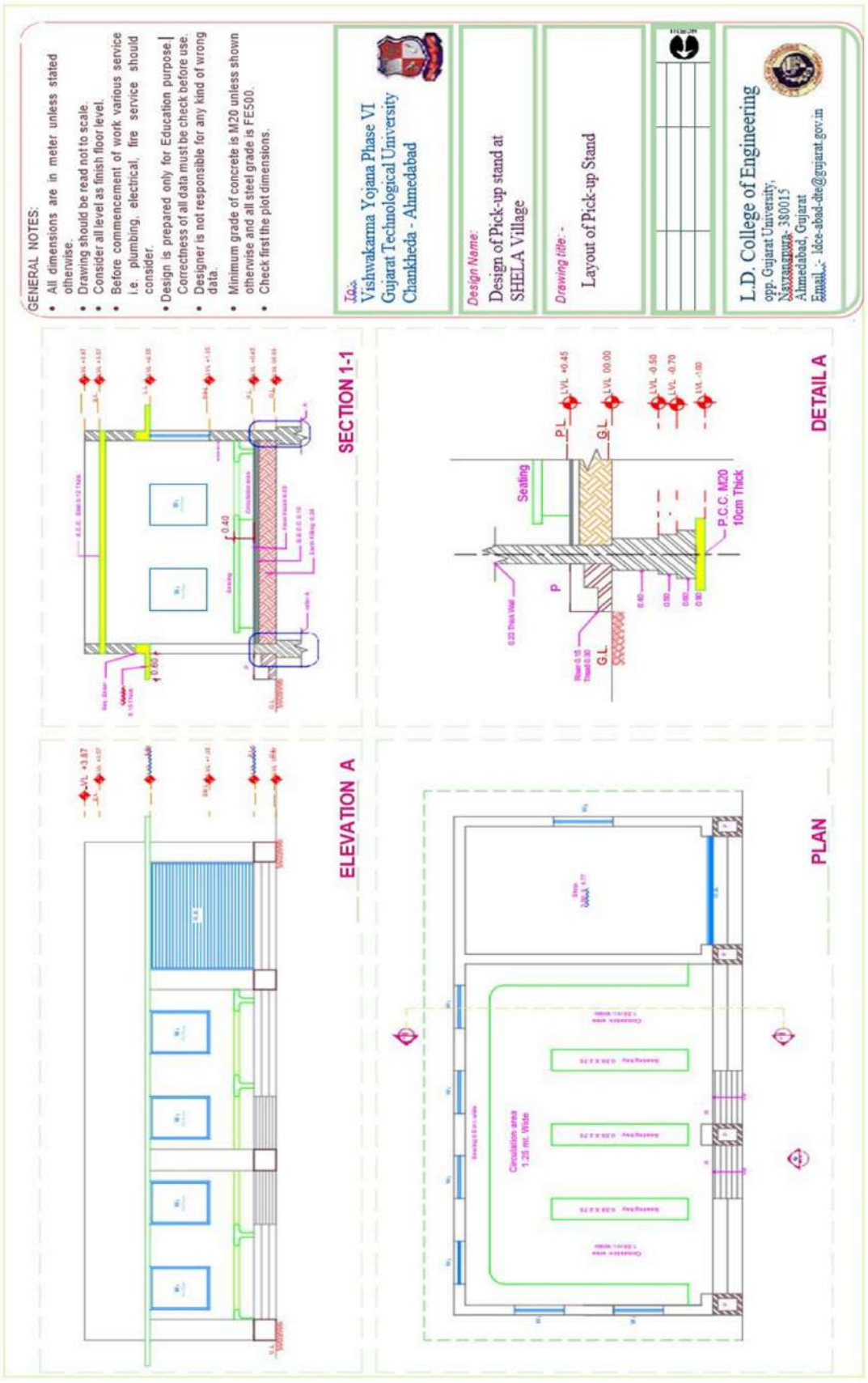
2-Ø8 BTM STEEL
2-Ø8 TOP STEEL
Ø6 @120 C/C STIRR

