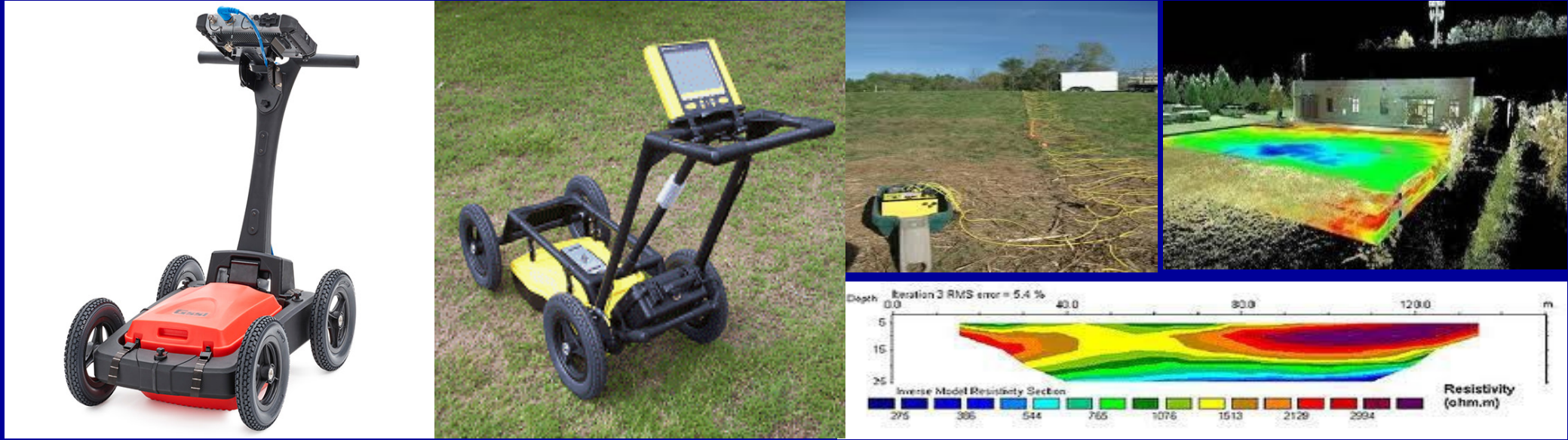


Epitome Geotechnical Services Pvt. Ltd.



Offices:

Corporate Office:
C-60, 1st Floor, C-Block,
Sector-63, Noida-201301

Regd. Office:
156, near NXT hotel, Block-A,
Sector-53, Noida-201301

Agenda



Company Background

Services Offered

Electrical Resistivity Imaging /GPR Services

Business Model

Assets

Why We ?

Epitome Geotechnical Services Pvt. Ltd.

Epitome Geotechnical Services is a private limited company, founded by Mr. R. P. Singh (Managing Director), the major shares holder of the company and Mr. P. K. Baliyan (Head-Business Services) Mr. Baliyan is M.Sc (M.Tech) from Banaras Hindu University in the subject of Geophysics. He himself has extensive experience in field of Earth science & possess strong business acumen. The management possess a strong vision to take the company to new heights. The word EPITOME represents perfection which is the soul of the business and shows the commitment of the Managing Director in achieving perfection & delivering excellence. The Team “EPITOME” is travelling new distances every-other day under the strong leadership of Mr. Baliyan.

Epitome Geotechnical Services Pvt. Ltd.

