DETAIL PROJECT REPORT

VISHWAKARMA YOJNA: - VIII
AN APPROACH TOWARDS RURBANISATION

LAPKAMAN VILLAGE
AHMADABAD DISTRIC

PREPARED BY

NAME	BRANCH NAME	ENROLLMENT NO
LEUVA DIVYA BHARATBHAI	CIVIL ENGINEERING	171260106011
SOLANKI DHRUVEE RAJESHBHAI	CIVIL ENGINEERING	171260106023

SAL ENGINEERING & TECHNICAL INSTITUTE

GUIDE BY

PROF. RAVI. J. RAITHATHA

YEAR: 2020-21

GUJARAT TECHNOLOGICAL UNIVERSITY
Chandkheda, Ahmedabad – 382424 Gujarat

DETAIL PROJECT REPORT

ON

VISHWAKARMA YOJNA: -PHASE VIII
AN APPROACH TOWARDS RURBANISATION

LAPKAMAN VILLAGE
AHMADABAD DISTRIC

Prepared By

NAME	BRANCH NAME	ENROLLMENT NO
LEUVA DIVYA BHARATBHAI	CIVIL ENGINEERING	171260106011
SOLANKI DHRVEE RAJESHBHAI	CIVIL ENGINEERING	171260106023

SAL ENGINEERING& TECHNICAL INSTITUTE

GUIDE BY

PROF.RAVI.J.RAITHATHA

Year: 2020-21

Gujarat Technological University,
Chandkheda, Ahmedabad – 382424 Gujarat

CERTIFICATE

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

DETAIL PROJECT REPORT

LAPKAMAN VILLAGE
AHMADABAD DISTRIC

Under

VISHWAKARMA YOJNA: Phase - VIII
AN APPROACH TOWARDS RURBANISATION

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.

NAME	BRANCH NAME	ENROLLMENT NO
LEUVA DIVYA BHARATBHAI	CIVIL ENGINEERING	171260106011
SOLANKI DHRUVEE RAJESHBHAI	CIVIL ENGINEERING	171260106023

Date of Report Submission:	
Principal Name and Signature:	**PROF. P. M. RAVAL**
VY-Nodal Officer Name and Signature:	**PROF. HEMA VANAR**
Internal (Evaluator) Guide Name and Signature:	**PROF. RAVI. J. RAITHATHA**
College name:	**SAL ENGINEERING & TECHNICAL INSTITUTE**
College Stamp:	

ABSTRACT

- **Vishwakarma Yojana project and how you do your vision project?**

➢ Gujarat Technological University is allotted important and prestigious project of Vishwakarma Yojana by the Government of Gujarat for the year 2020-2021. The first phase project is aimed to study the present status and techno-economic survey of villages in District of the state in terms of basic and public amenities, essential commodities, and other infrastructural facilities for the need of people and to prepare report on adequacy of the available resource with reference to population of the village and growth of the area.

- **About your village description:**

➢ Lapkaman is the village which allocated to us by GTU. It is a village in Daskroi Taluka in Ahmadabad District of Gujarat State, India. It is located 20 KM from Ahmadabad District. Around 78% population of the village engaged with the agricultural activities. The basic facilities available in the village like over head tank, school, post office, etc.

- **About existing village condition:**

➢ In this village water supplied to the people is sufficient. Drainage system is not available. The condition of roads is Poor except entrance. There is no transportation facility in the village. In the village lack of basic facilities like public toilet, poor condition of panchayat building, Drainage system, there is no health centre, poor network connectivity, and shortage of water for irrigation, there is no public garden etc.

- **About your proposed designs your view for village development:**

➢ For development of the village infrastructure facilities like panchayat building, secondary school and public facilities like bus station are required. For sustainable development of the village rain water harvesting system, solar street light may be provided. For cleaning purpose Bio-Gas plant provided.

- **About future scope of the village development:**

➢ Based on the survey we tried to give design of required basic facilities to fulfill their needs. By providing these basic facilities to villagers migration rate will be decreased. This is ultimate aim of the Vishwakarma yojana.

- **Key Words:**

➢ Urbanization, Sustainable development, Infrastructure facilities, Smart development

ACKNOWLEDGEMENT

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

We wish to express our deep sense of gratitude to **Prof.(Dr.) Navin Sheth**, **Hon'ble Vice Chancellor,GujaratTechnologicalUniversity-Ahmedabad**,forhisencouragementand giving us the wonderful project.

We also express our gratitude to **Dr. J.C.Lilani**, **Registrar, Gujarat Technological University-Ahmedabad** for giving the complete support.

We express our sincere thanks to **Commissioner ate of Technical Education, Gujarat State** for appreciating and acknowledging our work.

We express our sincere thanks to **DDO, TDO, Sarpanch, Talati and staff members of Ahmadabad** District for providing us with requisite data whenever we approached them. Especial your thanks are to all villagers and stakeholders for their support during Survey.

We are also thankful to our **Prof**. **P. M. Raval, I/C Principal**, faculties of our colleges for their encouragement and support to complete this project work.

An act for gratitude is expressed to our **Internal guide PROF. RAVI. J. RAITHATHA From SAL ENGINEERING & TECHNICAL INSTITUTE** for constant inspiration And activity involvement in our project work.

We express our sincere thanks to, **Dr. Jayesh Deshkar, Hon'ble Director, Prof. G. A. Patel, GEC, Patan, Prof. Y. B. Bhavsar, VGEC, Chandkheda, Prof. K. L. Timani, VGEC, Chandkheda, Prof. Paresh Nimodiya, GEC, and Patan** for providing us technical knowledge throughout the project work.

We are also thankful to **Ms. Darshana Chauhan, Project Coordinator, Vishwakarma Yojana**, for all support during our work. We therefore, take this opportunity for this Project work expressing our deep gratitude and sincere thanks to her that without whose help and cooperation, it might not have been possible for us to produce this project work in the present form.

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

CONTENT

LIST OF TABLES

LIST OF FIGURES

ABBREVIATIONS

Short Name / Symbol	Full Name
PHC	Primary Health Center
CHC	Community Health Center
TDO	Taluka Developer Officer
DDO	District Developer Officer
PPP	Public Private Partnership
NGO	Non Governmental Organization
PURA	Provision of Urban Amenities in Rural Area
CSS	Centrally Sponsored Schemes
BOD	Biochemical Oxygen Demand
COD	Chemical Oxygen Demand
DEWATS	Decentralized Wastewater System
ZWM	Zero Waste Management
DRDA	District Rural Development Agency
EPF	Eco-friendly Plastic Fuel
MGNREGA	Mahatma Gandhi National Rural Employment Guarantee Act
PMGSY	Pradhan Mantri Gram Sadak Yojana
IAY	Indira Awash Yojana
NRuM	National Rurban Mission
PHC	Primary Health Center

-: Summary of Project Villages:-

Village features	Allocated Village	Ideal Village	Smart Village
Village	Lapkaman	Aakodra	Punsari
Taluka	Daskroi	Himatnagar	Modasa
District	Ahmadabad	Sabarkantha	Sabarkantha
Sarpanch	Arvindbhai r.	Hitesh patel	sunandaben
Talati	Subhahs motiani	Yogshkumar n. doshi	Ashishbhai chaudhary
Distance (km)	19.06	79.3	55.5
Population(As per Census 2011)	2194	1191	5500
Pin code	380060	383001	383307
Surveys	Techno-economic Survey	Techno-economicSurvey	Smart Village Survey
Facilities/ Key Features	Gram Panchayat, Road Network, Primary education, Anganwadi, O/H water tank, Post office,Sump, etc.	Gram Panchayat, Road Network, Outpost, Bus station, primary, sec. and higher. Secondary education, primaryto multi specialist. hospital, O/H Water tank, sump, Post office, college, etc.	Gram Panchayat, Road Network, Bus station, primary and secondary education, PHC, Entrancegate, O/H Watertank, sump, Post office, Village Pond, Recreational area, etc.
Technology	Mobile and Internet connectivity, Wi-Fi connection in Panchayat, etc.	Solar system, Mobile and Internet connectivity, Wi-Fi, Multi spec. hospitals, Online education, etc.	Solar system, Mobile and Internet connectivity, WiFi, CCTVs,sound system etc.
Drawbacks	Poor Maintenance	More people, traffic,etc.	Lack of services

Chapter 1: Ideal Village Visit From District Of Gujarat State:

1.1 Background

Figure: 1.1.1(a)
Map of PUNSARI

Figure: 1.1.1(b)
Satellite view of Punsari

The Image That Come In Minds of A Typical Indian Village Consists Of Rugged Roads, Frequents Power Cuts, Improper Working Of Schools, Improper Water Distribution, Garbage's Everywhere. But not In Case Of Punsari Village of Gujarat in India. The Village Is Located In Sabarkantha District Of Gujarat, India.

The Village Is Located At About 93 Km From Science City, Ahmedabad. The Village Has Suitable Climates and Is Free From Any Natural Calamities and Has Fertile Land. Around 98% of The People In The Village Are Dependent On Agriculture And Milk Production For Livelihood. The Major Crops Cultivated In The Village Are Cotton, Wheat And Potato. With Key Infrastructure Facilities Provided By The Gram Panchayat, The Live Of Villagers Have Improved Significantly. This, In Turn, Has Improved The Income Levels And Consumption Level Of Villagers.

The Village Is Facilitates With Modern Amenities and Facilities. The Village Has Concrete Roads, RO Plants For Water Purification, Solar Powered Street Lights, Regular Electricity, Primary Health Center, A Toilet In Each House, Proper Sanitation And Drainage System Which Is Completely Underground, Banking Facilities, ATM Facilities.

Adding On To The List The Village Has Air Conditioned Primary Schools Equipped With CCTV Cameras And Smart Education Technology, Speakers At The Junctions, Speakers At The Junctions, WI-FI Connectivity And An Independent Gram Panchayat. There is also a one bus service which is run by villagers.

The Panchayat Has Installed A Reverse Osmosis Plant In 2010 To Ensure The Supply Of Clean Drinking Water To The Villagers. During Wedding and Other Ceremonies Water Tankers Are Arranged. Drinking Water applications Available for All. The Gram Panchayat Has Created 3.5Km Of Underground Drainage System. The Village Has An Area Of 1.5 Square Km. The Gram Panchayat Has Spent 1.5crore To Build A Wall To Wall Extended Concrete Road Inside The Village.

Figure.1.1.2 Street lights

The Village Has Set Up The Electricity Generation Plant For The Generation Of Electricity By Waste Generated In The City.. A Tractor Trailer Collects Waste Twice In A Day From The Village. The Government Has Installed A 66 Kv Sub-Station In The Village That Supplies 24x7 Power To Village. This Has Helped Improving The Lives Of People And Helped The Panchayat ToImplementVariousOtherInfrastructureFacilities.ThereHaveBeenAround350StreetLights Have Been Set Up With LED Lights, Which Run On Solar Power.

Figure1.1.3 Street Light & C.C.T.V. Camera

Figure 1.1.4 Wi-Fi Connectivity

The Village Has Wi-Fi Connectivity since 2010 and Has Entered Into A Lease Line Agreement with Reliance Communication. The Gram Panchayat Takes 10rs Per Month For Unlimited Internet Excess With A Speed Of 3 Mbps. CCTV Camera Installations At Key Locations Has Helped Maintain A Civil Discipline Inside The Village. Similarly, CCTV Cameras Have Been Installed Inside The Schools And Health Centre And It Consist of 124 Cameras In Whole Village At Every Street And Corners. For The Announcement Of Any Instructions In Emergency Situation They Have Installed 140 Speakers On Every Streets Of This Village, Which Is Directly Operated From The Panchayat.

Figure 1.1.5 Primary School

There Are Five Primary Schools in Punsari. All The Five Schools Have CCTV Cameras Placed To Enable Parents Check Their Wards 'Performance Without Interrupting The Lectures And Also To Keep A Watch On The Teachers.[7] The School Drop-Out Rate Is Zero In Punsari. The Village Was Rated B+ During Ganotsav 2011 Which Is An Annual Education Campaign Run By The State Government. Similarly, There Are Eight Anganwadi Centers Running In The Village

With 450 Kids Enrolled. There Is One Milk Bank And One Outpost Police Station. There Is Proper Sanitization With All Houses Having A Toilet.

Figure: 1.1.6 Anganwadi

The Gram Panchayat Has Digitized All Land Records, Which Can Be Accessed By Anyone By Paying Adnominal Fee Of Rs 10. Similarly, The Gram Panchayat Facilitates People In Paying Electricity And Other Utility Bills. This Has Brought Transparency In The System And Helped In Implementing Infrastructure Facilities Faster. The Gram Panchayat Has A Swift Approach Towards Development Where They Spend In Creating Fixed Assets Whereas Day To Day Running Has Been Outsourced To Private Individuals Who Ensure The Facilities Remain Profitable As A Commercial Activity. Currently, the Gram Panchayat Has A 75, 00,000/- Surplus FundAgainstANetDebtOf10LakhIn2006.AllThePeopleInTheVillageHaveOpenedBank Accounts. However, Loans For Consumer Durables Are Not Prevalent. Every People In The Village Have Their ADHAAR Card And Election Card.

❖ **Study Area Location:**

Country: - INDIA

State: - GUJARAT

District: - SABARKANTHA

Coordinates: -

23’20’59.46”N 73’8’12.48”E

Figure.1.1.7 Punsari village

1.2 Concept: IDEAL Village

1.2.1Objectives:

- To Improve The Living Standards Of The Peoples By Providing Various Basic And Non-Basic Facilities In The Village.
- To Increase The Literacy Rate Of The Village By Providing The Primary And Secondary Schools In Village And Also By Improving The Facilities Available In This Schools.
- Prevent Distress Migration from Rural to Urban Areas, Which A Common Phenomenon InIndia'sVillagesDueToLackOfOpportunitiesAndFacilitiesThatGuaranteeADecent Standard Of Living.
- Provision Of Security To The Village By Providing CCTV Cameras And Street Lights In The Village.
- Provision Of Better Infrastructure Facilities, Ex: Residential and Agricultural Infrastructure.
- Provide Easier, Faster And Cheaper Access To Urban Markets For Agricultural Produce Or Other Marketable Commodities Produced In Such Villages

1.2.2 IDEAL VILLAGE: - AKODARA

Akodara is a village in Sabarkantha district of Gujarat state, India. It is located 10km (6.2mi) away from Himmatnagar; 41 km (25mi) from district head headquarter Sabarkantha and 64 km (40mi) from state capital Gandhinagar. The village is administrated by Sarpanch. The village is known to be India's first digital cashless village where most of the people use digital method to make payment between rupees 10 to 5000.In 2015, the village was adopted and developed by the ICICI foundation as a digitized village with a rural branch of the bank.

Mawlynnong (Meghalaya):

Mawlynnong (Meghalaya) Asia's Cleanest Village:

Mawlynnong, A Small Village in Meghalaya, Was Awarded the Impressive Tag of Cleanest Village In Asia' In 2003 By Discover India Magazine. Located At About 90 Kms From Shillong, The Village Offers A Sky Walk For You To Take In The Beauty As You Explore It. According To Visitors, You Cannot Find A Single Cigarette Butt/Plastic Bag Lying Around There.

After Visiting The Ideal Village We Learn What Is Truly Be Called An Ideal Village And What We Need To Kept In Mind While Doing This Project About Our Village. We Also Learn What Points We Need To Focus In Making Our Village An Ideal One.

1.2.3 The Idea of Model/Smart Village

By Moving People And Businesses To Smart Villages, Revenue, Resources And Job Opportunities Will Increase In Rural India, While Cities Can Decongest. The Idea Of An "Adarsh Gram" Or Model Village Has Been Explored Earlier As Well, Most Notably Through The Pradhanmantri Adarsh Gram Yojana, Launched By The Central Government In 2009-10. The Scheme Was Implemented In Pilot Model In 1000 Villages Of Assam, Bihar, Himachal Pradesh, Rajasthan And Tamil Nadu, With An Allocation Of Rs 10 Lakh Per Village. This Limit Was Later Raised To Rs 20 Lakh Per Village. The Target Villages Under The Scheme Were Those With More Than 50% Of The Population Belonging To Scheduled Castes (Sacs). Additionally, State governments Have Also Taken Steps in This Direction. Himachal Pradesh Launched A MukhyaMantri Adarsh Gram Yojana Along Similar Lines In 2011, With The Allocation Of Rs 10 Lakh Per Village.

Key Elements

A 21st Century Model Village In India Needs To Incorporate Certain Key Themes Which Would Be Essential For Its Success.

Key Elements Of A Model Village Are Given Below:

A. Better Road Network

B. Drainage System

C. Ro Plant

D. Bus Service

E. Electro-Osmosis Plant

F. Recreational Facilities

G. Skill Development Centre

H. Case less payment

I. Baba Shaheb Aambetkar university

J. Bank , ATM

K. Hospital , animal hospital

L. CCTV , sound system

1.2.4 Resources

For An Mp, There Are 3 Primary Resource Streams Which Can Be Utilized For This Purpose:

- Funds Under Existing Schemes Across Different Sectors Such As Health, Education, Skill Development, Livelihood Etc Could Be Utilized, And Based On The Specific Demands Of The Village; Resources Could Be Channelized Into The Development Of The Village. Some Important Centrally Sponsored Schemes (Css) Which Could Be Utilized Are Nrlm, Nhm, SSA, Nrega, Brgf, Rkvy And Mid-Day Meal Scheme.
- Mplad Funds (Rs 5 Corer Per Year) Could Be Utilized For The Construction Of High Quality, Sustainable Assets Such As School Buildings, Hospitals, Anganwadi Centers And School Kitchens For Mid-Day Meals. Funds Could Also Be Channelized Into Road Construction, And The Construction Of Toilets In Schools And Homes, Particularly For Girls.
- Css Funds, Of Which A Much Larger Corpus Is Available After The Latest Amendment To The Companies Act, Could Also Be Used For The Purpose Of Infrastructure Development In The Constituency.
- Gram panchayat could Also Raise Loans, If Legally Permitted to do so under the State Panchayat Raj Acts like In The Case of Kerala.

1.3 Physical and Demographic Profile

The Population Of Punsari Was 5500 As Per 2011Cencus Of India Which Has Increased To 5500 In 2011. As Of June 2012, The Population Is 6000.

Economic Profile

In 2006 The Economic Condition Of The Village 'Punsari' Was Not Good. But After The New Sarpanch Is Elected In 2006 The Village Has Done A Tremendous Development In Economy, Life Style Of Peoples, Scopes Of Jobs Etc. In The Last Decade, With The Help Of Governments Various Schemes And Opportunity The Economy Of The Village Has Raised.

Social Scenario

This Village Generally Consist Of A Large Number Of Rajput Families And Other Communities. The Main Source of Income Is Farming, Gardening of Varieties of Fruits like Lemon, Amala, Mangoes, Plums, Chickus, Papaiya Etc. Of Late People Have Migrated To Other Town & Cities In Search Of Job. Earlier People of Rajput Community Were Recruited By Government in Police & Army., This Days Community Has Entered Different Profession Like. The Population Of Village Today Is 10000Appx.

Infrastructure Facilities

In The Punsari Village There Are Good Infrastructure Facilities As Compared To Other Villages Like, Banks, Playgroups, Primary Health Center, Mobile Library, Skill Development Center, and Primary School Etc.

How to Develop the Ideal Village / Key Elements of Ideal Village

To Make Any Village An Ideal Village, We Need To Provide This Key Elements Or Facilities that Village.