LINTEL :
CONTI. LINTEL



CHAJJA
DETAIL


GENERAL NOTES:
All dimensions are in meter unless stated otherwise.
Drawing should be read not to scale.
Consider all level as finish floor level.
Before commencement of work various service i.e. plumbing, electrical, fire service should consider.
Design is prepared only for Education purpose.
Correctness of all data must be check before use.
Designer is not responsible for any kind of wrong data.
Minimum grade of concrete is M20 unless shown otherwise and all steel grade is FE500.
All distribution steel is 8mmØ-150mm C/C spacing unless shown otherwise.
Check first the plot dimensions.
To,-
Vishwakarma Yojana Phase VI
Gujarat Technological University
Chankheda - Ahmedabad
Design Name:
Design of Anganwadi at SHELA Village
Drawing title:
Layout & structural detail of Anganwadi
L.D. College of Engineering
opp. Gujarat University,
Navrangpura - 380015
Ahmedabad, Gujarat
Email.:- ldce-abad-dte@gujarat.gov.in
SECTION A-A
Top
S.L
L.L
Sill
P.L
G.L
LVL +03.55
LVL +03.35
LVL +02.55
LVL +01.35
LVL +00.45
LVL +00.00
R.C.C. Slab as per detail
10cm Thick Chalia
F.F. 25mm
Bedding 50mm
Earth filling 375mm
B.B.C.C/ C.C. M25
LVL -00.80
LVL -01.00
W
V
0.23
0.36
0.50
G.L
ELEVATION
STRUCTURAL LAYOUT
2.30
3.15
1.00
3.80
0.90
0.97
8Ø - 150C/C A.B.P. Both ways
0.70
PLAN
Aanganwadi
W.C.
D