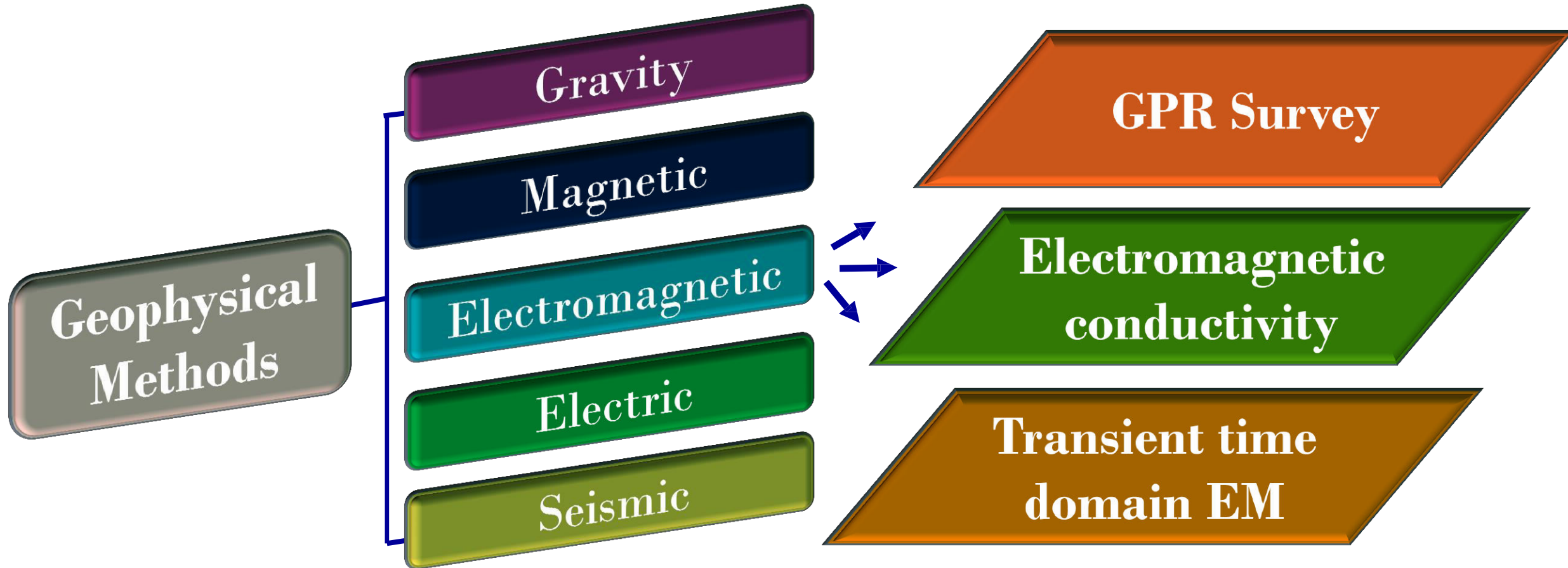


Long Term
Relationship

The Company was established in the interest of fulfilling the need & continuously increasing demand of Electrical resistivity Imaging /GPR/Digital mapping & GIS projects.

- The Company mainly deals in following activities:
 - ❖ **Electrical Resistivity Imaging/Resistivity Survey/Ground Water Survey:** Measurement of bedrock & water table depth and defining saline water incursion.
 - ❖ **GPR & GIS:** Detection of underground utilities by SUE Methodology & data transformation to GIS platform.
 - ❖ **Topographical Surveys & DPR preparation:** Total Station, GIS mapping & other land surveys along with DPR preparation
 - ❖ **Seismic Refraction survey:** Geophysical information about the weathered layer below earth surface i.e., density, compaction, hardness, velocity change & thickness of covered layers
 - ❖ **X-hole seismic:** Geological or stratigraphic correlations
 - ❖ **Hydrographic/Bathymetric Survey**
- The business goal is to provide high quality services in a cost effective & time bound manner to establish a long term business relationship with our clients.