A. Better Road Network

Figure.1.3.1 Roads in Punsari village

B. Drainage System
C. Ro Plant

Figure.1.3.2 RO Plant in Punsari village

D. Bus Service

Figure.1.3.3 Bus service in Punsari village

Figure.1.3.4 Electro-Osmosis plant in Punsari village

E. Electro-Osmosis Plant

F. Recreational Facilities

G. Skill Development Centre.

H. Mobile Library

Figure.1.3.5 Mobile library in Punsari village

1.4 SWOT Analysis of Ideal Village

Strength	Weakness	Opportunities	Threats
Proper Drainage Facilities	Improper Disposal Of Waste	Improving In Waste Management	Lack Of Awareness Of Villagers About Cleaning
Transportation Facilities	Improper Layout Of Village	Woman Empowerment	Lack Of Awareness Of Villagers About Educations
Sanitation Facilities	No Facilities For Higher Secondary Education	Educational Awareness	Lack Of Funds And Technical Knowledge In Agricultural Fields

Table 1.10 SWOT analysis of ideal village

1.5 Future Prospects:

In This Village The Gram Panchayat Is Planning To Build A College In The Village, So That The Students In The Village Will Not Have To Go To Other Village For Graduation Studies And So Their Time And Money Both Will Be Saved.

1.6 Benefits of the Visits

After Visiting The Ideal Village We Learn What Is Truly Be Called An Ideal Village And What We Need To Kept In Mind While Doing This Project About Our Village. We Also Learn What Points We Need To Focus In Making Our Village An Ideal One.

With Punsari village Sarpanch

1.7 civil aspects required in ideal village

We have observed the balance of commercial, residential and recreational land use in the Jarod village but as per the feedback which were given by villagers some facilities are lacking in the village from civil aspects and these are, Gas Pipelines, Biogas Plant, Cold Storage Area, Rain Water Harvesting, Solar Street Lights, Public Wi-Fi Connection, Fire Station , etc.

Moreover, by providing skill development centers for the youth, panchayat should also focus on enabling the youth to setup the self-employment units. Water harvesting, Ground water recharge and improvement of village tanks/lakes are also projects to be pursued.

Chapter 2: Village Literature Review -Civil

2.1 Introduction: Urban &Rural:

2.1.1 Urban:

An Urban Area Is The Region Surrounding A City. Most Inhabitants Of Urban Areas Have Nonagricultural Jobs. Urban Areas Are Very Developed, Meaning There Is A Density Of Human Structures such As Houses, Commercial Buildings, Roads, Bridges and Railways."Urban Area" Can Refer To Towns, Cities, And Suburbs.

Figure.2.1.1 Urban area

2.1.2 Rural:

A Rural Area is An Open Swath of Land That Has Few Homes or Other Buildings, And Not Very Many People. A Rural Areas Population Density Is Very Low. Many People Live In A City, Or Urban Area. Their Homes And Businesses Are Located Very Close To One Another.

Figure.2.1.2 Rural area

2.2 Importance in rural context:

Rural Development Is The Process Of Improving The Quality Of Life And Economic Well-Being Of People Living In Rural Areas, Often Relatively Isolated And Sparsely Populated Areas. Education, Entrepreneurship, Physical Infrastructure, and Social Infrastructure All Play An Important Role In Developing Rural Regions.

- By Developing The Rural Areas We Can Improve Life Style Of The Residential.

- By Developing The Rural Area We Can Make Easy Life Style Of The Villagers.
- By Developing The Rural Area We Can Solve The Problems About Migration.
- By Developing The Rural Areas We Can Prevent The Unemployment.
- By Developing The Rural Areas We Can Increase The Literacy Ratio.
- By Developing The Rural Areas We Can Increase Growth Rate Of The Country.

2.3Ancient Villages / Different Definition Of: Rural Area /Villages:

A village is a Community Larger than Hamlet but Smaller than Town Having population Range between Hundreds to Few Thousands. Villages Are Permanent Dwellings. In Past Villages Were Usually Form Of Community Involved In Agriculture Practice.

Definition of Rural Area:

Census Board Define "Urbanized Area Which Is of Group Having Population Density of at Least Thousand People Per Square Mile". Whereas "Rural Area Is Any Non-Urban Or Non-Highly Rural Area". The Majority Of The Population Of The Region Involved In Agricultural Practice Is Known As Rural Area.

Particulars	Total	Male	Female
Total No. Of Houses	460	-	-
Population	2194	1138	1056
Child (0-6)	303	156	147
Schedule Caste	95	51	44
Schedule Tribe	10	6	4
Literacy	81.86%	90.22%	72.83%
Total Workers	751	652	99
Main Worker	738	-	-
Marginal Worker	13	11	2

Table 2.3 Lapkaman village census data (2011)

2.4 Scenario: Rural / Urban India & Gujarat as Per Census 2011 (Population Growth):

Lapkaman Village Census Data:

2.5 Rural Issues &Concerns:

Despites Of Having Facilities Of Basics Amenities In The Village The Villages Have Many Problems Due To Which The Village Growth Had Decreased.

❖ The Following Are The Concern And Issue:

- Bad Road Network
- Unplanned Irrigation System
- Insufficient Sewer Line
- Poor Conditions Of Public Buildings
- Unhygienic Environment
- Unavailability Of Hospitals
- Unavailability of bus system
- Drainage system
- Unavailability High school

2.6. Various Measures for Rural Development

The Rural Development Is A Process Of Increasing The Quality Of The Life And Living Standards of The People Of The Village By Providing Them Various Rural Facilities.

The Development Of The Rural Areas Can Be Done By Providing The Villagers Various Facilities Which Includes:

- Better Infrastructure
- Proper Houses
- Pure And Safe Drinking Water
- Better Road Network
- Better Transit System
- Provision of Recreational Areas
- Rain Water Harvesting Facilities

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

The Foremost Priority With The Government Is To Enhance Quality Of Life In Villages So That It Is On A Par With Urban Areas, The Department Said. The Department Has Asked Gesso Make The Amenities Available Through Ongoing Schemes, Including The Mahatma Gandhi National Rural Employment Guarantee Act (MNREGA).

Since The Government Is Committed To Provide At Least 55 Liters Per Capita Day (LPCD) Of Water To Every Family In A Village, The Gaps Should Focus On Providing Individual Households Tap Connections.

At The Same Time, Focus Should Also Be Given To Construction Of Toilets For Each Household Under The MNREGA And The Normal Bharat Abhiyan. Schools And Anganwadi In Villages Should Be Provided With Toilets Even As Panchayat Have To Take Steps Towards Solid Waste Management, The Department Said.

2.7.1 Sustainable Village Development Concept:

Sustainable Development Is The Organizing Principle For Meeting Human Development Goals While At The Same Time Sustaining The Ability Of Natural Systems To Provide The Natural Resources And Ecosystem Services Upon Which The Economy And Society Depend. The Desired Result Is A State Of Society Where Living And Conditions And Resource Use Continue To Meet Human Needs Without Undermining The Integrity And Stability Of The Natural Systems.

2.8 Other Projects and Schemes:

Recently The Gram Panchayat Had Raised The Fund For The Construction Of New Gram Panchayat For The Better Management Of The Village. The Gram Panchayat With The Help Of The Government Has Carried Out The Construction Of The Road Network From The Last Year But The Construction Work Is Not Going On Currently From Last Few Months.

Chapter 3: Smart Cities/ Village Concept as Per Your Idea And Its Visit:

3.1 Introduction: Concepts, Definition and Practices:

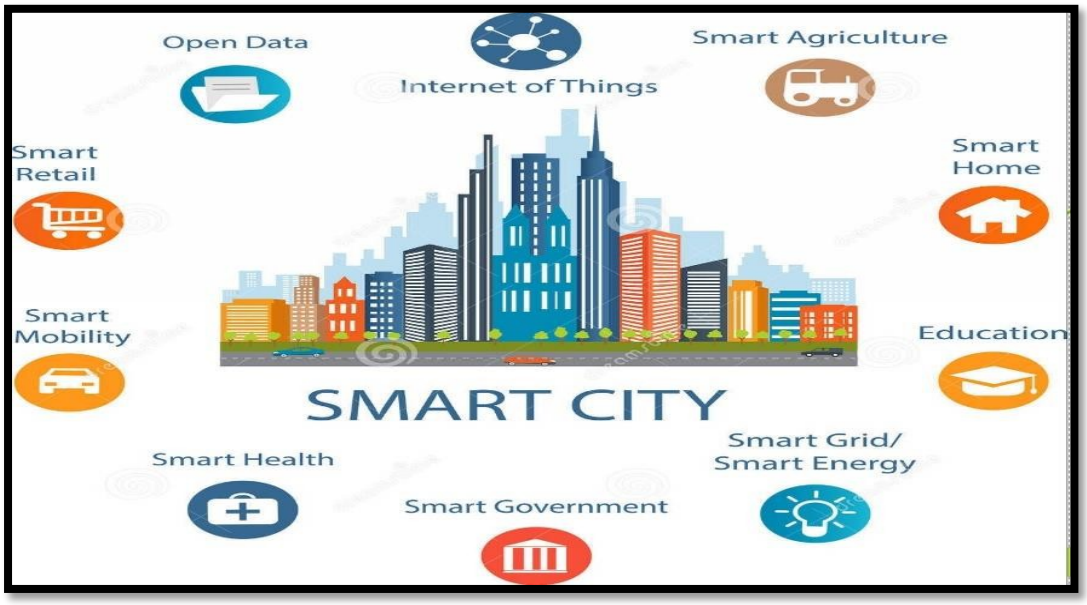


Figure.3.1 Smart Cities/ Village Concept

What Is Smart Village?

In Smart Villages Access To Sustainable Energy Services Acts As A Catalyst For Development Enabling The Provision Of Good Education And Healthcare, Access To Clean Water, Sanitation And Nutrition, The Growth Of Productive Enterprises To Boost Incomes, And Enhanced Security, Gender Equality And Democratic Engagement.

The Challenge:

Unfortunately It Is A Fact That, In The World Today, 1.3 Billion People Remain Without Access To Electricity. In Addition, 3 Billion Are Still Cooking On Dangerous And Inefficient Stoves. Many Of Them Live In Remote Rural Village Communities. Until Such Communities Have Access To Modern Energy Services, Little Progress Can Be Made To Develop Their Economies And Improve Their Lives.

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

- The Main Benchmarks Of The Smart Cities/Villages Are,
- Clean Medaled Roads
- Literacy And Compulsory Education Up To Final Basic Course
- Work And Means Of Earning
- Proper Inter And Intra Village Connectivity
- Dust Free Lanes &Streets
- Hygienic And Clean Water Supply And Access Toll
- Houses Of Worship For All
- Primary And Secondary Schools With Industry Driven Education
- Library With E-Library Facility
- Professional Institutions Within An Area Of 10Kms
- Proper Means For Health Check-Up And Treatment
- Access to Multi-Facility Hospital within an Area of 10Km.
- Empowered Panchayat For Settling Disputes
- Produce Its Own Grains, Vegetable, Fruits And khadi
- Fixed Place For Evacuation
- Wi-Fi/ Broadband Connectivity
- Recreation And Playgrounds For Adults And Children
- Village Theatre, School And Public Hall

For Smart Village:

Following Mandatory Targets Are Necessary To Achieve Before Declaring Any Gram Panchayat A Smart Village. State Government Can Make Changes In The Mandatory Targets From Time To Time By Considering Certain Programs Or Targets.

- 100%Vaccination
- 0% Drop Out Ratio
- Open Defecation Free Village
- 90% Tax Collection

- Compulsory Door To Door Solid Waste Disposal
- Distribution Of ATVT Services At E-Gram Center
- 'A' Grade Primary School
- 100% Individual Toilet
- Remove Encroachments On Public Roads
- Malnutrition - No Child Should Be In 'Redone'
- Mandatory Organizing Four Gram Sabha In A Year With 50%Presence
- 100% Implementation Of Direct Deposit Of Government Assistance Into
- Beneficiary's Account.(D.B.T.)
- 100% Enrollment of Children in Anganwadi.
- To Update Revenue/ Gram Panchayat Records.
- Road Side Plantation in the Village.
- 100% Wi-Fi Village.

3.3 Technological Options for Smart Cities:

- Smart Energy.
- Smart Mobility.
- Smart Infrastructure.
- Smart Public Services.
- Smart Care.

3.4 Road Map and Safe Guards for Smart Cities:

India Is A Country Of Villages. Any Product Or Solution That Has To Succeed And Be Popular In The Country Has To Be Of Direct Relevance To Village Life Of This Country. As Per Census Of India 2011, The Country Has A 69% Rural Population Spread Across More Than 600,000 Villages. Now, That Being The Case, No Marketer Worth His Salt Can Ever Dream Of Ignoring Rural India.

Globally The Concept Of 'Smart City' Is A Significant Initiative That Seeks To Improve The Quality of Life Of Urban Citizens. In India to the New Central Government's stated Priority of Building 'Smart Cities' Has Found a Relatively Modest Budgetary Allocation of Rs. 7,060 corer For FY 2014-15, Though Its Significance for the Long Term Can Be Much Larger. Be It the Push of the 'Smart City' Concept from Solution Providers, Real Estate Developers or the

Government Itself, the Concept Finds Wide Appeal. The Government of India's Stated Plan to set up 100 Smart Cities across the Country Has the Potential to Be a Game-Changer in the Country's Urban Landscape and the Lives of Ordinary Citizens.

3.5 Issues &Challenges:

Smart City Council Of Is Facing Many Issues and Challenges in the Smart City Project. Some of the Issues Are Shown Below,

- Retrofitting Existing Legacy City Infrastructure To Make It Smart
- Financing Smart Cities
- Availability Of Master Plan Or City Development Plan
- Three-Tier Governance
- Providing Clearances In A Timely Manner
- Dealing With A Multivendor Environment
- Capacity Building Programmer

3.6 Smart Infrastructure:

Figure.3.2 Smart Infrastructure

Cyber Security In The Context Of Smart Cities Is A Hot Topic. The Objective Of Smart Cities Is To Optimize The City In A Dynamic Way To Offer A Better Quality Of Life To The Citizens Through The Application Of Information And Communication Technology (ICT). The Range Of Areas Where Cities Can Become Smarter Is Extensive Smart Infrastructure Is One of the Main Points in the Smart Village Development .It Is Essential to Provide smart homes in the Smart Cities/Villages.

- The Main Points Of Smart Infrastructure Are,

- Energy Efficient Buildings
- Low Cost Houses
- Use Of Environment Friendly Materials
- Use Of Solar Rooftops For Saving Energy
- Rain Water Harvesting
- Recycling Of Used Water
- Recycling Of Waste Products

3.7 Cyber Security:

- It Is An Evolution Of Connected Cities With The Prevalence Of Data Exchange At A Larger Scale. The Increase Of Data Exchange Controls Multiple Services And Assets Leads To More Automation In The City.
- As Several Critical Services Become Interconnected, The Need For Cyber Security Surges To Protect Data Exchanges, Privacy As Well As The Health And Safety Of Citizens. However, There Is Currently No Harmonized Guideline Or Standard To Model These Data Exchanges. This Leads IPT Operators, Municipalities, Policy Makers As Well As Manufacturers, Solution Providers and Vendors To Adopt Specific Solutions With Low Scalability And Disparate Requirements.

3.8 Retrofitting-redevelopment-Greenfield development district Cooling:

Air Condition from Hammond Services, In The Southeast, Air Conditioners Are Almost Crucial Pieces Of Equipment For Home Comfort. However, It Can Be Difficult To Find The Right Air Conditioner For Your Home, One That Will Provide Enough Cool Air In The Summer To Cool Your Home Without Driving Your Energy Costs Through The Roof. We Can Help! At Hammond Services, We Can Help You Choose The Perfect Air Conditioner For Your Home, Installs Professionally, And Even Maintain/Repair It In The Years Ahead. Energy Efficient and Affordable Air Conditioners, When It Comes Down To Selecting A New Air Conditioner For Your Home, There Are A Few Things You Should Consider. First Of Allis Efficiency. By Choosing Energy Efficient Model, You Can Be Sure Your Money Is Being Well Spent And Isn't Being Thrown Away With Inefficiencies. Get the Most Bang For Your Buck with an Air Conditioner That Won't Cost a Fortune to Run. Reliability You Can Count On. As A Carrier Factory Authorized Dealer, Our Commitment To Quality Products You Can Count On Is Clear. We're Confident When We Say That with the Proper Maintenance, You Can Count on Our Air Conditioners to Operate Efficiently for Years to Come. If you're Having Trouble Choosing an

Air Conditioner for Your Home, Contact Us Today – We Can Help You Weigh Your Options.

The Average Annual Temperature of the District (SABARKANTHA):

TEMPRATURE			
Months	**Normal**	**Warmest**	**Coldest**
January	20.1°C	28.3°C	11.8°C
February	22.2°C	30.4°C	13.9°C
March	27.3°C	35.6°C	18.9°C
April	31.7°C	39.8°C	23.7°C
May	33.9°C	41.5°C	26.2°C
June	32.8°C	38.4°C	27.2°C
July	29.5°C	33.4°C	25.6°C
August	28.2°C	31.8°C	24.6°C
September	29.1°C	34.0°C	24.2°C
October	28.5°C	35.8°C	21.1°C
November	24.7°C	32.8°C	16.6°C
December	21.3°C	29.3°C	13.2°C

Table 3.8 the Average Annual Temperature of the District (SABARKANTHA)

3.8.1 Green Building:

- A Green Building Is A Structure That Is Environmentally Responsible And Resource- Efficient Throughout Its Life-Cycle. These Objectives Expand and Complement the Classical Building Design Concerns of Economy, Utility.
- Green Buildings May Incorporate Sustainable Materials In Their Construction (E.G., Reused, Recycled Content, Or Made From Renewable Resources).
- Create Healthy Indoor Environments With Minimal Pollutants (E.G., Reduced Product Emissions).
- And Feature Landscaping That Reduce Water Usage (E.G., By Using Native Plants That Survive Without Extra Watering).

- A Green Building Is A Structure That Is Environmentally Responsible And Resource-Efficient Throughout Its Life-Cycle. These Objectives Expand and Complement the Classical Building Design Concerns of Economy, Utility. Durability and Comfort.

Figure 3.3 Green building

3.8.2Features of a Green Building:

- Minimal Disturbance To Landscapes And Site Condition
- Use Of Non-Toxic And Recycled / Recyclable Material
- Efficient Use Of Water And Water Recycling
- Use of Energy Efficient and Eco-Friendly Equipment.
- Use Of Renewable Energy
- Quality Of Indoor Air Quality For Human Safety And Comfort
- Effective Controls And Building Management Systems

3.9 Strategic Options for Fast Development:

- The Strategic Components Of Area-Based Development In The Smart Cities Mission Are City Improvement (Retrofitting), City Renewal (Redevelopment) And City Extension (Greenfield Development) Plus A Pan-City Initiative In Which Smart Solutions Are Applied Covering Larger Parts Of The City.
- Below Are Given The Deion's Of The Three Models Of Area-Based Smart City Development:

- Retrofitting Will Introduce Planning In An Existing Built-Up Area To Achieve Smart City Objectives, Along With Other Objectives, To Make The Existing Area More Efficient And Livable.

- Redevelopment Will Effect A Replacement Of The Existing Built-Up Environment And Enable Co-Creation Of A New Layout With Enhanced Infrastructure Using Mixed Land Use And Increased Density.

- Greenfield Development Will Introduce Most Of The Smart Solutions In A Previously Vacant Area (MoreThan250Acres) Using Innovative Planning, Plan Financing And Plan Implementation Tools (E.G. Land Pooling/ Land Reconstitution) With Provision For Affordable Housing, Especially For The Poor.

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

India Is A Very Much Density Populated Country with Almost Population Of 134crore Approximately And Majority Of The Population Are Residing In Villages. Despites of Having Various Facilities for Sanitation and Water Supply, Some Parts of the Country Are Lack in Proper Supply of the Water, People Had To went To Well or Hand Pumps In Order To Get the Water to Carry out Their Various Domestic Purpose. Also Some Parts Of The Country Are Not Having Proper Drainage System, They Are Lacked Of Having Proper Sewer Line, Manhole, Various Biogas Plants, Water Treatment Plants, Maintenance Of Sewer Lines Due To Which They Have No Other Option To Carry Out They Daily Activities.