GENERAL NOTES:
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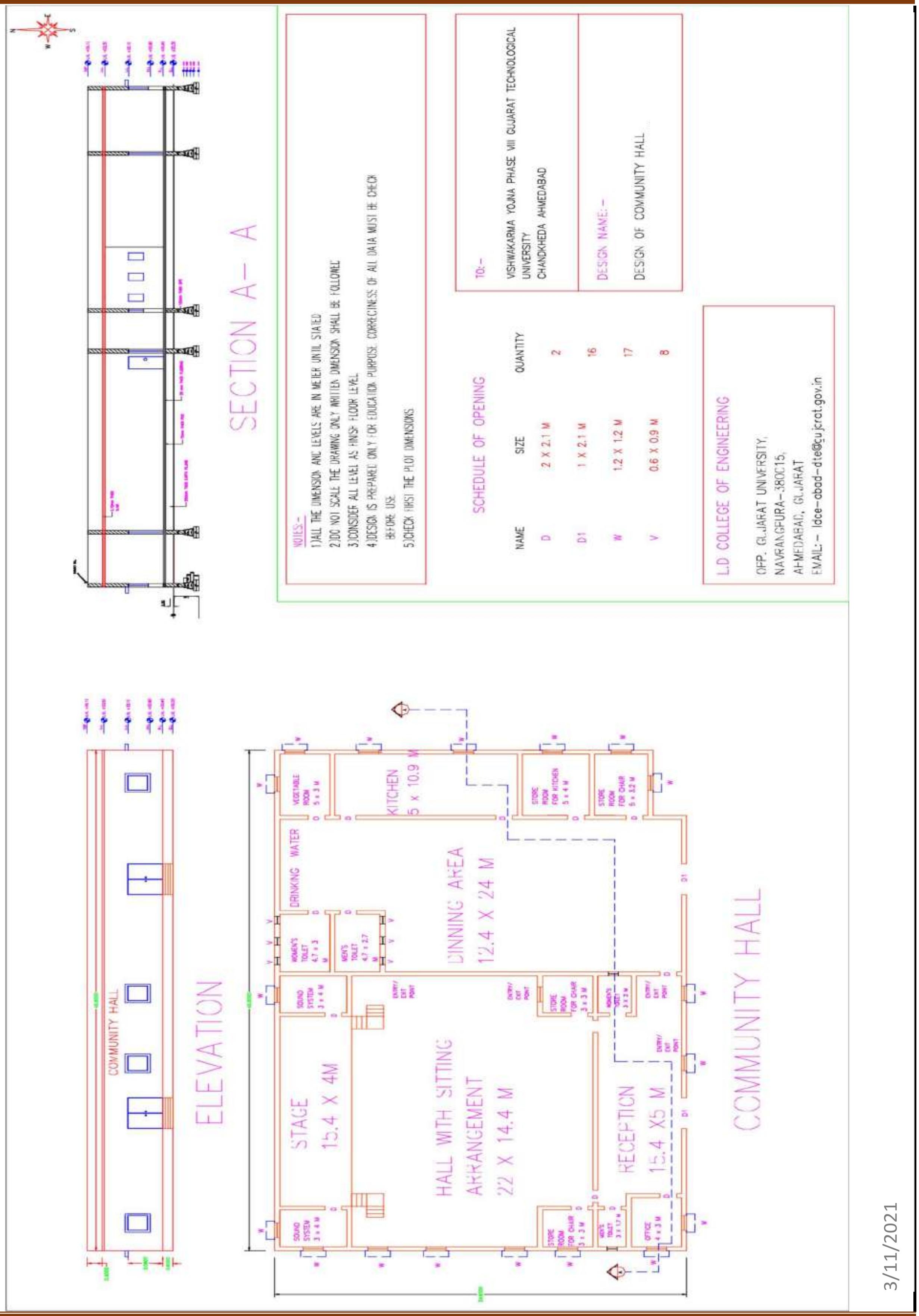
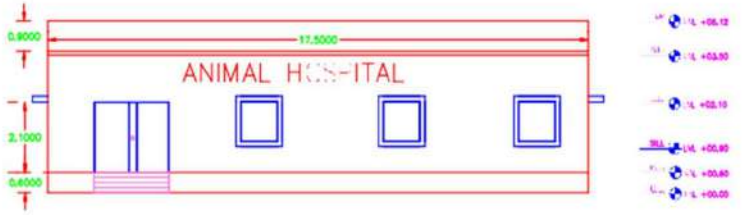
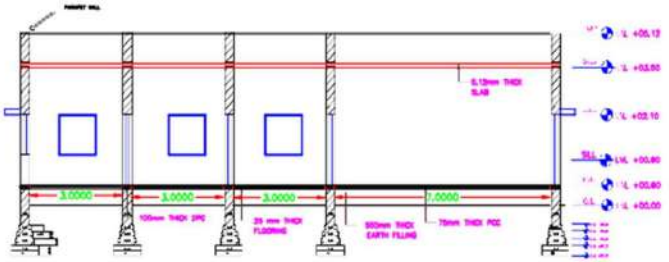
Drawing should be read not to scale.
Consider all level as finish floor level.
Before commencement of work various service i.e. plumbing, electrical, fire service should consider.
Design is prepared only for Education purpose. Correctness of all data must be check before use.
Designer is not responsible for any kind of wrong data.
Minimum grade of concrete is M20 unless shown otherwise and all steel grade is FE500.
Check first the plot dimensions.
Vishwakarma Yojana Phase VI
Gujarat Technological University
Chankheda - Ahmedabad
Design Name:
Design of Pick-up stand at SHELA Village
Drawing title: -
Layout of Pick-up Stand
L.D. College of Engineering
opp. Gujarat University,
Navrangpura, 380015
Ahmedabad, Gujarat
Email.:- ldce-abad-dte@gujarat.gov.in
SECTION 1-1
DETAIL A
ELEVATION A
PLAN
Seating
P.C.C. M20
10cm Thick
Circulation area
1.25 mt. Wide