Methods Used



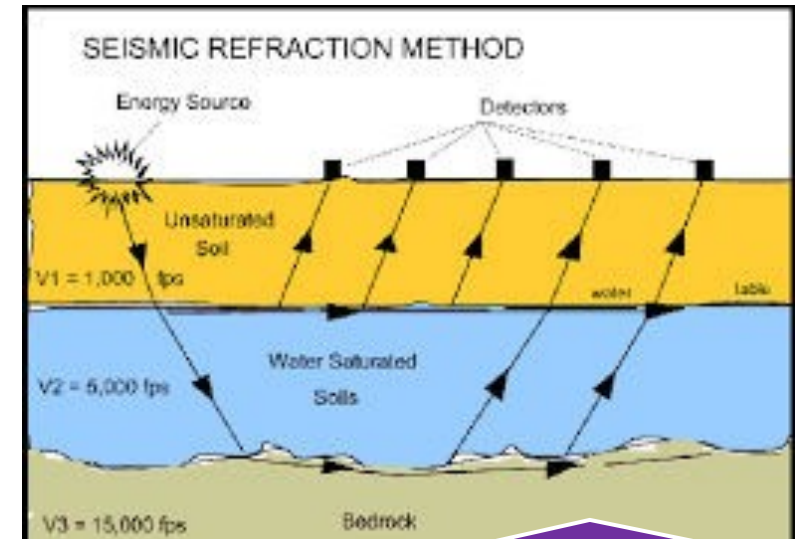
Services Offered



GPR Survey &
Topography Survey

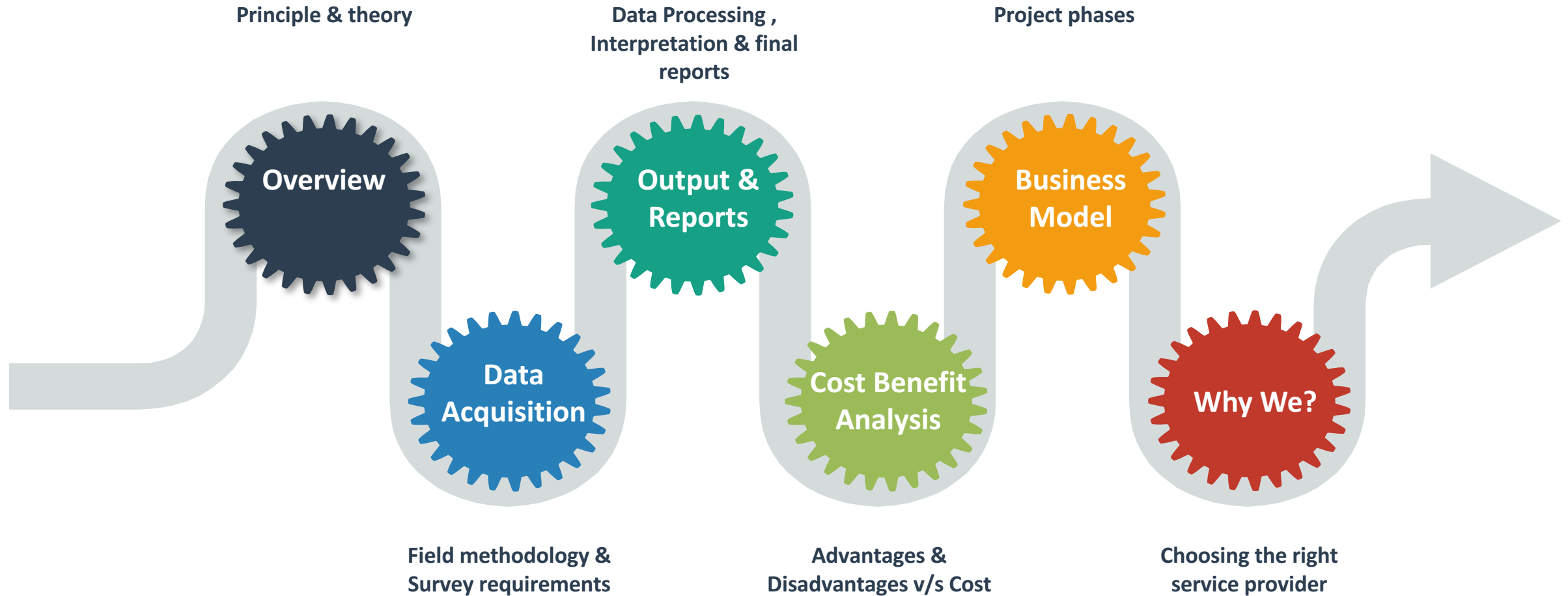


Electrical Resistivity Survey



Seismic Refraction
Survey

Business model



Electrical Resistivity Imaging

Introduction

Electrical resistivity tomography (ERT) is a popular geophysical subsurface-imaging technique and widely applied to mineral prospecting, hydrological exploration, environmental investigation and civil engineering, as well as archaeological mapping. Different electrode arrays are used as per required depth of investigation. The Basic steps are as follow;