The Provision Of The Various Technologies Such As Water Treatment Plant With Technologies Like Water Filter Tanks, Aeration Tanks, Sedimentation Tank, Flocculation Tanks, Better Water Supply Pipes And Networks Increase The Quality Of The Water Supply.
Also We Have Technologies In Sanitation Department Which Includes Proper Underground Sewer Lines, Manholes, And Facilities Of Public Toilets Etc.

❖ Indigenous Water Purification Technologies:

These Technologies Can Improve The Drinking Water Quality Of Smaller Villages As Well As Larger Cities. It Uses The Pressure Driven Membrane Processes. These Are Suitable For All Capacity Units E.G. They Are Adaptable From Household Level Unit Or Community Level Unit To Large Scale Unit. Water Purification Technologies Make Use Of The Nuclear Energy And Solar Energy Also.

❖ Environment Friendly Plasma Technologies:

Solid Waste Dumping Sites Or Land fill Sites Need More Amount Of Land Which Is Not Available In Urban Areas. Incineration Of Solid Waste Pollutes The Environment If The Incinerators Are Not Designed Or Operated Properly. Thermal Plasma Technology Is Ideally Suited For Waste Treatment. By Plasma Technology Hazardous & Toxic Compounds Are Broken Down To Elemental Constituents At High Temperatures; Inorganic Materials Are Converted To Vitrified Mass; And Organic Materials Are Paralysis Or Gasified, Converted To Flue Gases (H2 & CO)& Lower Hydrocarbon Gases When Operated At Low Temperature (500 – 600OC). Disposal Of Carcass Is Also Being Thought Of Using Plasma Paralysis.

❖ Environment Friendly Plasma Technologies:

Solid Waste Dumping Sites Or Landfill Sites Need More Amount Of Land Which Is Not Available In Urban Areas. Incineration Of Solid Waste Pollutes The Environment If The Incinerators Are Not Designed Or Operated Properly. Thermal Plasma Technology Is Ideally Suited For Waste Treatment. By Plasma Technology Hazardous & Toxic Compounds Are Broken Down To Elemental Constituents At High Temperatures; Inorganic Materials Are Converted To Vitrified Mass; And Organic Materials Are Paralysis Or Gasified, Converted To Flue Gases (H2 & CO) & Lower Hydrocarbon Gases When Operated At Low Temperature (500 – 600 C). Disposal Of Carcass Is Also Being Thought Of Using Plasma Paralysis.

❖ Role of Environmental Isotope Techniques In The Water Resources Development And Management:

There Are Two Types Of Isotopes, Stable Isotopes And Radioactive Isotopes. Isotope Techniques Are Used To Find Out The Type Of Contamination In Surface Water And Ground Water, The Sources And Origin Of Contamination, Pollutant Dispersion In Surface Water Bodies, To Assess The Groundwater Salinity, To Assess The Changes Due To Long-Term Exploitation Of Groundwater, For Hydro-Chemical Investigation And To Carry Out Geochemical Evolution Of Groundwater.

❖ The BARC UF Membrane Technology for Domestic Water Purifiers:

Water Filters Manufactured By Songhua Based On Membrane Based Water Purification Technology Has Been Developed By BARC. Benefits of BARC Poly Sulfide Membrane Are High Tech 0.02micron or 20nm, Simple Form Factor, Rugged (Life Of More Than 1 Year) And Low Maintenance (About Rs. 500 Per Year). It Is Very Easy To Use And Very Low-Cost Solution For The Water Contamination.

❖ Deployment of BARC Domestic Water Purifier in Rural Area through AKRUTI Program:

Rural Human & Resource Development Facility Is Disseminating BARC Technologies, Namely Nisargruna Biogas, Soil Organic Carbon Testing Kit, Seed Bank, Domestic Water Purifier, Weather Forecasting, LLL, RIA, FSD, VTD; Under The AKRUTI(Advance Knowledge Of Rural Technology Implementation) Program. Activities Carried Out Under The AKRUTI Program Are Surveys For Safe Drinking Water, Interaction With The Villagers, Entrepreneurship Development For Domestic Water Purifier Production And Awareness Programs For Benefits Of Use Purified Water. RHRDF Has Also Launched a Scheme for Safe Drinking Water for Village under CSR

❖ Radiation Hygienization of Municipal Sewage Sludge:

The Sewage Is The Waste Water Generated From Domestic Premises And Consists Mainly Of Human Waste. It Typically Contains 99.9% Water and About 0.1% Solid. The Solid Waste In Sewage Is Typically Organic In Nature And Is Broken Down In The Sewage Treatment Plants Resulting In Sewage Sludge As A Byproduct. In Radiation Hygienization Process Dry Sludge Generated At STP'S Is Hygienized Using Radiation Technology Using Standard Gamma Facility At A Dose Of 10 Kegs'. Such Radiation Plants Are Operating In India For Sterilizing Medical Products.

3.11 Initiatives in Village Development by Local Self-Government

The Village Gram panchayat Has Taken Various Steps For The Betterment Of The Village Through Various Government Schemes And Raising The Funds From The Governments.

With The Help Of The Government The Village Had Developed Better And Sustainable Road Networks, Proper Drainage System, Proper Water Supply With RO Facilities, Sufficient Electric Supply,BetterInfrastructureFacilitiesEtc.AlsoTheyHaveProvidedBusFacilityForTheVillage Peoples To Help Them In Travelling In Between Other Villages And Also Gram panchayat Has Provided More Than 140 CCTV Camera sin Village For The Safety Purpose.

Financial Systems. Constraints On Government Budgets And The Rigidities Of The Present System Of Intergovernmental Transfers Prevent An Adequate Response Of Traditional Arrangements To The Challenge Of Urbanization. A New And More Decentralized System Of Public And Private Financial Intermediaries Will Be Required. The Establishment Of The NHB Represents An Important Step: An Apex Institution That Will Stimulate The Creation Of A Network Of Mortgage Financing. The NCU Also Calls For The Creation Of Urban

Infrastructure Development Banks To Permit Local Governments To Borrow For Infrastructure. Non Governmental Organizations. Given The Size Of The Job And The Difficulty Governmental Agencies Have In Dealing Directly In Some Aspects Of The Development Of Urban Areas (E.g., Stimulating Informal Sector Enterprise And Provision Of Shelter)There Is A Recognition Of The Need For New And Expanded Ngo's To Assist In Facilitating The Urbanization Process.

3.12 Smart Initiatives By District Municipal Corporation:

The Village Gram panchayat Has Taken Initiatives For The Betterment Of The People Like, They Had Developed The 'Reverse Osmosis Plant', Which Provide Pure And Hygienic Water Supply And Also Provide Cool Water To The Every House Of The Village.

The Village Has Also Developed Solid Waste Treatment Plant In Order To Use The Solid Waste ForVariousPurposes.TheVillageHasAlsoAdoptedTheSmarterFacilitiesLikeCCTVCameras, Speakers, and Wi-Fi Connectivity.

3.13Contributed Working by Government/ NGO / Other Digital Country Concepts:

The S.B.I. Gives A Digital Banking To The Gram Panchayat. Telecom Company Gives Internet On Reasonable Prices. Some Donor Gives Money for the Village Development.

3.14 How to Implement Other Countries Smart Village Projects in Indian Village Context:

- By Learning About Other Countries Village Situation We Can Make Some Report On It And Try To Implement That Facility In Our Indian Village.
- By Learning About Problems Of Indian Village We Can Find Solution And After That We Have To Try To Solve That Problem.
- By Improving the Construction Technologies of India.
- By Adopting the Best Ideas from the Other Countries Village. Try To Convince An Investor To Invest From Out Side Of India. By Hiring the Engineers and Staff from Foreign Countries.
- By Taking Concepts From Other Countries Village and Try To Convince The Indian Villager To Help In Development.

CHAPTER:-4 ABOUT LAPKAMN VILLAGE :

4.1 INTRODUCTION

4.1.1 INTRODUCTION ABOUT LAPKAMAN VILLAGE DETAILS:

According to census 2011 information the location code or village code of Lapkaman village is 511629.Lapkaman village is located in Daskroi Tensile of Ahmadabad district in Gujarat, India. It is situated 22km away from Ahmadabad, which is both district & sub-district headquarter of Lapkaman village. As per 2009 stats, Lapkaman village is also a gram panchayat Lapkaman village come under Ghatlodia assembly & Gandhinagar parliamentary constituency. Kalol is nearest town to Lapkaman which is approximately 15 km away. People With Various Casts Are Living Together In The Village. Some Of The People Are Migrate To The City Area For The Better Future And Education. The Population Of The Village Is Around 2194.

4.1.2Study Justification/ Need of the Study

We Are As Students Doing The Study About The Village 'Lapkaman' To Understand The Infrastructural, Agricultural And Economic Condition Of The Village. Than After To Propose Some Ideas About Improving The Facilities In This Village And To Make Those People's Lives Easier To Live In.

4.1.3Study Area (Broadly Define):

Study Area Mainly Includes the Study of the Village Lapkaman Which Is Located 15 KM towards from Kalol Head Quarters Ahmadabad .19.9 KM From State Capital Gandhinagar.

4.1.4 Objectives of the Study

Following Are The Various Objectives Of The Study:

- To Provide Basic Physical Infrastructure – Water Supply, Transport, Sewerage And Solid Waste Management Should Be The Priority Focus And Be Provided.
- To Provide Insufficient Social Infrastructure Like Health And Education Facilities And To Ensure Proper Delivery Of Facilities To Village Dwellers.
- To Promote Integrated Development Of Rural Areas With Provision Of Quality Housing, Better Connectivity, Employment Opportunities And Supporting Physical And Social Infrastructure.
- Reduce Migration From Rural To Urban Areas Due To Lack Of Basic Services And Sufficient Economic Activities In Rural Areas.
- Electricity Connection Like Street Lighting That Is Energy Efficient And Eco-Friendly.

- Identification Of Sanitation Facilities That Need Improvement.

4.1.5 Scope of the Study:

- By Studying The Present Status And Techno-Economic Survey Of 'Lapkaman' Village In Ahmedabad District Of The Gujarat State In Terms Of Basic Services, Public Amenities, Other Infrastructural Facilities For The Need Of The People And To Prepare A Report On The Expected Socio-Economic Growth Of The Area With The Consultation Of TDO, DDO And Sarpanch; Will Help Full In Providing Better Facilities And Services In Village.
- From The Gap Analysis, Development Strategies For Village Development Will Be Proposed And Planning Proposals For Physical Infrastructure, Social Infrastructure And Renewable Energy Source Will Be Suggested For The Village. The Study Will Focus On The Development Of The Village.

4.1.6 Methodology Study/ Frame Work:

- Firstly, We Studied What Are Various Objectives And The Need Of The Vishwakarma Yojana.
- Then We Completed Our Literature Review That Includes The Basic Definitions Of Rural Area, Urban Area, Urbanization, Sustainable Development Etc.
- We Also Visited An Ideal Village Named Punsari Which Is Also Located In The Taluka In Sabarkantha District. There We Understood What Kind Of Facilities Are Required In The Village And How To Implement It.
- After This We Met Our Village Sarpanch, Talati Mantra And Other Gram Panchayat Members.
- We Collected All the Required Data Related To the Various Facility and Completed Our Techno-Economic Survey and Smart Village Form.

4.1.7 Objects Related To Civil:

- To contribute to the development and maintenance of building and infrastructural facilities and systems, especially in the local and neigh boring regions.
- To making better infrastructure for the villagers.
- To improve the quality of the construction and also the development of the structure.
- To making their life smooth by making road networking and also try to connect them with the urban area.

4.2 Lapkaman village study area profile:

4.2.1 Study Area Location:

Figure.4.2.1 Study Area Location

Country	India
State	Gujarat
District	Ahmedabad
Sub-District	Daskroi
Nearest Town	Kalol 15 Km
Area	517.22 Hectares
Government	Gram Panchayat
Population	2194
Time Zone	Its (Utc+5:30)
Pin Code	380060

Table4.2.1-: Primary details of Lapkaman village

❖ **Physical & Demographical Growth:**

Particulars	Total	Male	Female
Total No. Of Houses	460	-	-
Population	2194	1138	1056
Child (0-6)	303	156	147

Schedule Caste	95	51	44
Schedule Tribe	10	6	4
Literacy	81.86%	99.22%	72.83%
Total Workers	751	652	99
Main Worker	738	-	-
Marginal Worker	13	11	2

Table4.2.2-: Physical & Demographical Growth

4.2.2 Base Location Map, Land Map, Gram Tal Map:

Fig.4.2.2 Satellite map of Lapkaman

4.2.3 Physical Growth

- Primary School
- Post Office
- Dairy
- Temple

Brief History of Village:

Lapkaman is a village positioned in Daskroi block of Ahmedabad district in Gujarat. Situated in rural region of Ahmadabad district of Gujrat,it is one among the 56 village of Daskroi block of Ahmadabad. District block of Ahmadabad district. According to the administration register, the village code of Lapkaman s 511629.The village has 460 homes. The negative portion is that illiteracy rate of Lapkaman village is 29%.Here 646 out of total 2194 individual are illiteracy. Male illiteracy rate here is 22% as 252 males out of total 1138 are uneducated. In female the illiteracy rate is 37% and 394 out of total 1056 females are illiteracy in this village.

4.2.4 Economic Profile /Banks

About The Economic Profile of This Village, Many Citizens' Work Interest Is Farming And Labor Work. The Village Doesn't Have Any Better Facilities Regarding Infrastructure But Has Good Electrification System Which Distributed 24*7 Hours For Domestic Use And 8 Hours For Agricultural Use. Village Does Not Have Good Drainage System Because There Is Open Drainage Etc. Dairy And Milk Production Is Also The Prime Source Of Income.

4.2.5 Actual Problem Faced By Villagers and Smart Solution:

PROBLEMS:

1. Transportations
2. Shortage Of Irrigation Water
3. Drainage System
4. External Road
5. Waste Collection
6. Rain Water Does Not Harvesting
7. Unemployment
8. Poor Infrastructure
9. Migration
10. Network Connectivity
11. Lack Of Awareness
12. Health Centre
13. Community Hall
14. School
15. Bus Station
16. Lack Of Awareness About Smart Technologies
17. Old Agriculture Methods
18. Bank

SOLUTION:

1. Make A Better Transportations Facilities
2. To Improve Irrigation Methods And Provide Sufficient Water
3. Make A Proper Drainage System And Storage Of The Water
4. Make A Bituminous Road For External Road, And R.C.C. Roads For Internal Roads And

Also Try Paver Blocks

5. Make A Waste Collection System In Village And Try To Use That Wastage For Producing Electricity
6. Make A Rain Water Harvesting And Try To Store Maximum Rain Water Which Is Stored Properly
7. To Make A Home Industries For Prevent The Unemployment And Also Villagers Can Earn The Money From It. So Their Economy Will Be Increase
8. Make A Good Infrastructure For The Village So Their Life Time Is Increase And Also It Will Be Long-lasting.
9. Make A Better Life Style For The Villagers To Prevent Migration.
10. Try To Make A Better Connectivity By Help Of Government Or A Telecom Company.
11. Try To Aware The Villagers By Pestering And Printed On The Walls.
12. Make A Primary Health Centre With The Sufficient Staff.
13. Make A Community Hall For Social Functions And Village Meetings
14. Make A Primary And Secondary Schools For The Children Of Villages
15. Make A Bus Station For Improving The Facility Of Transportation.
16. Aware the Villagers for the Usage of the Smart Technologies And Better Knowledge.
17. Improving Agriculture Methods And Try To Make Better And Effective Farming.
18. Make A Garmin Bank For The Villagers To Improve Their Savings And Economical Status.

4.2.6 Social Scenario:

It Was Found That All the People Of This Village Are Not Very Much Connected With Today's Technology Environment Rather Than Their Main Major Working Area. The Major Crops Produced In The Village Are Cotton, Danger, Wheat And Vegetables. The Major Population Is Get Income Through The Farming And Dairy There Are No Other Job Opportunities. The Education Is Limited To Primary School.

❖ Preservation Of Tradition, Festivals, Cuisine:

- By Promoting The Traditions Of The Village We Can Try To Make It Long-lasting.
- Make A Brief Report Or Stories On The Traditions, Festival And Cuisine.
- We Can Aware The Children And The Youth Of The Village By Telling Them About Their Traditions And Their Festivals.
- We Can Arrange The Functions And Programs On Their Traditional Festival

- We Can Also Do The Events And Competition In Their Cultural Festival
- We Have To Aware The People Which Are Living In The Urban Areas About Tradition Of The Village And Also About The Cuisine.
- We Have To Find The People Which Are Migrated From The Village And Try To Convince Them To Come And Participate In The Festivals.
- We Can Also Do A Stage Programmer In The Urban Areas To Aware And Give Them Knowledge About Tradition Of The Village.
- By Using Smart Technology We Can Make It Viral To The Different Religions And Different Countries.
- We Have To Make It Interesting To The People For Preservation Of The Tradition, Festivals And Cuisine.

4.2.7Reasons Of Migration / Trends Of Migration / Problems And Potentials Of Migrate:

- Unemployment
- Poverty
- Poor Health Status for Better Education for Better Future
- Poor Connectivity with Urban Areas Lack of Awareness
- Poor Infrastructure Atmosphere

4.3Data Collection:

4.3.1Methods for Data Collections:

There Is Not Any Specific Method about Collecting the Data for the Project but, There Are Several Methods That We Have Used For the Collection of the Data Which Includes,

- Data Collection By Visiting The Site
- By Referring Journals
- By Internet Search
- By Searching In Other Projects

4.3.2Primary Survey Details:

Lapkaman is a village positioned in Daskroi block of Ahmedabad district in Gujarat. Situated in rural region of Ahmadabad district of Gujrat,it is one among the 56 village of Daskroi block of Ahmadabad. District block of Ahmadabad district. According to the administration register, the village code of Lapkaman s 511629.The village has 460 homes. The negative portion is that

illiteracy rate of Lapkaman village is 29%.Here 646 out of total 2194 individual are illiteracy. Male illiteracy rate here is 22% as 252 males out of total 1138 are uneducated. In female the illiteracy rate is 37% and 394 out of total 1056 females are illiteracy in this village.

4.3.3Average Size of the House:

Average Size Of The House Is 400SqFt.

4.3.4No of Human Being in One House:

There Are 4-6 People in One House

4.3.5 Materials available locally in the village

The Materials Used Locally In Lapkaman Brick, Cement, Aggregate Etc. Which Are Normally Common in Urban Areas There Is Only 5 To 10 Percent of the Houses Which Are Built of Earth work

Out Sourced Material:

The Outsourced Material Should Be Used In Villages Is Like Fertilizer, Steel, Cement, Aggregate Etc.

Labor Work Doing:

Lapkaman Has 44% Population Engaged In either Main or Marginal Works. 57.34% Male And 29% Female Population Are Working Population. 75.23% Of Total Male Population Are Main (Full Time) Workers And 24% Are Marginal (Part Time) Workers. For Women 0% Of Total Female Population Are Main And 72.93% Are Marginal Workers.

Main Worker	738	-	-
Marginal Worker	13	11	2
Total Workers	751	652	99

Table 4.3.8: labor work doing

4.3.6 Geographical Details:

Village Name	Lapkaman
Taluka Name	Daskroi
District	Ahmedabad
Language	Gujarati
Area	517.22 Hectares

Table 4.3.10: Geographical Details

4.3.7 Demographical Details

Particulars	Total	Male	Female
Total No. Of Houses	460	-	-
Population	2194	1138	1056
Child (0-6)	303	156	147
Schedule Caste	95	51	44
Schedule Tribe	10	6	4
Literacy	81.86%	90.22%	72.83%

Table 4.3.11: Demographical Details

4.3.8 Occupational Details:

In This Village 65 To 70 % People Connected With Agriculture Activities it's The Village's Main Source Of Income. But Village Has The Milk Production Business So That's A Income Of Source Too There Are Approx. 20 To 29 % People Are Connected With Milk Production And Other Are Doing Labor Work For Money.