3/11/2021

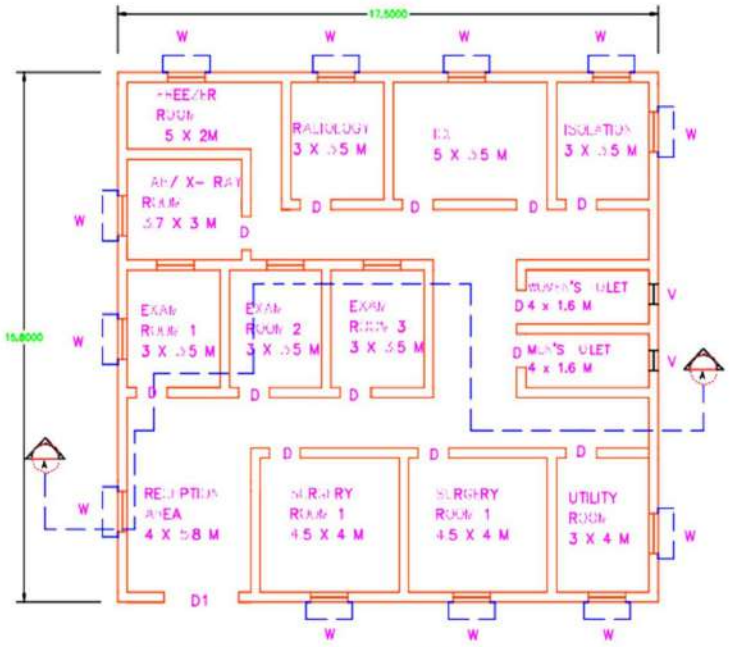

SECTION A– A
NOTES:-
1)ALL THE DIMENSION AND LEVELS ARE IN METER UNTIL STATED
2)DO NOT SCALE THE DRAWING ONLY WRITTEN DIMENSION SHALL BE FOLLOWED
3)CONSIDER ALL LEVEL AS FINISH FLOOR LEVEL
4)DESIGN IS PREPARED ONLY FOR EDUCATION PURPOSE. CORRECTNESS OF ALL DATA MUST BE CHECK BEFORE USE
5)CHECK FIRST THE PLOT DIMENSIONS
TO:-
VISHWAKARMA YOJNA PHASE VIII GUJARAT TECHNOLOGICAL UNIVERSITY
CHANDKHEDA AHMEDABAD
DESIGN NAME:-
DESIGN OF COMMUNITY HALL
SCHEDULE OF OPENING
NAME SIZE QUANTITY
D 2 X 2.1 M 2
D1 1 X 2.1 M 16
W 1.2 X 1.2 M 17
V 0.6 X 0.9 M 8
L.D COLLEGE OF ENGINEERING
OPP. GUJARAT UNIVERSITY,
NAVRANGPURA-380015,
AHMEDABAD, GUJARAT
EMAIL:- ldce-abad-dte@gujarat.gov.in
COMMUNITY HALL
ELEVATION
VEGETABLE ROOM 5 x 3 M
KITCHEN 5 x 10.9 M
STORE ROOM FOR KITCHEN 5 x 4 M
STORE ROOM FOR CHAIR 5 x 3.2 M
DRINKING WATER
DINNING AREA 12.4 X 24 M
WOMEN'S TOILET 4.7 x 3 M
MEN'S TOILET 4.7 x 2.7 M
SOUND SYSTEM 3 x 4 M
ENTRY/EXIT POINT
STORE ROOM FOR CHAIR 3 x 3 M
STAGE 15.4 X 4M
HALL WITH SITTING ARRANGEMENT 22 X 14.4 M
RECEPTION 15.4 X5 M
OFFICE 4 x 3 M
COMMUNITY HALL
3/11/2021