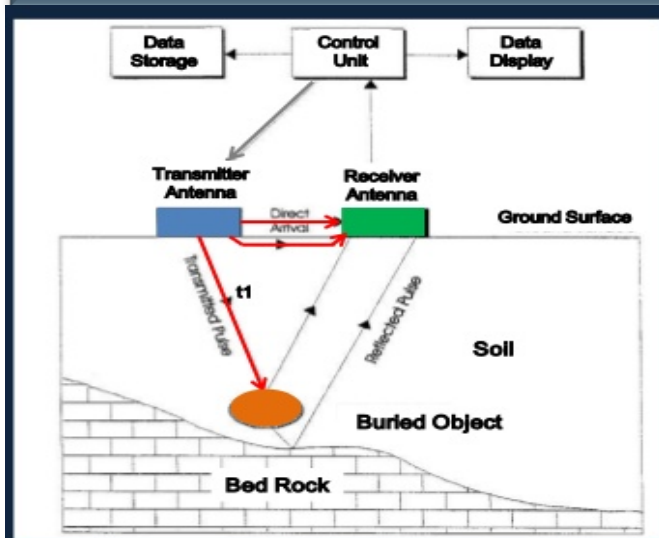
- Data acquisition
- Data Processing
- Data Interpretation & Report Preparation

Ground Penetrating Radar Services (GPR)

- A high resolution Electromagnetic wave is sent into ground using transmitting antenna. Wave hit the object and get scattered back which is being detected by a receiving antenna.
- The velocity (V) of EM wave with in a material is is proportional to the inverse square root of the permittivity or dielectric constant(ϵ) of the material.

$$V \propto \frac{1}{\sqrt{\epsilon}} \quad \& \quad \text{Depth of penetration} \propto V$$
- A signal passed through two materials with different electrical properties over the same distance arrive at different times

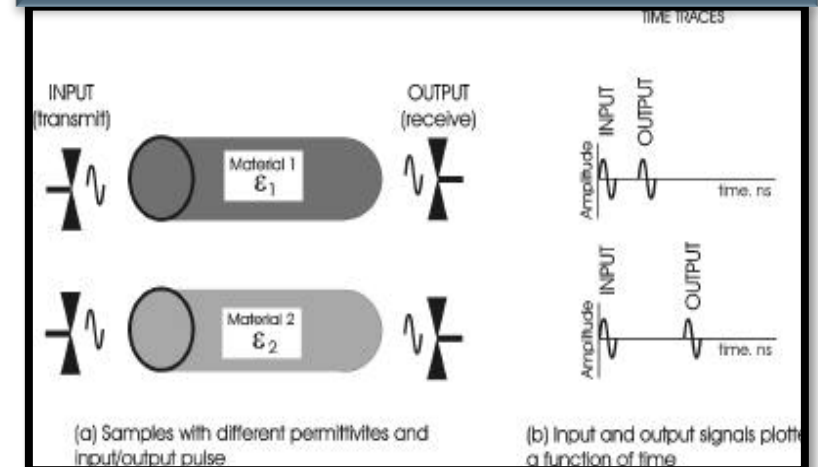
GPR Principle



Dielectric constant of common materials

Air	1	Sand	4-6
Water (fresh)	81	Gravel	4-7
Ice	4	Clay	25-40
Asphalt	4-8	Silt	16-30
Concrete	8-10	Silty sand	7-10
Crushed base	6-8	Insulation board	2-2.5