4.3.9 Agricultural Details:

In This Village There Are Some Normal Agricultural Crops Available But, There Is Not Any Organic Farming or Fish Culture Available Here

4.3.10 Physical Infrastructure Facility:

The Village Is Boon with the Following Physical Infrastructure Facilities

- Primary School
- Water Tanks
- Open Drainage
- Panchayat Building Dead Condition
- Milk Dairy

4.3.11 Tourism development available in the village for attracting the tourist

Lapkaman Village Is Not A Part Of Any Kind Of Tourism Cluster.

4.4 Infrastructure Details:

Fig.4.4.1.ghodiya ghar of Lapkaman

Fig 4.4.2 Drainage Network:

4.4.3 Transportation & Road Network:

Mainly People Use Local Transport like Auto Rickshaw, Jeep, Chhakda Etc. Approach Road of Village Is ring road. Main Road Of Village Is Bituminous. Internal Street Roads Are Not Available But Some Place Paver Blocks Are Fixed.

Rough road of Lapkaman (internal roads) **Rough road of(external roads)**

Fig-4.4.3 Road Network in Lapkaman

4.4.4 Housing Condition:

There Are 460 Households In The Village. 70% Households Are Pucca And 30% Are Kutcha. Some Of The Houses Have Number Plates On The Outside Wall.

Fig – 4.4.4 House in Lapkaman

4.4.5 Social Infrastructure Facilities:

- **Health:**

There Is No Health Centre In Village. For Minor Dieses Villagers Have To Go To The Kalol Which Is 16 Km Away From The Village And For Major Dieses They Have To Go A District Head Quarter Ahmedabad.

- **Education:**

There Is A Primary School In The Village Which Has 8th Std. But Now Days Because Of Poor Infrastructures They Are Teaching Only For 1 to 4th Std.

Fig -4.4.5 High School in Lapkaman

Community Hall:

There Is No Community Hall.

Library:

There Is No Library in Village

4.4.6 Existing condition of public buildings and maintenance of existing public Infrastructures:

1. The Village Need a Gram Panchayat Building

2. Solid Waste Management Plant Is Also Needed Because They Just Dumped The Waste On The Land And It Create Foul Environment.

3. Village Needs Better and Closed Drainage System. They Flush All The Sewage Into Water Bodies.

4. Village Need A Bio Gas Plant So That Use Of Unconventional Fuel Is Reduced.

5. Most Of the Roads is Very Damaged by Rainy Season So the Maintenance of the Road Is Required.

- **Existing Condition of Public Buildings:**

There Is One Public Building in the Village Gram Panchayat Building And It's In Dead Condition. The Drainage Is Open And It Needs To Redesign. The Roads Need Maintenance. There Is No Bus Stand.

- **Maintenance of existing Public Infrastructures**

In The Lapkaman Village There Are Few Structures Which Require Maintenance.

- School Building Flooring
- Gram Panchayat Building
- Temple
- Post Office

4.4.7 Technology Mobile/ WI-FI / Internet Usage Details. In%:

Very Few Peoples Of Lapkaman Is Aware Of Any Kind Of Mobile Technology And Internet Which Mostly Includes Youngsters.

4.4.8 Sports Activity as Gram Panchayat

There Is No Sports Activities Conducted Through Gram Panchayat.

4.4.9 Socio-Cultural Facilities

There Is No Social Cultural Facilities.

- **Public Garden/Park/Playground**

Not Available

- **Other Recreation Facilities**

Not Available

4.4.10 Other Facilities

Post Office, Shops, Panchayat Building, Agriculture and Milk Co-Operative Facilities, animal hospital Are Available.

4.4.11 Any Other Details

Post office Are Available and One Milk Dairy Is Available.

❖ Renewable Energy Source Planning Particularly For Villages

Renewable Energy Plays An Important Role In Reducing Greenhouse Gas Emissions. When Renewable Energy Sources Are Used, The Demand For Fossil Fuels Is Reduced. Unlike Fossil Fuels, Non- Biomass Renewable Sources of Energy (Hydropower, Geothermal, Wind, And Solar) Do Not Directly Emit Greenhouse Gases Solar Energy Is Commonly Used On Public Parking Meters, Street Lights And The Roof Of Buildings. Wind Power Has Expanded Quickly; Its Share Of Worldwide Electricity Usage At The End Of 2014 Was 3.1%. Most Of California's Fossil Fuel Infrastructures Are Sited In Or Near Low-Income Communities, And Have Traditionally Suffered The Most From California's Fossil Fuel Energy System. These Communities Are Historically Left Out During The Decision-Making Process, And Often End Up With Dirty Power Plants And Other Dirty Energy Projects That Poison The Air And Harm The Area. These Toxicants Are Major Contributors To Health Problems In The Communities.

4.5 Existing Institution like - Village Administration – Detail Profile:

4.5.1 Bachat Mandali:

The Sahkari andali existing In the Village.

In That post office they can save The Money in Their Account.

Post office

Fig. – 4.4.6 Post office

4.5.3 Mahila Forum:

There Is No Any Mahila Forum In The Village.

4.5.4 Plantation for the Air Pollution:

In Lapkaman Village the Plantation are not Done by Some Farmers for the Agricultural Purposes.

4.5.5 Rain Water Harvesting:

There Is Only Open Drain Channel So The Rain Water Is Not Harvesting Properly.

4.5.6 Agricultural Development:

There Is No Agricultural Development.

4.5.7 Any Other:

Infrastructure Are Very Poor. Basic Facilities Are Not Available.

Transportations Are Not Available Easily. Network Connectivity Is Very Poor.

CHAPTER 5 Sustainable Technical Options with Case Studies of the Existing Village:

5.1Concept:

5.1.1 Advance Construction Techniques:

- Precast Flat Panel System
- 3D Volumetric Modules
- Flat Slab Construction
- Precast Cladding Panels
- Concrete Wall And Floors
- Twin Hall Technology
- Precast Concrete Foundation
- Concrete Formwork Insulation
- R.M.C.Plant

• Causes Prevention and Repair of Cracks in Building /Rehabilitation Techniques:

Causes of cracks:

Causes Of Cracks The Common Causes Of Cracks In Building Are Permeability Of Concrete, Thermal Movement, Corrosion Of Reinforcement, Chemical Reaction, Moisture Changes, Creep, Foundation Movement, Soil Settlement, Shrinkage, Elastic Deformation, Overloading, Environmental Stresses Like Nearby Trains, Earthquakes, Faulty Design, Bad Quality Materials, Poor Construction Practices, Weather Effects, Lots Of Wear And Tear, Poor Structural Design, Poor Specification, Poor Maintenance, Poor Workmanship, Etc.

Prevention of the cracks:

1) By Creating Slip Joints Under The Support Of RCC Slab On Walls, Cracks By Elastic Deformation Can Be Prevented.

2) Construct Various Joints Such As Expansion Joints, Construction Joints, Slip Joints And Control Joints To Prevent Cracks From Thermal Movement.

3) Slab Should Be Provided With Thermal Insulation.

4) Concrete Should Be Of Good Quality. Use Richer Mix Of Cement Concrete 1:1.5:3 To Prevent Cracks.

5) In Mixing Of Cement Concrete or Cement Mortar, Use Minimum Quantity of Water, As Per Water Cement Ratio.

6) Do Not Use Excessive Cement In The Mortar Mix. Because As A General Rule, The Richer The Mix Is, The Greater The Shrinkage Will Be. And Shrinkage Is One Of The Major Causes Of Occurrence Of Cracks.

7) Use Largest Possible Aggregate And The Materials Should Be Of Good Grading And Quality.

8) As Soon As Initial Setting Has Taken Place, The Curing Should Be Started And Be Continued For At Least Seven To Ten Days.

9) Fine Materials Which Contain Silt, Clay And Dust Should Not Be Used. The Coarse Sand/Fine Aggregate Used In Cement Concrete And Cement Mortar Mix Should Have Silt And Clay Less Than4%.

10) Use Course And Fine Aggregates After Washing To Reduce Silt Contents.

11) StrongBondBetweenConcreteAndPlasterPreventsShrinkageCracks,IfRenderingIsDone As Early As Possible After Removal of Shuttering.

12) Due To Growth Of Roots Under Foundation, Cracks Can Occur In The Vicinity Of A Wall. To Prevent Such Cracks, Do Not Let Trees Grow Too Close To The Buildings, Compound Walls Etc.

Remove Any Saplings Of Trees As Soon As Possible If They Start Growing In Or Near Of Walls Etc.

13) TheBestControlMeasureAgainstCorrosionIsTheUseOfConcreteWithLowPermeability.

14) The Structural Design Of The Foundation Should Be Carried Out In Such A Manner As To Achieve Uniform Distribution Of Pressure On The Ground To Avoid Differential Settlement.

15) Use Good Quality Of Building Materials According To The Specification.

16) TheWorkmanshipShouldBeAccordingToThePrescribedNormsAndBestPracticeInThe Building Construction.

17) Proper Monitoring Is Required At The Time Of Construction. Above Points Should Be Kept In Mind While Constructing Buildings So That The Hazard Of Cracks Can Be Prevented.

❖ Repair of cracks:

Repair Of Cracks The Repair Of Cracks Can Be Achieved With The Following Techniques:

1) By Epoxy-Injection Grouting

2) By Routing And Sealing
3) By Flexible Sealing
4) By Stitching
5) By Providing Additional Reinforcement
6) By Drilling And Plugging
7) By Prestressing Steel
8) By Grouting
9) Dry Packing
10) Overlays
11) Autogenously Healing
12) Surface Coatings

Here We Will Discuss About Most Popular Repair Technique Of Cracks Such As Epoxy-Injection Method And Grouting.

Rectification of building Tilt:

There Are Number Of Factors That Cause The Structure To Excessively Lean Or Settle. For Example, Liquefaction of Soil beneath the Foundation After Earthquake Occurrence, Excavation, Groundwater Condition Variation, Poor Soil Bearing Capacity, Inappropriate Foundation And Construction Defects.

When A Building Over Leaned Or Settled, Then It Is Necessary To Uplift It Properly To Regain Required Safety And Prevent Undesired Consequences. Building Rectification Techniques Are Used To Uplift Such Structures. These Methods Will Be Discussed In The Following Sections.

❖ Rectification methods used to uplift over tilted buildings include:

1. Compaction Grouting Method
2. Chemical Grouting Method
3. Underpinning Method
4. Micro-Tunneling Method

1. Compaction Grouting Method:

It Is One Of The Methods Used To Rectify Buildings That Tilted Or Settled Excessively.

Compaction Grouting Technique Needs Detailed Preparation And Plan Prior To The Beginning Of The Work.

For Example, It Is Required To Determine Grouting Pressure, Grouting Depth, Grouting Rate,

Configurations Of Grouting Stations, And The Method Used To Execute The Task.

It Is Necessary To Equip The Structure With Adequate Number Of Monitoring Devices. This Is To Observe The Process And Makes Suitable Changes During Lifting Operation If It Is Needed.

There Are Two Methods Used For Compaction Grouting Including Drilling Holes Through Floor Slab Of The Building Vertically And Perform The Work Or Dug Holes At A Specified Degree From The Side Of The Structure. It Should Be Known That The Function Of The Structure May Be Disrupted Or Stopped When Compaction Grouting Is Conducted Through Holes Dug Through The Floor, But Its Effect Is Great. However, The Latter Technique Will Not Influence Building Functionality, But It Is Less Effective Compared With Former Technique. It Is Recommended To Concentrate Grouting Stations On The Largest Settled Locations And Major Grouting Points Should Be Arranged At The Greatest Depth. Regarding Minor Grouting Points, They Are Aimed At Smaller Settled Locations And Their Depth Is Smaller.

Finally, The Process Of Grouting Is Begun From The Major Points Configured At Largest Settled Area And Then Minor Points Close To The Major Stations. If The Settlement Is Large, Then The Process May Be Conducted In More Than One Stage.

2. Chemical Grouting Method:

Chemical Grouting Is Another Technique Used To Restore Tilted Building To Its Original Position. This Method Is Economical But Grouting Process Requires Substantial Care To Achieve The Desired Outcome.

If Chemical Grouting Is Not Carried Out Properly, Unanticipated Grout Flow May Occur And May Lead To Pipe And Structural Damages And Decline Grouting Affect.

Fig.5.5.1. – chemical grouting

Similar To Compaction Grouting, It Is Necessary To Establish Detailed Plan Grouting Pressure, Injection Point Configuration, Techniques To Prevent The Disappearance Of Grouting Flow

Before The Grouting Process Is Started. The Determination Of Injection Point Arrangement, Amount Of Injected Grouting, And Grouting Pressure Is Based On The Experience And Observation Obtained From Devices Placed On The Structure. Regarding Methods Used For Prevention Of Grout Fugacious Flowing, Either Sheet Piles Placed Within Grouting Range Or Grouting Setting Time Reduction Is Employed.

3. Underpinning Method

Underpinning Technique Used To Restore Verticality Of Tilted Structures. It Is More Expensive Compare With Other Aforementioned Methods. Moreover, This Technique Can Be Used To Rectify Structures That Constructed On Individual Footing And Mat Foundation.

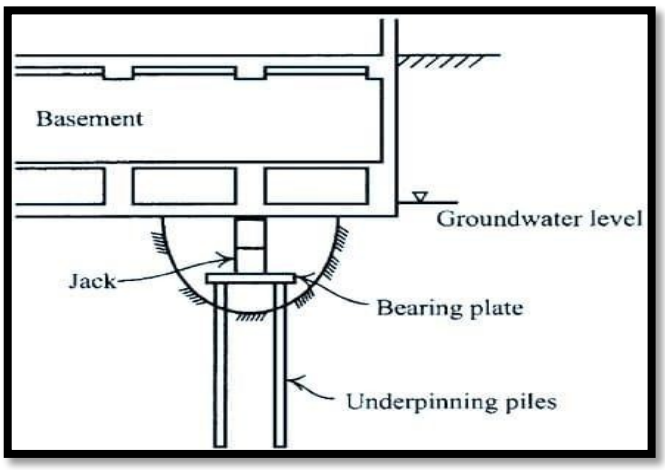


Figure 5.1.2 Underpinning Method

Furthermore, Underpinning Method Lacks Those Disadvantages That Encountered When Compaction Grouting Or Chemical Grouting Is Employed. For Example, Grout Flowing To Location Which Is Not Planned And Predicted, And Improper Uplifting Or Columns Which Is Possible In The Case Of Chemical And Compaction Grouting.

Underpinning Method Procedure Involves Excavate Working Place, For Underpinning Pile Construction, Around The Foundation And Then Set Jacks Between The Foundation And Pile Cap To Uplift The Structure, And Lastly Carry Out Load Transfer Operation.

As Far As Disadvantages Of Underpinning Are Concerned, Poor Design Of Underpinning May Lead To Increase The Settlement Of The Structure.

4. Micro-Tunneling Method:

This Method Is Used For Structures Which Is Built On Cohesive Soil And Suffered From Limited Leaning. In This Case, It Might Be More Feasible To Create Deformations Under Less Settled Side Of The Structure Using Micro Tunnels. The Procedure Includes Application Of

Micro Tunneling For Drilling Unsupported Small Holes Under Less Settled Side Of The Structure, Then These Holes Would Be Deformed Due To Load Of The Structure And Additional Loads Imposed To Deform Small Holes.

When These Holes Are Collapsed Under Structural Load And Additional Load, A Sliding Surface Would Be Produced, And The Foundation Would Rotate Opposite The Direction Of Inclination.

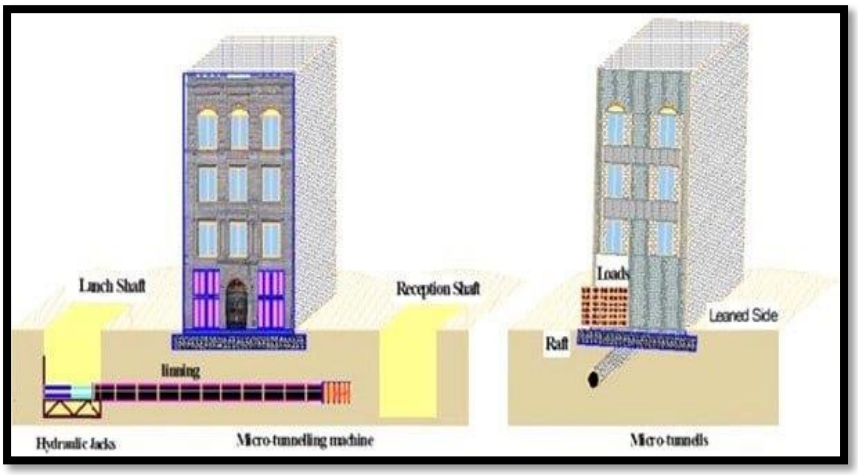


Fig5.1.3: Micro-Tunneling Method

❖ Rehabilitation Techniques:

The Success Of Repair Activity Depends On The Identification Of The Root Cause Of The Deterioration Of The Concrete Structures. If This Cause Is Properly Identified, Satisfactory Repairs Can Be Done For The Improvement Of Strength And Durability, Thus Extending The Life Of The Structure, Is Not Difficult To Achieve. General Procedure in The Repair Of Distressed Concrete Structure

- Support The Structural Members Properly As Required.
- Remove All Cracked, Palled And Loose Concrete.
- Clean The Exposed Concrete Surfaces And Steel Reinforcement.
- Provide Additional Reinforcing Bars, If The Loss In Reinforcement Is More Than10%
- Apply Short Creating /Polymer Concrete For Patch Repair Work And Grouting For Porous/Honeycombed Concrete.
- Apply Protective Coatings Over The Exposed/Repaired Surface.

Disaster management in natural calamities:

Disaster Management In India Refers To Conservation Of Lives And Property During A Natural And Man-Made Disaster. Disaster Management Plans Are Multi-Layered And Are Planned To Address Issues Such As Floods, Hurricanes, Fires, Mass Failure Of Utilities And The Rapid Spread Of Disease. India Is Especially Vulnerable To Natural Disasters Because Of Its Unique Geo-Climatic Conditions, Having Recurrent Floods, Droughts, Cyclones, Earthquakes, And Landslides. As India Is A Very Large Country, Different Regions Are Vulnerable To Different Natural Disasters. For Example, During Rainy Season The Peninsular Regions Of South India Is Mostly Affected By Cyclones And States Of West India Experience Severe Drought During Summer.

Natural Calamities: Floods

Hurricane Fires Droughts Earthquakes Landslides

The Disaster Management Act, 2005:

Main article: Disaster Management Act, 2005

The Disaster Management Act Was Passed By The Look Sabha On 28 November 2005, And By The Rajah Sabha On 12 December 2005. It Received The Assent Of The President Of India On 9 January 2006. The Act Calls For The Establishment Of A National Disaster Management Authority (NDMA), With The Prime Minister Of India As Chairperson. The NDMA Has No More Than Nine Members At A Time, Including A Vice-Chairperson. The Tenure Of The Members Of The NDMA Is 5 Years. The NDMA Which Was Initially Established On 30 May 2005 By An Executive Order Was Constituted Under Section-3(1) Of The Disaster Management Act, On 27 September 2005. The NDMA Is Responsible For "Laying Down the Policies, Plans And Guidelines For Disaster Management" And To Ensure Very Timely And Effective Response To Disaster". Under Section 6 Of The Act It Is Responsible For Laying "Down Guidelines To Be Followed By The State Authorities In Drawing Up The Country Plans".