ELEVATION



SECTION A– A



ANIMAL HOSPITAL

NOTES –

1 ALL THE DIMENSIONS ARE IN METER UNLESS STATED.

2 DO NOT SCALE THE DRAWING ONLY WRITTEN DIMENSION SHALL BE FOLLOWED.

3 CONSIDER ALL LEVELS AS WITH FLOOR LEVEL.

4 DESIGN IS PREPARED ONLY FOR EDUCATIONAL PURPOSE CORRECTNESS OF ALL DATA MUST BE CHECK BEFORE USE.

5 FOLLOW FIRST THE MUNICIPAL BYELAWS.

SCHEDULE OF OPENING

NAME	SIZE	QUANTITY
D	2.4 X 2.1 M	1
D1	1 X 2.1 M	14
W	1.2 X 1.2 M	12
V	0.6 X 0.9 M	2

PROJECT:–

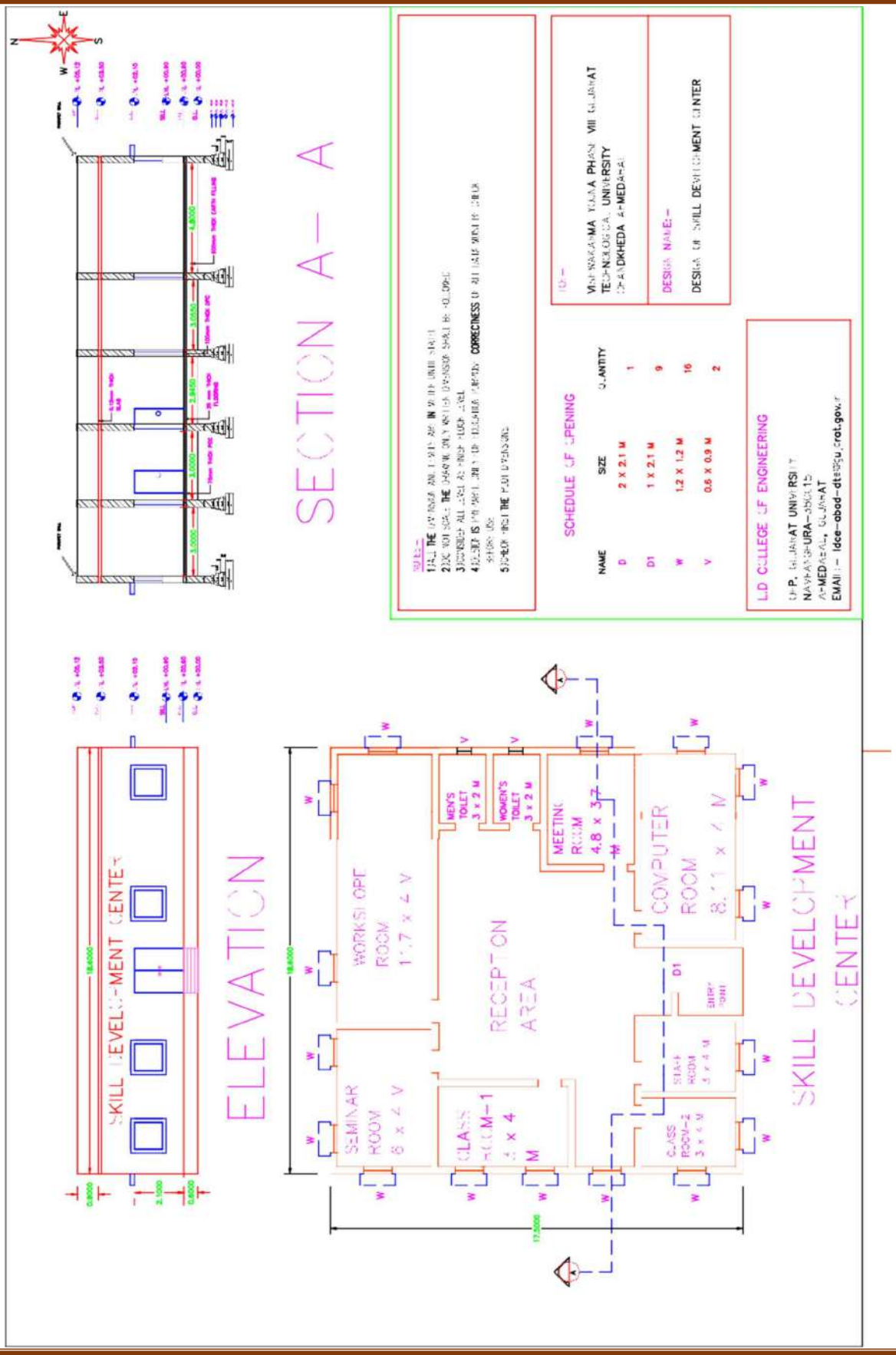
VISHWAKARMA YOJNA PHASE VIII GUJARAT
TECHNOLOGICAL UNIVERSITY
CHANDKHEDA AHMEDABAD

DESIGN NAME:–

DESIGN OF ANIMAL HOSPITAL

L.D COLLEGE OF ENGINEERING

OPP. GUJARAT UNIVERSITY
NAVRANGPURA-380015,
AHMEDABAD, GUJARAT
EMAIL :– ldce-abad-dte@gujcrat.gov.in


SECTION A- A
ELEVATION
SKILL DEVELOPMENT CENTER
SCHEDULE OF OPENING
NAME SIZE QUANTITY
D 2 X 2.1 M 1
D1 1 X 2.1 M 9
W 1.2 X 1.2 M 16
V 0.6 X 0.9 M 2
SEMINAR ROOM 8 x 4 V
WORKSHOP ROOM 1.7 x 4 V
MEN'S TOILET 3 x 2 M
WOMEN'S TOILET 3 x 2 M
MEETING ROOM 4.8 x 3.7
RECEPTION AREA
COMPUTER ROOM
CLASS ROOM-1
CLASS ROOM-2
STAFF ROOM
SHOP
LD COLLEGE OF ENGINEERING
EMAIL :- ldce-obad-dte@gu.prat.gov.in

3/11/2021