Disaster Management plan:

Objectives:

1. Improve The Understanding Of Disaster Risk, Hazards, And Vulnerabilities
2. Strengthen Disaster Risk Governance At All Levels From Local To Centre
3. Invest In Disaster Risk Reduction For Resilience Through Structural, Non-Structural And

Financial Measures, As Well As Comprehensive Capacity Development

4. Enhance Disaster Preparedness For Effective Response

5. Promote "Build Back Better" In Recovery, Rehabilitation And Reconstruction

6. Prevent Disasters And Achieve Substantial Reduction Of Disaster Risk And Losses In Lives, Livelihoods, Health, And Assets (Economic, Physical, Social, Cultural And Environmental)

7. Increase Resilience And Prevent The Emergence Of New Disaster Risks And Reduce The Existing Risks

8. Promote The Implementation Of Integrated And Inclusive Economic, Structural, Legal, Social, Health, Cultural, Educational, Environmental, Technological, Political And Institutional Measures To Prevent And Reduce Hazard Exposure And Vulnerabilities To Disaster

9. Empower Both Local Authorities And Communities As Partners To Reduce And Manage Disaster Risks

10. Strengthen Scientific And Technical Capabilities In All Aspects Of Disaster Management

11. Capacity Development At All Levels To Effectively Respond To Multiple Hazards And For Community-Based Disaster Management

12. Provide Clarity On Roles And Responsibilities Of Various Ministries And Departments Involved In Different Aspects Of Disaster Management

13. Promote The Culture Of Disaster Risk Prevention And Mitigation At All Levels

14. Facilitate The Mainstreaming Of Disaster Management Concerns Into The Developmental Planning And Processes

❖ Salient Features of the Plan

- The Plan Covers All Phases Of Disaster Management: Prevention, Mitigation, Response And Recovery.
- For Each Hazard, The Approach Used In This National Plan Incorporates The Four Priorities Enunciated In The Sendai Framework Into The Planning Framework For Disaster Risk Reduction Under The Five Thematic Areas For Actions:
- Understanding Risk
- Inter-Agency Coordination
- Investing In DRR – Structural Measures
- Investing In DRR – Non-Structural Measures

- Capacity Development
- The Response Part Of The Plan Has Identified Eighteen Broad Activities Which Have Been Arranged Into A Matrix To Be Served As A Ready Reckoned:
- Early Warning, Maps, Satellite Inputs, Information Dissemination
- Evacuation Of People And Animals
- Search And Rescue Of People And Animals
- Medical Care
- Drinking Water/ Dewatering Pumps/ Sanitation Facilities/ Public Health
- Food & Essential Supplies
- Communication
- Housing And Temporary Shelters
- Power
- Fuel
- Transportation
- Relief Logistics And Supply Chain Management
- Disposal Of Animal Carcasses
- Fodder For Livestock In Scarcity-Hit Areas
- Rehabilitation And Ensuring Safety Of Livestock And Other Animals, Veterinary Care
- Data Collection And Management
- Relief Employment
- Media Relations
- The Plan Has Also Incorporated A Chapter On Strengthening Disaster Risk Governance. The Generalized Responsibility Matrix Given In This Section Summarizes The Themes For Strengthening Disaster Risk Governance And Specifies Agencies At The Centre And State With Their Respective Roles. The Matrix Has Six Thematic Areas In Which Central And State Governments Have To Take Actions To Strengthen Disaster Risk Governance:
- Mainstream And Integrate DRR And Institutional Strengthening
- Capacity Development
- Promote Participatory Approaches

- Work With Elected Representatives
- Grievance Redress Mechanism
- Promote Quality Standards, Certifications, And Awards For Disaster Risk Management
- It Provides For Horizontal and Vertical Integration among All the Agencies And Departments Of The Government. The Plan Also Spells Out The Roles And Responsibilities Of All Levels Of Government Right Up To Panchayat And Urban Local Body Level In A Matrix Format. The Plan Has A Regional Approach, Which Will Be Beneficial Not Only For Disaster Management But Also For Development Planning.
- It Is Designed In Such A Way That It Can Be Implemented In A Scalable Manner In All Phases Of Disaster Management. It Also Identifies Major Activities Such As Early Warning, Information Dissemination, Medical Care, Fuel, Transportation, Search And Rescue, Evacuation, Etc. To Serve As A Checklist For Agencies Responding To A Disaster. It Also Provides A Generalized Framework For Recovery And Offers Flexibility To Assess A Situation And Build Back Better.
- To Prepare Communities To Cope With Disasters, It Emphasizes On A Greater Need For Information, Education And Communication Activities.

5.1.2 Soil liquefaction

- Soil liquefaction occurs when a saturated or partially saturated soil substantially loses strength and stiffness in response to an applied stress such as shaking during an earthquake or other sudden change in stress condition, in which material that is ordinarily a solid behaves like a liquid.
- In soil mechanics, the term "liquefied" was first used by Allen Hazen in reference to the 1918 failure of the Calaveras Dam in California. He described the mechanism of flow liquefaction ofthe embankment dam as: If the pressure of the water in the pores is great enough to carry all the load, it will have the effect of holding the particles apart and of producing a condition that is practically equivalent to that of quicksand… the initial movement of some part of the material might result in accumulating pressure, first on one point, and then on another, successively, as the early points of concentration were liquefied.

5.1.3 Sustainable sanitation

This guide provides an approach to local sanitation based on the whole chain, from beginning to end, to ensure that equal consideration is given to the collection of wastewater and excreta, its evacuation and its treatment. Indeed, addressing only one particular segment just transfers the

problem elsewhere. For example, households equipped with toilets in an area where there are no pit emptying or treatment services are likely to empty their full pits into the street: thereby transferring the problem from the private home into the public domain

5.1.4 Various types of Roads / Intelligent transport system:

A Road Is Thoroughfare Route, or Way on Land between Two Places That Has Been Surfaced Or Otherwise Improved To Allow Travel By Foot Or Some Form

Of Conveyance, Including A Motor Vehicle, Cart, Bicycle, Or Horse. Roads Have Been Adapted To a Large Range Of Structures and Types In Order To Achieve a Common Goal

Of Transportation Under A Large And Wide Range Of Conditions. The Specific Purpose, Mode Of Transport, And Location Of A Road Determine The Characteristics It Must Have In Order To Maximize Its Usefulness. Following Is One Classification Scheme.

Types of Roads:

1. **Internal Roads(R.C.C.)**
2. **External Roads(Bituminous)**
3. **Highway (Approach The Village) Intelligent transport system:**

An Intelligent Transportation System (ITS) Is an Advanced Application Which Aims To Provide Innovative Services Relating To Different Modes

Of Transport And Traffic Management And Enable Users To Be Better Informed And Make Safer, More Coordinated, And 'Smarter' Use Of Transport Networks.

Intelligent transport technologies:

Intelligent Transport Systems Vary In Technologies Applied, From Basic Management Systems Such As Car Navigation; Traffic Signal Control Systems; Container Management Systems; Variable Message Signs; Automatic Number Plate Recognition Or Speed Cameras To Monitor Applications, Such As Security CCTV Systems; And To More Advanced Applications That Integrate Live Data And Feedback From A Number Of Other Sources, Such As Parking Guidance Systems; Weather Information; Bridge De-Icing (US Deicing) Systems; And The Like. Additionally, Predictive Techniques Are Being Developed To Allow Advanced Modeling And Comparison With Historical Baseline Data. Some Of These Technologies Are Described In The Following Sections.

- ❖ **Various types of Environmental Factors:**
- ❖ **Environment factors**

- Exposure to Hazardous Substances In The Air, Water, Soil, And Food.
- Natural and Technological Disasters.
- Climate Change.
- Occupational Hazards.
- The Built Environment.
- **Major issues:**
- Population Growth and Environmental Quality.
- Water Pollution.
- Air Pollution.
- Solid Waste Pollution.
- Noise Pollution.
- Land or Soil Pollution.
- Greenhouse Gas Emissions.

• E – Waste disposal / Any West disposal:

Waste Management (Or Waste Disposal) Are The Activities And Actions Required Managing Waste From Its Inception To Its Final Disposal.[1] This Includes the Collection, Transport, Treatment and Disposal of Waste, Together With Monitoring And Regulation Of The Waste Management Process.

Waste Can Be Solid, Liquid, Or Gas And Each Type Has Different Methods Of Disposal And Management. Waste Management Deals With All Types Of Waste, Including Industrial, Biological And Household. In Some Cases, Waste Can Pose A Threat To Human Health. Waste Is Produced By Human Activity, For Example, The Extraction And Processing Of Raw Materials. Waste Management Is Intended To Reduce Adverse Effects Of Waste On Human Health, The Environment Or Aesthetics. Waste Can Be Solid, Liquid, Or Gas And Each Type Has Different Methods Of Disposal And Management. Waste Management Deals With All Types Of Waste, Including Industrial, Biological And Household. In Some Cases, Waste Can Pose A Threat To Human Health.

Figure 5.1.4: Waste disposal

5.1.5 Vertical farming

Vertical farming often falls in line with 'indoor farming', 'urban agriculture' and 'controlled-environment agriculture' (which also encompasses greenhouse cultivation), but the concept remains unique. With vertical farming, the growing takes place where factors such as temperature, nutrients, lighting, irrigation, and air circulation are constantly monitored and adjusted. Here's a peak at the inside of a vertical farm in the Netherlands:

Vertical farming's reduced use of water and land, and decreased waste and CO2 emissions could already be helpful in mitigating climate change were it to become more widely explored. The controlled and contained nature of the technology could reduce agricultural runoff as well, which in traditional farming, is any water that is carrying away by-products from a farm and may contain fertilizers and other contaminants

5.1.6 Corrosion Mechanism, Prevention &Repair Measures of RCC Structure:

Corrosion Is A Natural Way Of Deterioration Of Material. In The Presence Of Moisture, An Oxidation Reaction Takes Place On The Energized Area Of The Metal Surface To Elute Metal As An Ion (Anode). A Reduction Takes Place On Low Energy Area (Cathode). Normally, Corrosion Of Metal Occurs On Anode.

Figure 5.1.7: CORROISIONIN R.C.C.

Deterioration of RCC Structures:

Unexpected Cracking Of Concrete Is A Frequent Cause Of Complaints. Cracking Can Be The Result Of One Or A Combination Of Factors, Such As Drying Shrinkage, Thermal Contraction, Restraint (External Or Internal) To Shortening, Sub grade Settlement, And Applied Loads.

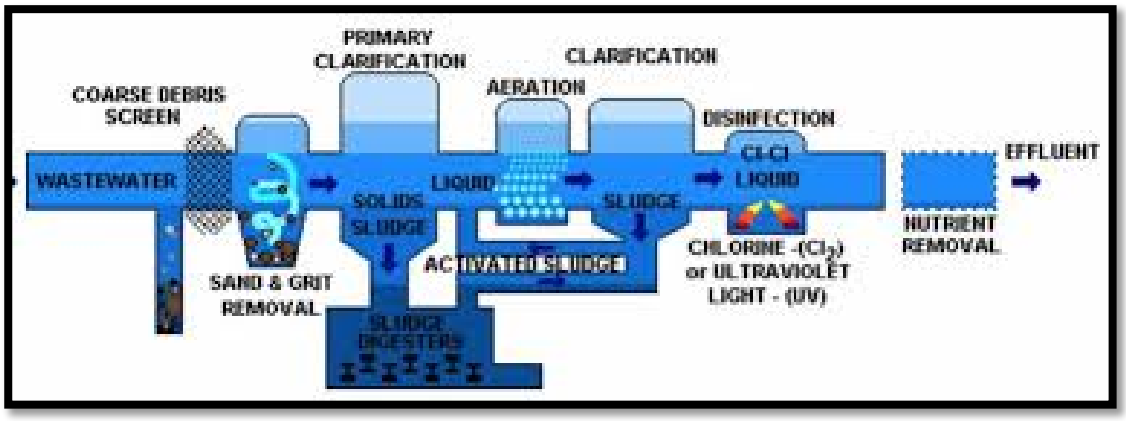
Cracking Can Be Significantly Reduced When The Causes Are Taken Into Account And Preventive Steps Are Utilized. Deterioration Of Concrete Occurs Due To One Or More Of The Following Mechanisms.

5.1.7 Sewage treatment plant

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

Sewage treatment may also be referred to as wastewater treatment. However, the latter is a broader term that can also refer to industrial wastewater. For most cities, the sewer system will also carry a proportion of industrial effluent to the sewage treatment plant that has usually received pre-treatment at the factories to reduce the pollutant load. If the sewer system is a combined sewer, then it will also carry urban runoff (storm water) to the sewage treatment plant. Sewage water can travel towards treatment plants via piping and in a flow aided

by gravity and pumps. The first part of the filtration of sewage typically includes a bar screen to filter solids and large objects that are then collected in dumpsters and disposed of in landfills. Fat and grease are also removed before the primary treatment of sewage.



Sewage treatment plant

5.1.8 Technical case study on "India gate (Delhi)"

- **HISTORY**

This stupendous structure was constructed by the Imperial War Graves Commission aka IWCG, which was established in 1917 to build war memorials and graves for soldiers who lose their lives in the First World War. The memorial was designed by a famous English architect by the name Sir Edwin Lutyens and its foundation was laid by the Duke of Connaught, third son of Queen Victoria, on 10 February 1921. After 10 long years, on February 12, 1931, Viceroy Lord Irwin inaugurated and dedicated this structure to the nation and its future generations. The names of over 13,000 soldiers who lost their lives during the war are also inscribed on the memorial. In the honor of soldiers who sacrificed their lives in the Indo-Pakistan War of 1971, a new structure was added to the India Gate in 1972. Known as Amar Jawan Jyoti (which means the Flame of the Immortal Soldier), this was inaugurated by Indira Gandhi, who was the then PM of India.

- **DESIGN**

Sir Edwin Lutyens, who designed the India Gate, was a leading war memorial architect and was also a member of IWGC. He built it as a secular memorial free of any religious association or cultural ornamentation. Also, Lutyens wanted the monument to be a classical one, so refused to incorporate any Asian motifs such as pointed arches. The

architectural style of India Gate is that of a triumphal arch and is often compared with the Arc de Triumphal in Paris, the Gateway of India in Mumbai, and the Arch of Constantine.

Situated in the middle of a hexagonal complex, the structure is 42 meters tall and 9.1 meters wide. The whole structure is made using yellow and red sandstone which was brought in directly from Bharatpur.

About 150 meters towards the east of the India Gate, there is a canopy that was built in 1936 as a tribute to former Emperor of India, King George V. There used to be a marble statue of George V, but it was removed due to opposition from some political parties after India's independence. Currently the statue is located in Delhi's Coronation Park.

India Gate also houses a small structure called Amar Jawan Jyoti, which consists of a marble pedestal with a cenotaph on its top. The cenotaph has the words 'Amar Jawan' written on all four sides in golden letters and also has a reversed rifle, capped by a soldier helmet, installed on it. The structure is surrounded by permanently burning flames fueled by CNG on all the four sides

- **INFORMATION**

Location	Rajpath, New Delhi
Type	Memorial
Also Known as	All India War Memorial
Timings	Morning till evening; every day
Entry Fee	Free
Still and Video Cameras	Free
Architect	Edwin Lutyens
Architectural Style	Triumphal Arch

Period of Construction	1921 to 1931
Commissioned by	Imperial War Graves Commission
Dimensions	42 meters (height) x 9.1 meters (width)
Area	306,000 square meters
Material Used	Yellow and red sandstone and granite
Nearest Metro Station	Central Secretariat

- ## Cost of India gate

The India Gate is located at the heart of India's capital city, New Delhi. About 2.3 km from the Rashtrapati Bhavan, it is located on the eastern extremity of the ceremonial boulevard, Rajpath. India Gate is a war memorial dedicated to honor the soldiers of the Undivided Indian Army who died during World War I between 1914 and 1921. War memorials are buildings, installations, statues or other edifices dedicated either to celebrate victory in war, or to pay tribute to those who died or were injured in war. Delhiites and tourists alike throng the India Gate Lawns surrounding the monument for a leisurely evening, enjoying the light show at the fountains along with snacking on street food. A National War Memorial to honor all armed forces members killed after 1947 is under construction at the 'C' Hexagon of India Gate.

Type: War Memorial

Construction Started: 10 February, 1921

Construction Completed: February 12, 1931

Where is it Located: New Delhi, India

Why was it Built: Memorial to Undivided Indian Army soldiers who died during World War I

Dimensions: 42 m in height; 9.1m in width; the complex is 625m in diameters and 306,000 m² in area

Materials Used: Yellow and red sandstone and granite

Architectural Style: Triumphal Arch

Designer: Sir Edwin Lutyens

Visit Timing: 24 hours a day, all days of the week

- **FEATURES**

India Gate, an important monument of the city, is a memorial built in commemoration of more than 80,000 **Indian** soldiers who were killed during World War I. The monument is an imposing 42 meters high arch and was designed by the famous architect Edwin Lutyens. **India gate** was earlier named All **India** War Memorial.

BEST INFRASTURECTURE

- **LOCATION**

India Gate, which is located at the eastern end of the **Rajpath** (formerly called **the Kingsway**),

is about 138 feet (42 meters) in height. **All India War Memorial** arch (1931; commonly called India Gate), **New Delhi**, India

- **RECENT NEWS ON INDIA GATE**

The sandstone arch has often been compared to Paris' Arc de Triumph. Standing forty-two meters high, Memorial Arch was built to honor the brave men who died in WWI and the Third Anglo-Afghan War. The monument bears the name of over 13,516 soldiers among the 80,000 who died in those wars.

CHAPTER 6 Swatchh Bharat Abhiyan (Clean India):

6.1 Introduction

Swachh Bharat Abhiyan Is A Campaign That Was Launched On 2 October 2014 And Aims To Eradicate Open Defecation By 2019.[6] The National Campaign Spans 4,041 Statutory Cities And Towns.[7][8] It Is The Current Of A Few Prior Campaigns, Including Nirmal Bharat Abhiyan And The Total Sanitation Campaign, Which Had Similar Goals.

Figure: 7.0.0. : Sawachh bharat Abhiyan

Swachh Bharat Abhiyan (SBA) (Or Swachh Bharat Mission (SBM) Or Clean India Mission In English) Is A Campaign In India That Aims To Clean Up The Streets, Roads And Infrastructure Of India's Cities, Smaller Towns, And Rural Areas. The Objectives Of Swachh Bharat Include Eliminating Open Defecation Through The Construction Of Household-Owned And Community-Owned Toilets And Establishing An Accountable Mechanism Of Monitoring Toilet Use. Run By the Government Of India, The Mission Aims To Achieve An Open-Defecation Free (ODF) India By 2 October 2019, The 150th Anniversary Of The Birth Of Mahatma Gandhi, By Constructing 12 Million Toilets In Rural India At A Projected Cost Of ₹1.96 Lakh Corer (US$30 Billion).The Campaign Was Officially Launched On 2 October 2014 At Right, New Delhi By Prime Minister Narendra Modi. It Is India's Largest Cleanliness Drive To Date With 3 Million Government Employees, School Students, And College Students From All Parts Of India Participating In 4,041 Statutory Cities, Towns And Associated Rural Areas.The Mission Contains Two Sub-Missions: Swachh Bharat Abhiyan ("Gram in" Or Rural), Which Operates Under The Ministry Of Drinking Water And Sanitation; And Swachh Bharat Abhiyan (Urban), Which Operates Under The Ministry Of Housing And Urban Affairs The Mission Includes Ambassadors And Activities Such As National Real-Time Monitoring And Updates From Non-Governmental Organizations (Ngos) That Are Working Towards Its Ideas Of Swachh Bharat.

6.2 Objectives of Swachh Bharat Mission

Swachh Bharat Abhiyan Set A Lot Of Objectives To Achieve So That India Could Become Cleaner And Better. In Addition, It Not Only Appealed The Sweepers And Workers But All The Citizens Of The Country. This Helped In Making The Message Reach Wider. It Aims To Build Sanitary Facilities For All Households. One Of The Most Common Problems In Rural Areas Is That Of Open Defecation. Swachh Bharat Abhiyan Aims To Eliminate That.

Moreover, The Indian Government Intends To Offer All The Citizens With Hand Pumps, Proper Drainage System, Bathing Facility And More. This Will Promote Cleanliness Amongst Citizens.

Similarly, They Also Wanted To Make People Aware Of Health And Education Through Awareness Programs. After That, A Major Objective Was To Teach Citizens To Dispose Of Waste Mindfully.

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

Figure 7.1.1: Need Swatchhta in village

- Need Swatchhta :
- Sanitation Plan for Health in the Village.
- Waste Collection System.
- Drainage System.
- Waste Disposal System.
- Public Toilet.
- Increase in Health Status of Public.

Guidelines for the Process of the implementation in your village with photograph:

First of all we have to give some information about Swatchhta Abhiyan and also the benefits of the Swatchhta. We also aware them about the illness because of the dirty roads and village.

In our allocated village we were arranged a presentation on Swachh bharat Abhiyan for the student and also try to convince them for the stop throwing garbage on the roads and in the village. We also do a activity with the help of student for the Swatchhta in village and also try to encourage the villagers to take part in this Abhiyan

6.3Actual Activity done by student for making village clean with photographs

Figure 7.2.1: Student activity and presentation on Swatchhta

CHAPTER 7: VILLAGE CONDITION DUE TO COVID -19

In a covid Government of India in close collaboration with State Governments has taken various initiatives. Close consultation and guidance of the State as well as District authorities is being maintained to ensure that lock down conditions are not violated and norms of social distancing are scrupulously followed to contain the spread of the disease. India has overtaken Brazil and become the second-worst affected country in the world by thecorona virus pandemic, with more than 4 million cases. COVID-19 had mostly remained in India's cities, but the disease is now spreading to rural India – an area with over 850 million people and far worse healthcare. The reason for this shift appears to be migrant workers who have been returning to their villages since lockdown was eased at the end of June. The medical response to stop the spread and treat those infected has been inadequate, according to media reports. With one trained doctor for every 1,497 people, against the World Health Organization recommended one per 1,000, and public health expenditure for 2018 at just 1.3% of GDP, India faces an uphill struggle in dealing with the pandemic. While two-thirds of India's population lives in rural areas, there are almost four times as many health workers per person in cities. Most rural communities rely on untrained health workers. Over two-thirds of these rural health providers have no formal medical training, but remain the only option of medical support for most of the rural population.

7.1 Taken steps in Lapkaman village related to existing situation

During interaction with the Sarpanch, he told us that the home quarantine facility was implemented during the lockdown. According to Talati, Sarpanch and villagers; in the Lapkaman villagethe sanitization process was done during the lockdown period when first case of covid 19 came in thevillage.

7.2 Any other steps taken by the students / villagers:

During interaction with the Sarpanch, he told us that the home quarantine facilities were implemented during the lockdown. In the COVID-19 situation cleaning, fogging and sanitization weredone in the village and also village condition is most fine and number of cases is less.

CHAPTER 8 : Sustainable Design Planning Proposal (Prototype Design)- Part- I (Scenario / Existing Situation / Proposed Design In Auto Cad / Recapitulation Sheet / Measurement Sheet / Abstract Sheet / Sustainability Of Proposal):

8.1 Design Proposal:

In Our Allocated Village "Lapkaman" There Is No Infrastructure Development And Also There Is No Any Public Buildings For The Villagers. The Village Has Not Evened a Bus Station for the Busses so that's Why There Is No Any Transportations Facilities like State Transport. In That Village There Is No Any Public Garden For The Villagers To Seat And Also There Is No Any Play Ground For The Children Also The Village Has Not A Proper Infrastructure Or Building For The School And Also There Is No Any Community Hall For The Purposes Of The Social Functions And Also For The Meetings Of Villagers. Lapkaman Has Not A Primary Health Center For The Primary Treatment Of The Villagers. Gram Panchayat Is Also In The Dead Condition. So In the Village the Infrastructure Is Very Poor that's Why We Suggest or We Propose Some Designs for the Village.

Proposed Design:

1. Bus Stand.
2. Community Hall.
3. Garden.
4. Health Center.
5. High school.
6. Library

8.1.1 Sustainable design: Bus stop

BUS STAND

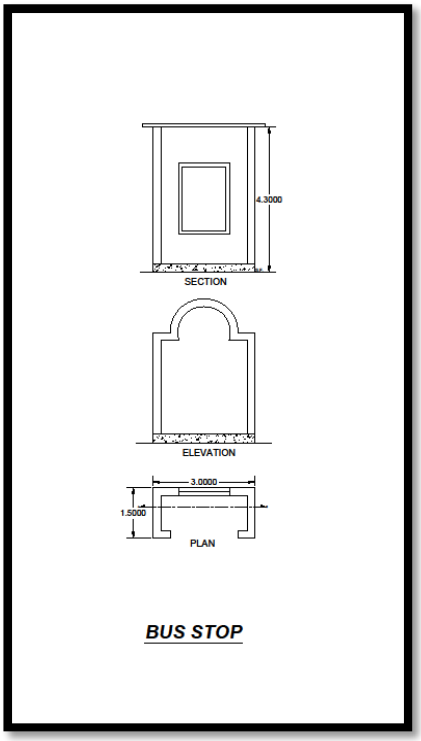
For improving the transportation facility we have to build a bus stand in village for the sitting of the passengers and also they can wait there for the busses and other transportation services.

Existing Situation:

There is no any bus stand in the village.

Proposed:

We are proposed the design for the bus stand which has toilets for women and men and also there is a water cooler which is provides the cold and clean water to the passengers.



Measurement Sheet, Maintenance cost Quantity sheet (Bus Stand):

SR NO.	DISCRIPTION	NO.	LENGH	WIDTH	HEIGT	QTY	TOTAL OTY
1	Earthwork in excavation in foundation (3.00-0.230)+ (1.50-0.230) =(4.04x2) = 8.08m	1	8.08	0.9	0.5	3.636	
2	P.C.C	1	8.08	0.9	0.15	1.09	
3	Brick masonry	1	8.08	0.23	4.3	7.99	
					Total quantity		12.716 m3
4	Slab(RCC)	1	4.50		0.135	0.607	0.607 M2

Quantity sheet (Bus stand)

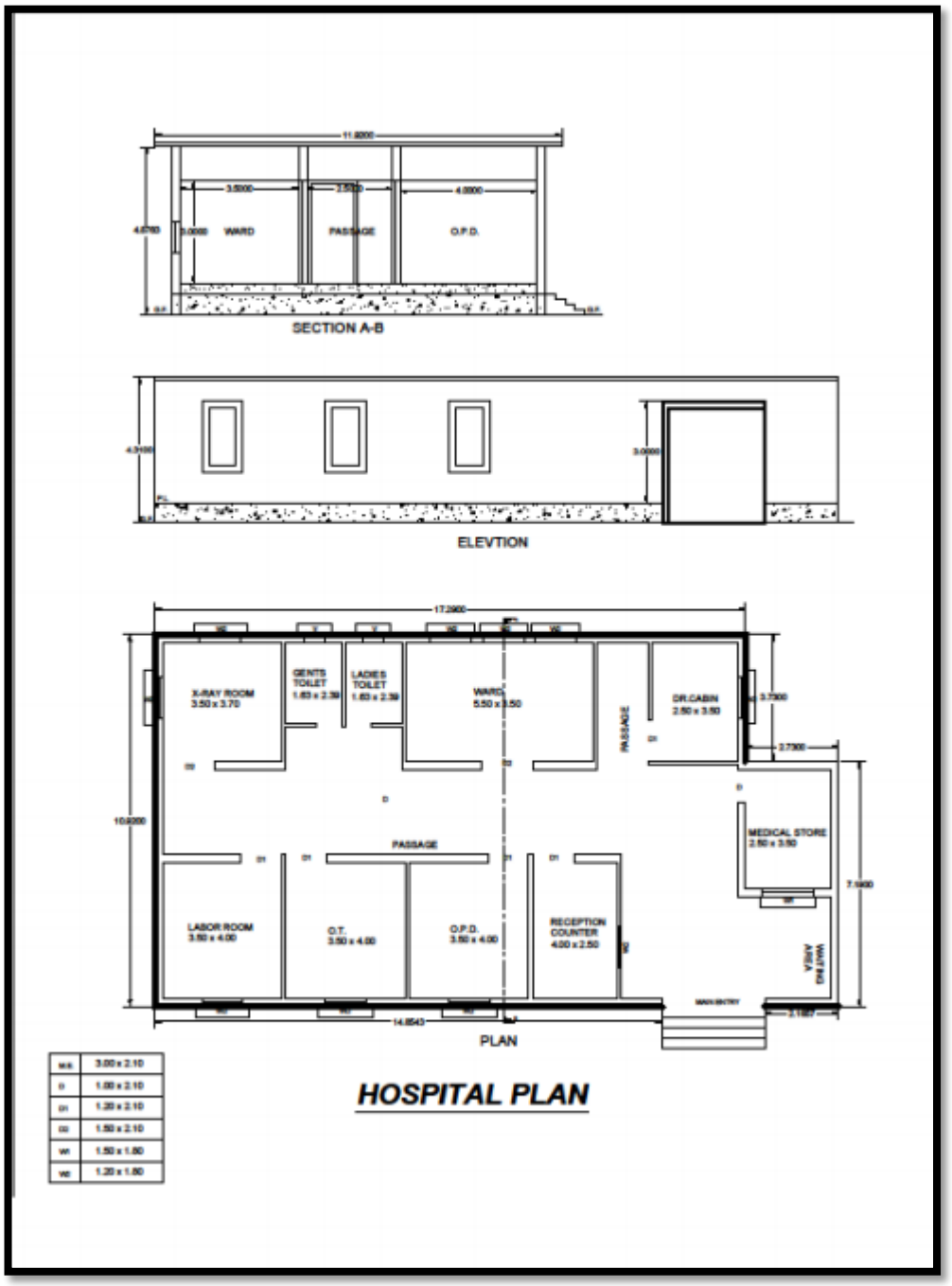
Abstract sheet (Bus Stand building):

SR.NO	ITEM	QUANTITY	RATE(Rs.)	PER	AMOUNT (Rs.)
1	Excavation for foundation in loose or soft soil up to 1.50 m depth including sorting out & stacking of useful materials and disposing of the excavated stuff up to 50 m	3.636	Cm t	122.00	443.59
2	Providing & laying cement concrete 1:2:4(1cement 2 sand 4 graded stone aggregate 20mm nominal size) and curing complete excluding cost of formwork in foundation and plinth	1.09	Culm	2694.00	21525.06
3	Providing & laying brick masonry	7.99	Cm t	2694.00	21525.06
4	Providing & laying reinforced cement concrete	0.607	Smt	127.43	77.35001

Table 8.5.2 Abstract sheet (Bus stand building)

8.1.2 PHYSICAL DESIGN: HEALTH CENTER

HOSPITAL



- **Measurement Sheet, Maintenance cost Quantity sheet (Hospital building):**

SRNO	DISCRIPTION	NO.	LENGTH	WIDTH	HEIGHT	QTY	TOTAL OTY
1	Earthwork in excavation in foundation: 126.5307-(0.9/2)x14 =120.2307	1	120.23	0.90	0.80	86.57	86.57 cu.m
2	B.B.C.C. 126.5307-(0.9/2)x14 =120.2307	1	120.23	0.90 0.83	0.30	32.46	32.46 Cu.m
3	Brickwork in cement mortar in foundation up to plinth: 126.5307-(0.9/2)x14 120.23	1	120.23	0.23	0.50	13.83	13.83 Cu.m
4	1st class brickwork in lime mortar in superstructure 126.53-(0.23/2)x14 =124.92	1	124.92	0.23	4.90	140.78	
	Dividing wall between w.c. & bath wall in front of w/c						143.00 cu.m
		1 1	2.39 3.26	0.11 0.11	4.90 4.90	1.29 1.76	

	*Deduction:- DOOR M.E. D D1 D2 WINDOW W1 W2 V	 1 1 5 2	 3.00 1.00 1.20 1.50	 0.23 0.23 0.23 0.23	 2.10 2.10 2.10 2.10	 1.45 0.48 0.58 0.72	
		1 9 2	1.50 1.20 0.60	0.23 0.23 0.23	1.80 1.80 0.60	0.62 4.47 0.83	8.23 cu.m
				Net Quantity =134.77 cu.m			
5	R.C.C. work in slab:					10.18	10.18
	(20x11)-(3.73-						Cu.m
	2.73)=10.18						

Abstract sheet (Hospital building):

SR.NO	ITEM	QUANTITY	RATE(Rs.)	PER	AMOUNT
1	Excavation for foundation in loose or soft soil up to 1.50 m depth including sorting out & stacking of useful materials and disposing of the excavated stuff up to 50 m	86.57	cmt	122.00	10561.54
2	BBCC	32.46	Cu.m		
3	Brickwork in cement mortar in foundation up to plinth	13.83	cmt	2694.00	37258.02
4	R.C.C. work in slab:	10.18	smt	127.43	1297.23

8.1.3 SOCIAL DESIGN: HIGH SCHOOL BUILDING

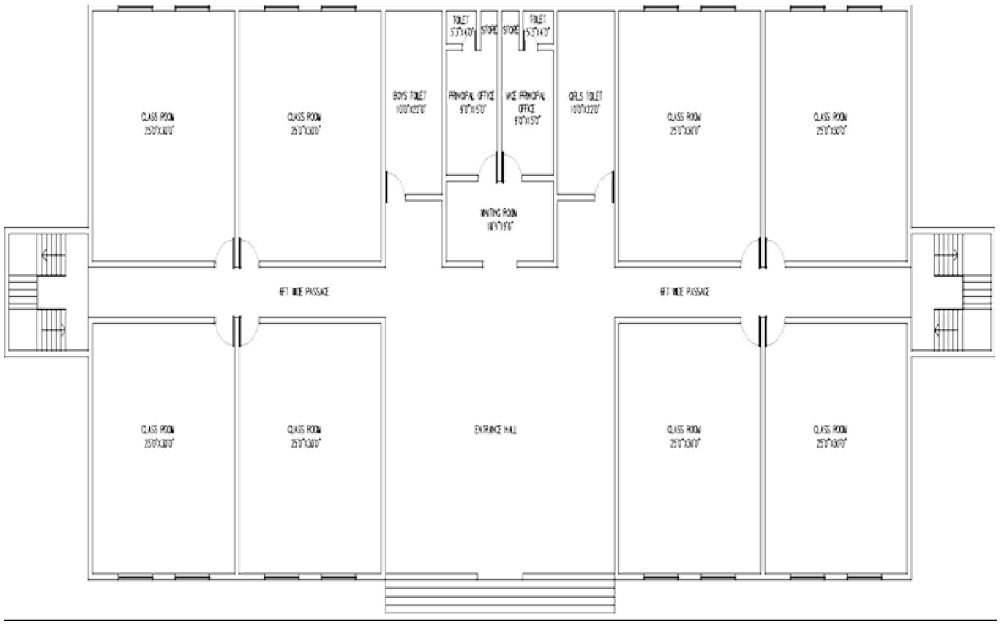
Scenario:-

There are two primary schools in the village but there is no secondary or higher secondary school available in the village. The students studying in secondary or higher secondary has to travel 8 km to 9 km to go to sanand.

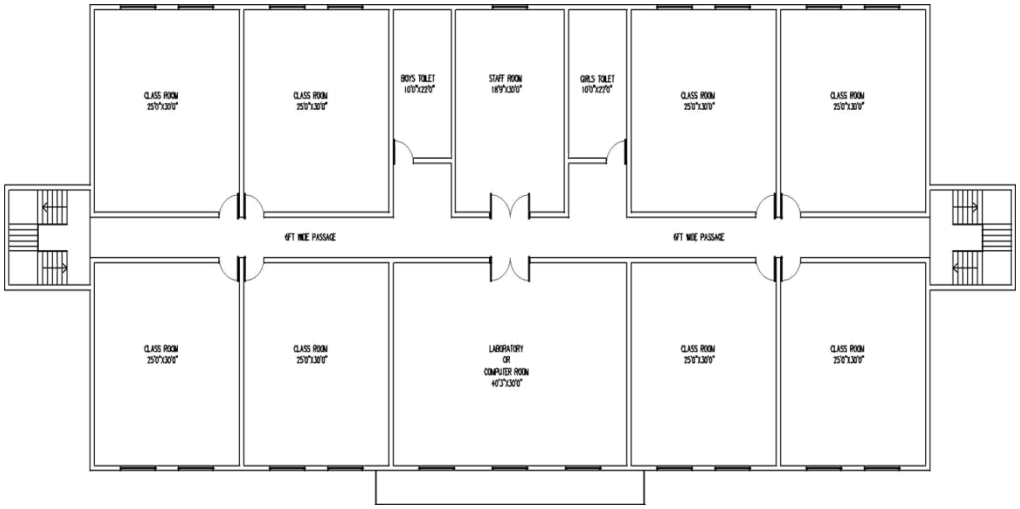
Existing Situation:-

In the current situation there are two primary schools in the village but there is no secondary or higher secondary school available in the village.

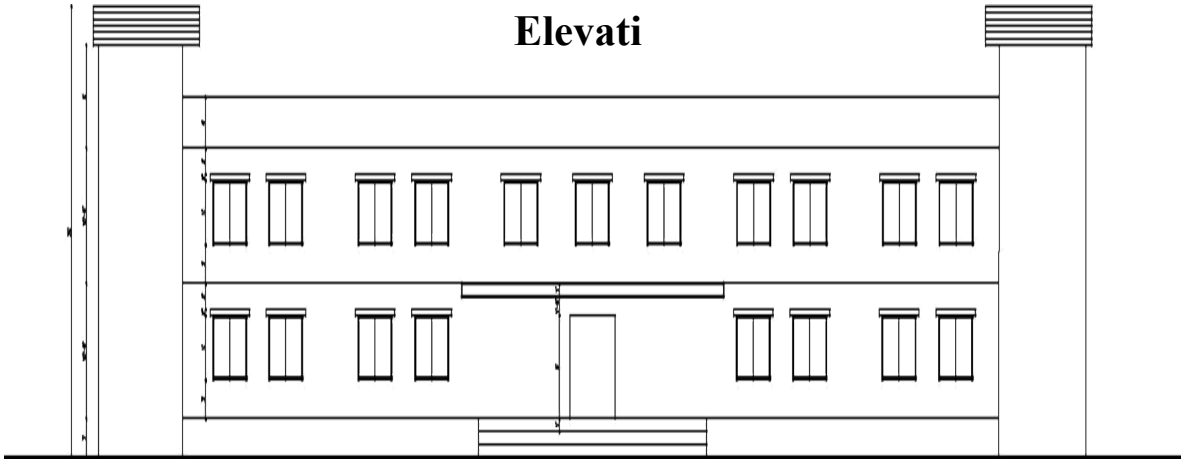
- **Proposed (details drawing plan, elevation and section, Recapitulation Sheet):**



High school plan (G.F)



FIRST FLOOR PLAN



ELEVATION OF SCHOOL

❖ Measurement Sheet, Maintenance cost

Quantity sheet (School building):

SR NO.	DISCRIPTION	NO.	LENGTH	WIDTH	HEIGHT	QTY	TOTAL OTY
1	Excavation for foundation						
	Long walls (Horizontal):						
	L1	16	8.52	0.9	1.2	147.22	
	L2	2	9.64	0.9	1.2	8.51	
	L3	4	3.94	0.9	1.2	14.42	
	L4	2	2.50	0.9	1.2	5.44	
	Short walls (vertical):						
	S1	11	8.24	0.9	1.2	106.8	
	S2	3	5.2	0.9	1.2	16.84	
	S3	2	0.92	0.9	1.2	0.7	
							299.94 m3
2	D.P.C. Work at plinth level						
	Long walls (Horizontal):						
	L1	16	8.52		0.3	40.89	
	L2	2	3.94		0.3	2.36	
	L3	4	3.34		0.3	2.0	
	L4	2	2.52		0.3	1.52	

2.1	Short walls (vertical):						
	S1		8.24		0.3	106.8	
	S2		5.2		0.3	16.84	
	S3		0.32		0.3	0.7	
							81.56 m2
3	RCC Work for slab						
	Length of slab: 45 m		45	21.03	0.15	141.95	
	Width of slab: 21.03 m						141.95 m3
4	Brick work in super structure						
4.1	Ground floor						
	Long walls (Horizontal):						
	L1		7.92	0.3	3	114.04	
	L2		4.24	0.3	3	7.63	
	L3		3.04	0.3	3	10.94	
	L4		1.92	0.3	3	3.46	
	Short walls (vertical):						
	S1		8.84	0.3	3	95.47	
	S2		5.8	0.3	3	15.66	
	S3		0.92	0.3	3	1.66	
							249.19 m3
4.2	First floor						
	Long walls (Horizontal):						
	L1		7.92	0.3	3	1114.01	
	L2		4.24	0.3	3	7.63	
	L3		3.01	0.3	3	10.94	
	L4		2.02	0.3	3	3.46	

	Short walls (vertical):						
	S1	12	8.84	0.3	3	95.47	
	S2	3	5.8	0.3	3	15.66	
	S3	2	1.22	0.3	3	2.2	
							246.3 m3
4.3	Terrace						
	Long walls (Horizontal):	2	45	0.15	1.2	16.2	
	Short walls (vertical):	2	21.03	0.15	1.2	7.57	
							23.77 m3
5	Wood or aluminum work for						
	doors and window						
	D1	24	0.9		2.1	45.63	
	D2	2	0.8		2.1	3.36	
	W	35	0.9		1.2	37.8	
	V	6	0.45		0.6	1.62	
							88.41 m2
6	Steel work						
	(considering 2% steel)						
	(2x141.95)x 0.02						5.67 m3
	1 m3 -7850 kg						
	5.67 m3 - 44509 kg						

Abstract sheet (School building):

NO	ITEM	QUANTITY	RATE(Rs.)	PER	AMOUNT
1	Excavation in foundation	299.94	90	M3	26994.6
2	DPC work	81.56	150	M2	12234
3	RCC work for slab	141.95	8800	M3	1249160
4	Brick work for superstructure				
4.1	Ground floor	249.19	4000	M3	996760
4.2	First floor	246.3	4000	M3	985200
4.3	Terrace	23.77	3500	M3	83195
5	Wood or alluminium work for doors and windows	88.41 m2	8000	M2	707280
6	Steel work	5.67 m3	50	kg	2225450
		(44509 kg)			
					6286273.6 Rs.

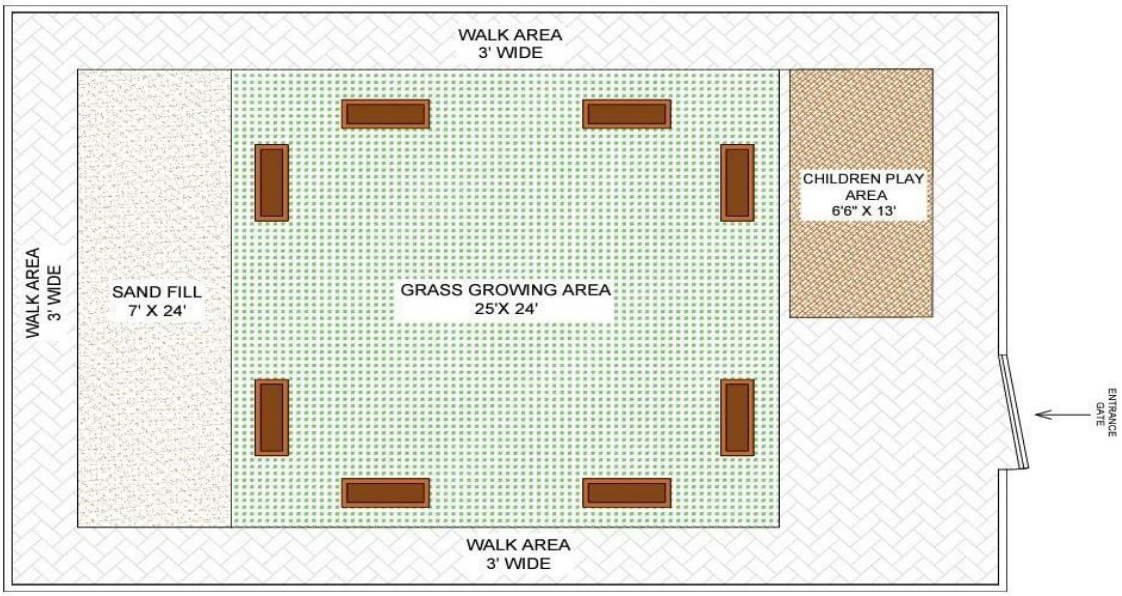
8.1.4 SOCIO CULTURAL DESIGN: PUBLIC GRDEN

Scenario:-

There is no public spot for get together, children play on roads, and schools are not open for children after premises. Even senior citizens cannot find a spot to breath in good atmosphere in order to do so they crowd the local temple.

DESIGN OF PIBLIC GARDEN

Measurement Sheet



❖ Measurement Sheet

Item	Description of no item	NO	length	width	depth	quantity	Total quantity
1	Leveling	1	45	30			1350 m2
2	Grass growing area	1	25	24			750m2
3	Sand filling	2	10	30	0.50	300	
4		2	25	3	0.50	75	
							375m3
	Compound wall						
	Long wall	2	45	0.2	1.5	27	
	Short wall	2	30	0.2	1.5	18	
	Deduction						
	Gate	1	3	0.2	1.5	- 0.9	
							44.91m3

❖ Abstract Sheet

Item no	Description of items	Quantity	rate	Per	Amount
1	Bricks	22455	3.5	no	78,593
2	Cement	53	325	bag	17,225
3	Sand	13.80	500	tone	17,310
4	Leveling	1360	5	m2	6,750
5	Grass growing area	750	75	m2	56,250
6	Sand leveling	375	31	m 3	11,600
7	Gate and rides	Iumsum			30,000
					2,17,728

8.2 Recommendations of the Design:

- There Is No Bus Station For The Transportation Service
- There Is No Primary Health Center For The Villagers.
- There Is No Any Community Hall For The Social Functions And Meetings.
- Infrastructure Are Very Poor.
- Gram Panchayat Is Also In Dead Condition.
- There Is No Any Rain Water Harvesting System.
- There Is No Any Public Garden for The Villagers And Also There Is No Any Children Play Ground.
- There Is Some Roads Are Very Damaged And Also They Are Full Off Water In Rainy Weather So We Can Construct The Roads.

8.3 Suggestions / Benefit of the Villagers:

- **By** Making The Bus Stand The Transportation Facility For The Public Is Increased
- By Making a Primary Health Center We Can Increase The Health Status Of The Villagers.
- By Making a Community Hall We Can Increase Sociality in the Villagers.
- By Making Rain Water Harvesting System We Can Stored The Water And Solve The Problems Of The Villagers Which Are Related To The Water.

- By Making The Public Garden And Children Play Area We Can Make A Better Environment For The Village.
- By Making The Roads We Can Improve The Transportations System For The Villagers.

8.4 ABOUT MAINTANACE

- Prevent the process of decay and degradation.
- Maintain structural stability and safety.
- Prevent unnecessary damage from the weather or from general usage.
- Optimize performance.
- Determine the causes of defects and so help prevent re-occurrence or repetition.
- Ensure continued compliance with statutory requirements.

➢ For maintenance to be most effective, it should be organized through a programmer of cyclical maintenance. At the most basic level this includes daily routines, and works upwards to periodic programmers of weekly, monthly, semi-annual, annual, quinquennial and so on routines.

Common maintenance tasks include:

- Exterior painting and plastering.
- Landscaping and gardening.
- Paving repairs.
- Window and door repairs.
- Debris/rubbish removal and clearance.
- Jet washing with chemical cleaning agents to remove fungal stain or mould.
- Gutter clearance and repair.
- Carpentry.
- Lighting repairs.
- Re-plastering and plaster repairs.
- Tiling.
- Carpeting and flooring.
- Plumbing.
- Repairing cracking or leaning walls.

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

The main scope of the project is to contribute a little in providing the urban amenities and facilities in rural area by keeping the originality of the village. It will reduce migration of villagers towards cities which ultimately result in development of village. The following are the future requirement of the village.

- Usages of technology like CCTV cameras for smart surveillance system stop inspect the roads and also act as speed monitors.
- Smart sewage treatments facilities
- Renewable energy/ solar energy system should be installed.
- Smart garbage collection/ recycling system should be put in place. Different color coded dustbin should be promoted there.
- Adequate leisure activities should be developed and provided to public.

Chapter 10 Conclusion (Entire Village Project):

Smart villages are need of the hour as development is needed for both rural and urban areas for betterment livelihood and information technology will offer effective solution. There is successful technology available, which have been implemented in urban areas. There is tremendous pressure on urban landscape due to migration of rural people for livelihood. Smart villages will not only reduce this migration but also irrigate the population flow from urban to rural area.

Villages do not have any garbage collector or any dustbin for waste proposal. So, by analyzing this basic amenity they are offering from diseases because of drainage stagnant poor lithe water drainage systemic installed it will improve the quality of village and as well as it will maintain cleanliness for better life of villagers. Even they have not provided any water drinking facilities and they use to drink water from Narmada illegally so basically they drink tap water and it is not good for their livelihood so if RO water will be provided villagers would lead healthy lifestyle and also provide a garbage collector or dustbin to keep their village clean and would avoid diseases. So, to make a village to smart village is the main conclusion or aim of our project.

Chapter 11 References of report Following are the list of References:

- https:/www.censusindia.gov.in
- https://www.google.com
- Building and Town Planning by Dr. R P Rethaliya
- Professional Practice and Valuation by Dr. R P Rethaliya
- http://censusindia.gov.in - Census department website
- UDPFI Guideline2014
- Schedule of rate2014
- http://vy.gtu.ac.in – Vishwakarma literatures
- Google maps

CHAPTER 12: ANNEXURE ATTACHMENT

SMART VILLAGE (PUNSARY) Survey Form:

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

Techno Economic Survey

For

Vishwakarma Yojana: Phase VIII

An approach towards Rurbanisation for Village Development

Name of Village:	Punsari
Name of Taluka:	Talod
Name of District:	Sabarkantha
Name of Institute:	Sal. engg & technical institute
Nodal Officer Name & Contact Detail:	Prof Hema vanar 9825308036
Respondent Name: (Sarpanch/ Panchayat Member/ Teacher/ Gram Sevak/ Aaganwadi worker/Village dweller)	Patel Sundaben P.
Date of Survey:	26 - 8 - 20

1. **Demographical Detail:**

Sr. No.	Census	Population	Male	Female	Total House Holds
i)	2001				
ii)	2011	5100	2653	2447	1109

2. **Geographical Detail:**

Sr. No.	Description	Information/Detail
i)	Area of Village (Approx.) (In Hector) Coordinates for Location:	1041.08 hectares
	Forest Area (In hect.)	–
	Agricultural Land Area (In hect.)	700 hectares
	Residential Area (In hect.)	–
	Other Area (In hect.)	–
	Water bodies	RO Plant, Water tank, bore well
	Nearest Town with Distance:	Modasa - 30 km

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

3. **Occupational Details:**

Name of Three Major Occupation groups in Village	1	farmers
	2	Job's
	3	Small scale industries

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	RO water	✓		
Suggestions if any					
B.	**Water Tank Facility**				
	Overhead Tank	Capacity			
	Underground Sump	Capacity			
Suggestions if any					
C.	**Drainage Facility**				
	Available (Yes/ No)		✓		
Suggestions if any					
D.	**Type of Drainage**				
	Closed/ Open	Closed			
	If Open than Pucca / Kutchcha				

Gujarat Technological University, Ahmedabad, Gujarat

Vishwakarma Yojana: Phase IV
Techno Economic Survey

	Whether drain water is discharged directly in to Water bodies/ Sewer plants		✓		
Suggestions if any					

E.	**Road Network :All Weather/ Kutchha (Gravel)/ Black Topped pucca/ WBM**				
	Village approach road	Bitumin			
	Main road	Bitumin			
	Internal streets	RCC			
	Nearest NH/SH/MDR/ODR Dist. in kms.				
Suggestions if any					
F.	**Transport Facility**				
	Railway Station (Y/N) (If No than Nearest Rly Station---Kms)			No Dhunsura (20 km)	
	Bus station (Y/N) Condition: (If No than Nearest Bus Station---Kms)			No - (6.1 km)	
	Local Transportation (Auto/ Jeep/Chhakda/ Private Vehicles/ Other)		✓		
Suggestions if any					
G.	**Electricity Distribution**				
	(Y/N) Govt./ Private (Less than 6 hrs./ More Than 6 hrs)	Govt / private			
	Power supply for Domestic Use		✓		

J.	**Housing Condition:**				
	Kutchha/Pucca (Approx. ratio)	Pucca	✓		

5. **Social Infrastructural Facilities:**

Sr. No.	Descriptions	Information/ Detail	Adequate	Inadequate	Remarks
K.	**Health Facilities:**				
	Sub center/ PHC/ CHC /Government Hospital/ Child welfare & Maternity Homes (If Yes than specify No. of Beds) Condition:	Primary health center Good			
	Private Clinic/Private Hospital/ Nursing Home				
	If any of the above Facility is not available in village than approx. distance from village: .....kms.				
Suggestions if any.					
L.	**Education Facilities:**				
	Aaganwadi/ Play group	8 Nos.	✓		
	Primary School	1			
	Secondary school	1			
	Higher sec. School	1			
	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.				
Suggestions if any:					
M.	**Socio- Culture Facilities**				
	Community Hall (With or without TV) Location:	Community hall ✓			
	Condition:	Good			
	Public Library (With daily newspaper supply: Y/N) Location: Condition:	Mobile library In village Good			
	Public Garden Location: Condition:				
	Village Pond Location: Condition:				
	Recreation Center Location: Condition:				
	Cinema/ Video Hall Location: Condition:				

	Assembly Polling Station Location: Condition	School Good	✓		
	Birth & Death Registration Office Location: Condition:	Panchayat Panchayat Good			
If any of the above Facility is not available in village than approx. distance from village: .....kms.					
Suggestions if any:					
N.	**Other Facilities**				
	Post-office		✓		
	Telecommunication Network/ STD booth		✓		
	General Market		✓		
	Shops (Public Distribution System)		✓		
	Panchayat Building		✓		
	Pharmacy/Medical Shop		✓		
	Bank & ATM Facility		✓		
	Agriculture Co-operative Society		✓		
	Milk Co-operative Soc.		✓		
	Small Scale Industries		✓		
	Internet Cafes/ Common Service Center/Wi Fi	wifi	✓		
	Other Facility	RO Plant	✓		
Suggestions if any:					

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

Sr. No.	Descriptions	Information/ Details	Adequate	Inadequate	Remarks
O.	Adoption of NonConventional Energy Sources/ Renewable Energy Sources	Electricity Generation plant	✓		66 kV
P.	Bio-Gas Plant Solar Street Lights Rain Water Harvesting System	Solar Street light	✓		
Q.	Any Other	CCTV	✓		

7. Data Collection From Village

Village Base Map Available: Hard Copy/Soft Copy	Soft copy
Recent Projects going on for Development of Village	
Any NGO working for village development	SBI

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)		There is all building are im good condition
2.	Additional Information/ Requirement		

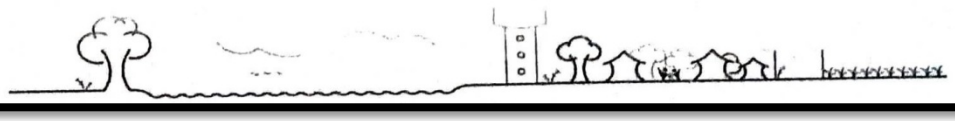
Note: Photographs/ Video/ Drawings of all existing Infrastructure facilities & conditions

should be taken by students of respective villages for their record and information.

For Any Technical queries/ Difficulties:
Ms Jagruti Shah, OSD
Contact no. 9978980170

For Any Administration queries/ Difficulties
Ms. Darshana Chauhan, OSD
Contact No. 9909944891

Email ID: rurban@gtu.edu.in



IDEAL VILLAGE (AKODRA)

Gujarat Technological University, Ahmedabad, Gujarat

Vishwakarma Yojana: Phase IV
Techno Economic Survey

Techno Economic Survey

For

Vishwakarma Yojana: Phase VIII

An approach towards Rurbanisation for Village Development

Name of Village:	Aakodra.
Name of Taluka:	Himatnagar.
Name of District:	Sabarkantha
Name of Institute:	Sal. engg & technical. Institute.
Nodal Officer Name & Contact Detail:	
Respondent Name: (Sarpanch/ Panchayat Member/ Teacher/ Gram Sevak/ Aaganwadi worker/Village dweller)	Hitesh Patel.
Date of Survey:	26-8-20.

1. **Demographical Detail:**

Sr. No.	Census	Population	Male	Female	Total House Holds
i)	2001				
ii)	2011	1191	538	653	236

2. **Geographical Detail:**

Sr. No.	Description	Information/Detail
i)	Area of Village (Approx.) (In Hector) Coordinates for Location:	7390 km2
	Forest Area (In hect.)	0
	Agricultural Land Area (In hect.)	15.68 Gr. Area,
	Residential Area (In hect.)	534 sq.m
	Other Area (In hect.)	25 ha
	Water bodies	RO plant.
	Nearest Town with Distance:	Vadhavasa - 19 km

Gujarat Technological University, Ahmedabad, Gujarat

Vishwakarma Yojana: Phase IV
Techno Economic Survey

3. Occupational Details:

Name of Three Major Occupation groups in Village	1. farmers 2. Job's 3. Small scale industries

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	R O water	✓		
Suggestions if any:					
B.	**Water Tank Facility**				
	Overhead Tank	Capacity:			
	Underground Sump	Capacity:			
Suggestions if any:					
C.	**Drainage Facility**				
	Available (Yes/ No)		✓		
Suggestions if any:					
D.	**Type of Drainage**				
	Closed/ Open	Closed			
	If Open than Pucca / Kutchcha				

Gujarat Technological University, Ahmedabad, Gujarat

Vishwakarma Yojana: Phase IV
Techno Economic Survey

	Whether drain water is discharged directly in to Water bodies/ Sewer plants		✓		
Suggestions if any:					

E.	Road Network :All Weather/ Kutchha (Gravel)/ Black Topped pucca/ WBM				
	Village approach road	Bitumin			
	Main road	Bitumin			
	Internal streets	RCC,			
	Nearest NH/SH/MDR/ODR Dist. in kms.				
Suggestions if any:					

F.	Transport Facility				
	Railway Station (Y/N) (If No than Nearest Rly Station---Kms)			No Himmatnagar ~~Dhoraji~~ (30.4 km)	
	Bus station (Y/N) Condition: (If No than Nearest Bus Station---Kms)			No (8.5 km)	
	Local Transportation (Auto/ Jeep/Chhakda/ Private Vehicles/ Other)		✓		
Suggestions if any:					

G.	Electricity Distribution				
	(Y/N) Govt./ Private (Less than 6 hrs./ More Than 6 hrs)	Govt / Private.			
	Power supply for Domestic Use		✓		

	Power supply for Agricultural Use				
	Power supply for Commercial Use				
	Road/ Street Lights		✓		
	Electrification in Government Buildings/ Schools/ Hospitals	Schools.			
	Renewable Energy Source Facilities (Y/ N)		✓		
	LED Facilities		✓		

Suggestions if any:

H.	**Sanitation Facility**				
	Public Latrine Blocks If available than Nos.				
	Location Condition				
	Community Toilet (With bath/ without bath facilities)				
	Solid & liquid waste Disposal system available		✓		
	Any facility for Waste collection from road		✓		

Suggestions if any:

I.	**Irrigation Facility:**				
	Main Source of Irrigation (Stream/River/ Canal/ Well/ Tube well/ Other)	Canal.	✓		

Suggestions if any:

Gujarat Technological University, Ahmedabad, Gujarat

Vishwakarma Yojana: Phase IV
Techno Economic Survey

J.	Housing Condition:				
	Kutchha/Pucca (Approx. ratio)	Pucca.			

5. **Social Infrastructural Facilities:**

Sr. No.	Descriptions	Information/ Detail	Adequate	Inadequate	Remarks
K.	**Health Facilities:**				
	Sub center/ PHC/ CHC /Government Hospital/ Child welfare & Maternity Homes (If Yes than specify No. of Beds) Condition:	Primary health center Good			
	Private Clinic/Private Hospital/ Nursing Home				
	If any of the above Facility is not available in village than approx. distance from village: .....kms.				
Suggestions if any:					
L.	**Education Facilities:**				
	Aaganwadi/ Play group	2 Nos.	✓		
	Primary School	1			
	Secondary school	1			
	Higher sec. School	1			
	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.				
Suggestions if any:					
M.	**Socio- Culture Facilities**				
	Community Hall (With or without TV) Location:	Community hall.	✓		
	Condition:	Good			
	Public Library (With daily newspaper supply: Y/N) Location: Condition:	News paper supply			
	Public Garden Location: Condition:				
	Village Pond Location: Condition:				
	Recreation Center Location: Condition:				
	Cinema/ Video Hall Location: Condition:				

	Assembly Polling Station Location: Condition:	School Good	✓		
	Birth & Death Registration Office Location: Condition:	Panchayat. Panchayat Good			
If any of the above Facility is not available in village than approx. distance from village: .....kms.					
Suggestions if any:					
N.	**Other Facilities**				
	Post-office		✓		
	Telecommunication Network/ STD booth		✓		
	General Market		✓		
	Shops (Public Distribution System)		✓		
	Panchayat Building		✓		
	Pharmacy/Medical Shop		✓		
	Bank & ATM Facility		✓		
	Agriculture Co-operative Society		✓		
	Milk Co-operative Soc.		✓		
	Small Scale Industries		✓		
	Internet Cafes/ Common Service Center/Wi Fi	wifi	✓		
	Other Facility	RO plant	✓		
Suggestions if any:					

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

Gujarat Technological University, Ahmedabad, Gujarat

Vishwakarma Yojana: Phase IV
Techno Economic Survey

Sr. No.	Descriptions	Information/ Details	Adequate	Inadequate	Remarks
O.	Adoption of NonConventional Energy Sources/ Renewable Energy Sources	Electricity generation plant.	✓		
P.	Bio-Gas Plant Solar Street Lights Rain Water Harvesting System	Solar Street light	✓		
Q.	Any Other				

7. Data Collection From Village

Village Base Map Available: Hard Copy/Soft Copy	Soft Copy.
Recent Projects going on for Development of Village	
Any NGO working for village development	SBI.

8. Additional Information/ Requirement:

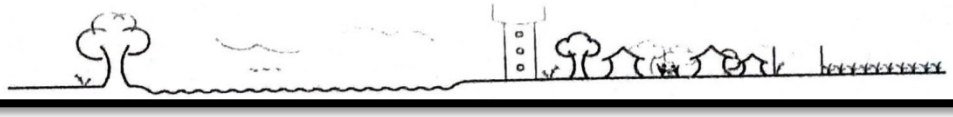
Sr. No.	Descriptions	Information/ Detail	Remarks
1.	Repair & Maintenance of Existing Public Infrastructure facilities(School Building, Health Center, Panchayat Building, Public Toilets & any other)		These is all building are in good condition.
2.	Additional Information/ Requirement		

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 Technical queries/ Difficulties:
Ms Jagruti Shah, OSD
Contact no. 9978980170

For Any Administration queries/ Difficulties:
Ms. Darshana Chauhan, OSD
Contact No. 9909944891

Email ID: rurban@gtu.edu.in



Allocated Village (Lapkaman) Survey Form:

Gujarat Technological University, Ahmedabad, Gujarat

Vishwakarma Yojana: Phase IV
Techno Economic Survey

Techno Economic Survey

For

Vishwakarma Yojana: Phase VIII

An approach towards Rurbanisation for Village Development

Name of Village:	Lapkaman
Name of Taluka:	Daskroi
Name of District:	Ahmadabad
Name of Institute:	Sal engg & technical institute
Nodal Officer Name & Contact Detail:	Prof. Hemra vanar 9825308036
Respondent Name: (Sarpanch/ Panchayat Member/ Teacher/ Gram Sevak/ Aaganwadi worker/Village dweller)	Sarpanch - Arvindbhai S.
Date of Survey:	06/09/2020

1. **Demographical Detail:**

Sr. No.	Census	Population	Male	Female	Total House Holds
i)	2001				
ii)	2011	2194	1138	1056	460

2. **Geographical Detail:**

Sr. No.	Description	Information/Detail
i)	Area of Village (Approx.) (In Hector) Coordinates for Location.	517.22 hectares
	Forest Area (In hect.)	-
	Agricultural Land Area (In hect.)	1533 Sq.m
	Residential Area (In hect.)	498 Sq.m.
	Other Area (In hect.)	-
	Water bodies	-
	Nearest Town with Distance:	Daskroi - 15 km Kalol - 15 km

Gujarat Technological University, Ahmedabad, Gujarat

Vishwakarma Yojana: Phase IV
Techno Economic Survey

3. Occupational Details:

Name of Three Major Occupation groups in Village	1. Farmers 2. Jobs in private / govt 3. Animals husbandary

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	Borehole Hand pumps Lake	✓ ✓ ✓		
Suggestions if any					
B.	**Water Tank Facility**				
	Overhead Tank	Capacity	1-b ✓		
	Underground Sump	Capacity			
Suggestions if any					
C.	**Drainage Facility**				
	Available (Yes/ No)			No.	
Suggestions if any					
D.	**Type of Drainage**				
	Closed/ Open	Open			
	If Open than Pucca / Kutchcha		Kutchcha		

Gujarat Technological University, Ahmedabad, Gujarat

Vishwakarma Yojana: Phase IV
Techno Economic Survey

	Whether drain water is discharged directly in to Water bodies/ Sewer plants		Lake		
Suggestions if any:					

E.	Road Network :All Weather/ Kutchha (Gravel)/ Black Topped pucca/ WBM				
	Village approach road	Bitumin	✓		Approach road is 4 km.
	Main road	Bitumin			
	Internal streets	Kutchchu			At some place paves block are provide.
	Nearest NH/SH/MDR/ODR Dist. in kms	SH - 7.1 km			
Suggestions if any					

F.	Transport Facility				
	Railway Station (Y/N) (If No than Nearest Rly Station---Kms)		N 4.89km	N- 4.89km	
	Bus station (Y/N) Condition: (If No than Nearest Bus Station---Kms)			N- 7 km	
	Local Transportation (Auto/ Jeep/Chhakda/ Private Vehicles/ Other)		✓		
Suggestions if any:					

G.	Electricity Distribution				
	(Y/N) Govt./ Private (Less than 6 hrs./ More Than 6 hrs)	Govt	✓		24 hour electricity.
	Power supply for Domestic Use		✓		4000 connection

Gujarat Technological University, Ahmedabad, Gujarat

Vishwakarma Yojana: Phase IV
Techno Economic Survey

	Power supply for Agricultural Use		✓		10 Connection
	Power supply for Commercial Use			No.	
	Road/ Street Lights		✓		Solar Street light are also available
	Electrification in Government Buildings/ Schools/ Hospitals	Schools.	✓		
	Renewable Energy Source Facilities (Y/ N)			No	
	LED Facilities			No.	
Suggestions if any					
H.	**Sanitation Facility**				
	Public Latrine Blocks If available than Nos		~~A~~	No	
	Location Condition			No.	
	Community Toilet (With bath/ without bath facilities)			No	
	Solid & liquid waste Disposal system available			No	
	Any facility for Waste collection from road			No	
Suggestions if any					
I.	**Irrigation Facility:**				
	Main Source of Irrigation (Stream/River/ Canal/ Well/ Tube well/ Other)			No	
Suggestions if any					

J.	Housing Condition:				
	Kutchha/Pucca (Approx. ratio)	Pucca - 80%			

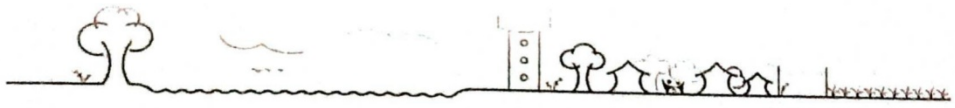
5. **Social Infrastructural Facilities:**

Sr. No.	Descriptions	Information/ Detail	Adequate	Inadequate	Remarks
K.	**Health Facilities:**				
	Sub center/ PHC/ CHC /Government Hospital/ Child welfare & Maternity Homes (If Yes than specify No of Beds) Condition	No			
	Private Clinic/Private Hospital/ Nursing Home	No			
	If any of the above Facility is not available in village than approx. distance from village ..... kms.				
Suggestions if any:					
L.	**Education Facilities:**				
	Aaganwadi/ Play group	1	✓		
	Primary School	1	✓		
	Secondary school			No	
	Higher sec. School			No	
	ITI college/ vocational Training Center			No	

	Art, Commerce& Science /Polytechnic/ Engineering/ Medical/ Management/ other college facilities			No	
	If any of the above Facility is not available in village than approx. distance from village: 5 kms				
Suggestions if any					
M.	**Socio- Culture Facilities**				
	Community Hall (With or without TV) Location			No	
	Condition				
	Public Library (With daily newspaper supply Y/N) Location Condition		✓	No	
	Public Garden Location: Condition			No	
	Village Pond Location Condition:			No	
	Recreation Center Location: Condition:			No	
	Cinema/ Video Hall Location: Condition:			No	

	Assembly Polling Station Location: Condition:			No.	
	Birth & Death Registration Office Location: Condition:			No	
If any of the above Facility is not available in village than approx. distance from village: ..10..kms.					
Suggestions if any:					
N.	**Other Facilities**				
	Post-office	Good	✓		
	Telecommunication Network/ STD booth		✓		
	General Market		✓		
	Shops (Public Distribution System)		✓		
	Panchayat Building	Good	✓		
	Pharmacy/Medical Shop			No	
	Bank & ATM Facility			No	
	Agriculture Co-operative Society			No	
	Milk Co-operative Soc.			No	
	Small Scale Industries			No	
	Internet Cafes/ Common Service Center/Wi Fi		✓		
	Other Facility	Yojna	✓		
Suggestions if any:					

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



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

7. Data Collection From Village

Village Base Map Available: Hard Copy/Soft Copy	Soft copy.
Recent Projects going on for Development of Village	Rusuj bamethi Yojna Panchayat mantai away. Yojna
Any NGO working for village development	To provide. sufficient water

8. Additional Information/ Requirement:

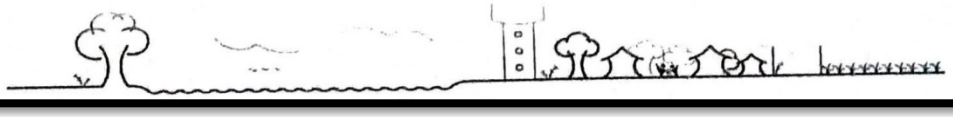
Sr. No.	Descriptions	Information/ Detail	Remarks
1.	Repair & Maintenance of Existing Public Infrastructure facilities(School Building, Health Center, Panchayat Building, Public Toilets & any other)	Health Center School building	
2.	Additional Information/ Requirement	No.	

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 Technical queries/ Difficulties:
Ms Jagruti Shah, OSD
Contact no. 9978980170

For Any Administration queries/ Difficulties
Ms. Darshana Chauhan, OSD
Contact No. 9909944891

Email ID: rurban@gtu.edu.in



12.4 Gap Analysis

Village Facility		Planning commission /UDPFI Norms	Village name	Lapkaman (dist.ahmedab ad)	
Population:1914					
		Existing	Required as per norms	Feature projection design	Gap
Social infrastructure facilities					
Education					
Anganwadi	Each or per 3500population	2	2	-	0
Primary school	Each per 3500 population	1	1	-	0
Secondary school	Per 7500 population	0	0	-	0
Higher secondary school	Per 15000 population	0	0	-	0
College	Per 1,25,000population	0	0	-	0
Tech. training institute	Per 1,00,000 population	0	0	-	0

Agriculture e research center	Per 1,00,000 population	0	0	-	0
Skill development center	Per 1,00,000 population	0	0	-	0
Health facilities					
Government / pnachanay at dispensary or sub.phc or health center	Each village	0	1	-	-1
Primary health and child health center	Per 20000 population	0	0	1	0
Child welfare and maternity home	Per 10000 population	0	0	-	0
Multi specialties s hospital	Per 1,00,000 population	0	0	-	0

Public latrines	1 for 50 families (if toilet is not there in home ,specially for slum pockets and Kutcha house)	0	1	1	-1
Physical infrastructure facilities					
Transportation			adequate		
Pucca village approach road		Each village	Adequate	10km approach road	
Bus/ auto stand provision		All village is connected by PT (ST bus OR auto)	In adequate	No pick up stand available(connected by ST bus , auto ,AMTS)	
Dirking water (mini. 70 lpcd)			adequate		
Overhead tank		1	30000lit		
U /G sump		0	0		
Drainage network-open			Inadequate		
Drainage network- cover			Inadequate		
West management system			Inadequate		
Socio- culture infrastructure facilities					
Communities hall	Per 10000 population	0	0	-	0

Comunitiyhall and public	Per 15000 population	0	0	-	0
Library					
Cremation ground	Per 20000 population	0	0	-	0
Post office	Per 10000 population	1	0	-	1
Grampanchayat building	Each individual /group	1	1	-	0
APMC	Pre 1,00,000 population	0	0	-	0
fire station	Pr 1,00,000 population	0	0	-	0
Public garden	Per village	0	0	0	0
Police post	Pr 40000 population	0	1	-	-1
Shopping mall			shops are available		
	Electrical D design				
	Electricity network		Adequate		
Any smart village facilities					
Technology					
			ESR CAP	0	
			Sump cap	0	

	Lat	0

Table: Gap analysis

12.5 Summary of all villages design as part 1 and part 2 in table format

Design		
	Part – 1	Part- 2
1	Higher Secondary School	Community hall
2	Public garden	Library
3	Bus stand	
4	Hospital	

12.6 SUMMARY OF PUNSARI VILLAGE


ભારતીય સ્ટેટ બેંક


PUNSARI PRIMARY SCHOOL

Summary of Akodara village


MTA
આઈસીઆઈસીઆઈ બેંક
ICICI Bank
ATM

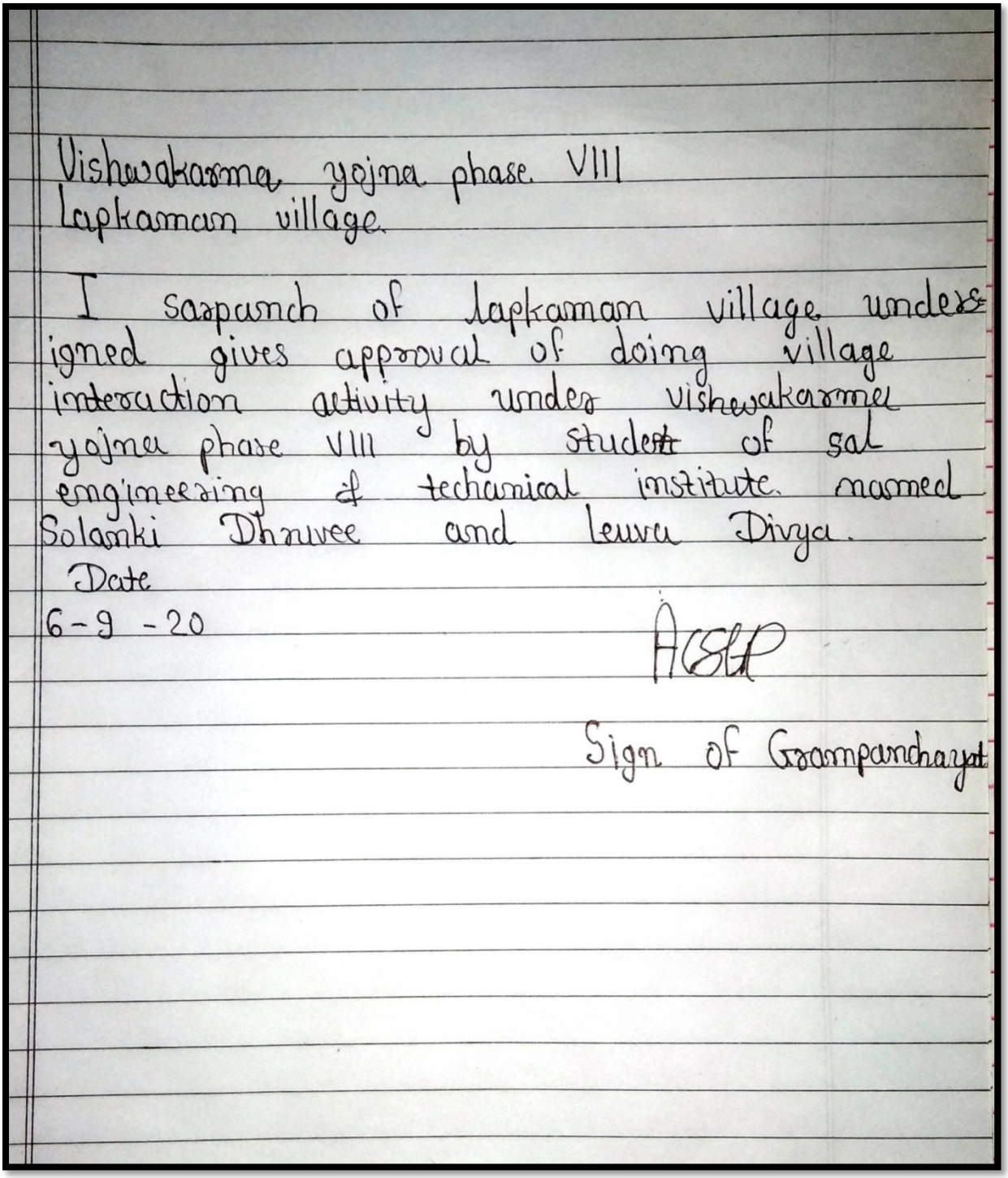

જિલ્લા પંચાયત
આયુર્વેદ દવાખાનું
DIGITAL

Summary of Lapkaman village


airtel
4G


ભગવતી
પ્રોવિઝન સ્ટોર્સ
વાઘબકરી ચા
મનભાવન રંગ • મનમોહક સુગંધ
STD

- Village Interaction with Sarpanch/Talati Report with the photograph :



Vishwakarma yojna phase VIII
Lapkaman village.

I saspanch of lapkaman village undersigned gives approval of doing village interaction activity under vishwakarmer yojna phase VIII by student of sal engineering & technical institute. nameed Solanki Dhruvee and Leuva Divya.

Date
6-9-20

Sign of Grampanchayat

Sarpanch Letter giving information about the village development :

Approval Letter for Proposed Designs approval:

Vishwakarma yojna phase VIII
lapkaman village

Subject : Approval of design proposal for lapkaman village

I sarpanch of lapkaman village undersigned gives approval for following main design proposal given under vishwakarma yojna phase VIII by student of sal Engineering & technical institute named Solanki Dhruvi and Levva Divya

Approved main Design proposal as of part-1

1 Hospital
2 Bus stand
3 High school
4 Public Garden

Date :-20-10-20

Sign of Grampanchayat