Signal plotting v/s Time



Ground Penetrating Radar Services (GPR)

- Depth of penetration of GPR is controlled by centre frequency, the electrical conductivity and the attenuation of the subsurface deposits

Frequency (MHz)	Sample Applications	Max Penetration Depth (ft.)
2600	Concrete, Roadways, Bridge Decks	1
1600	Concrete, Roadways, Bridge Decks	1.5
900	Concrete, Shallow Soil, Archaeology	3
400	Shallow Geology, Utility Locating, Environmental, Archaeology	9
200	Geology, Environmental	25
100	Geology, Environmental	60

Ground Penetrating Radar Services (GPR)



WHAT ?

Radar system investigate subsurface to detect buried objects



HOW?

GPR uses radiowaves to penetrate the ground. It can be employed from the service by hand or vehicle



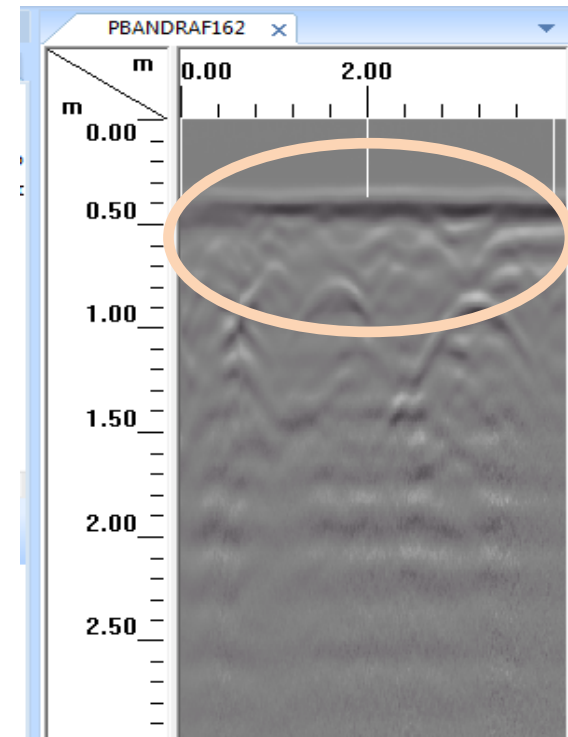
WHY?

Getting information on the buried artifacts using low cost to make business decisions

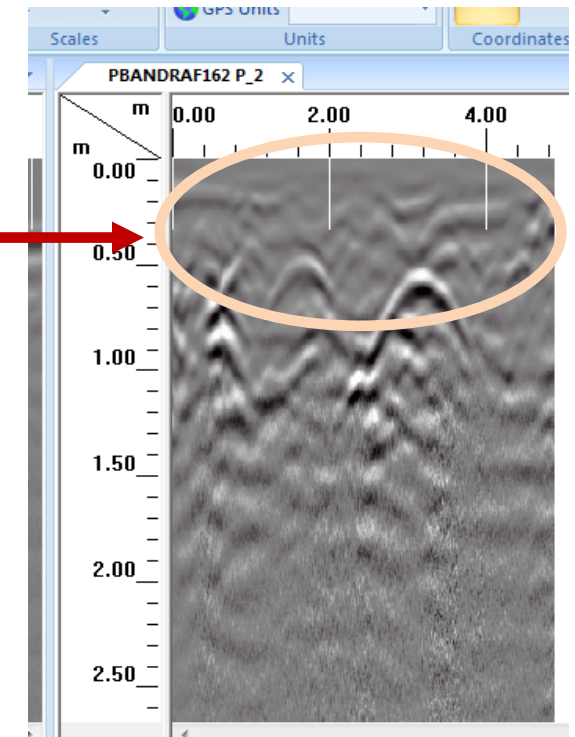


Processing steps using RADAN

- Background removal
- Data gain
- Data filtering
- Color conversion
- Migration
- Transformation
- Velocity Analysis

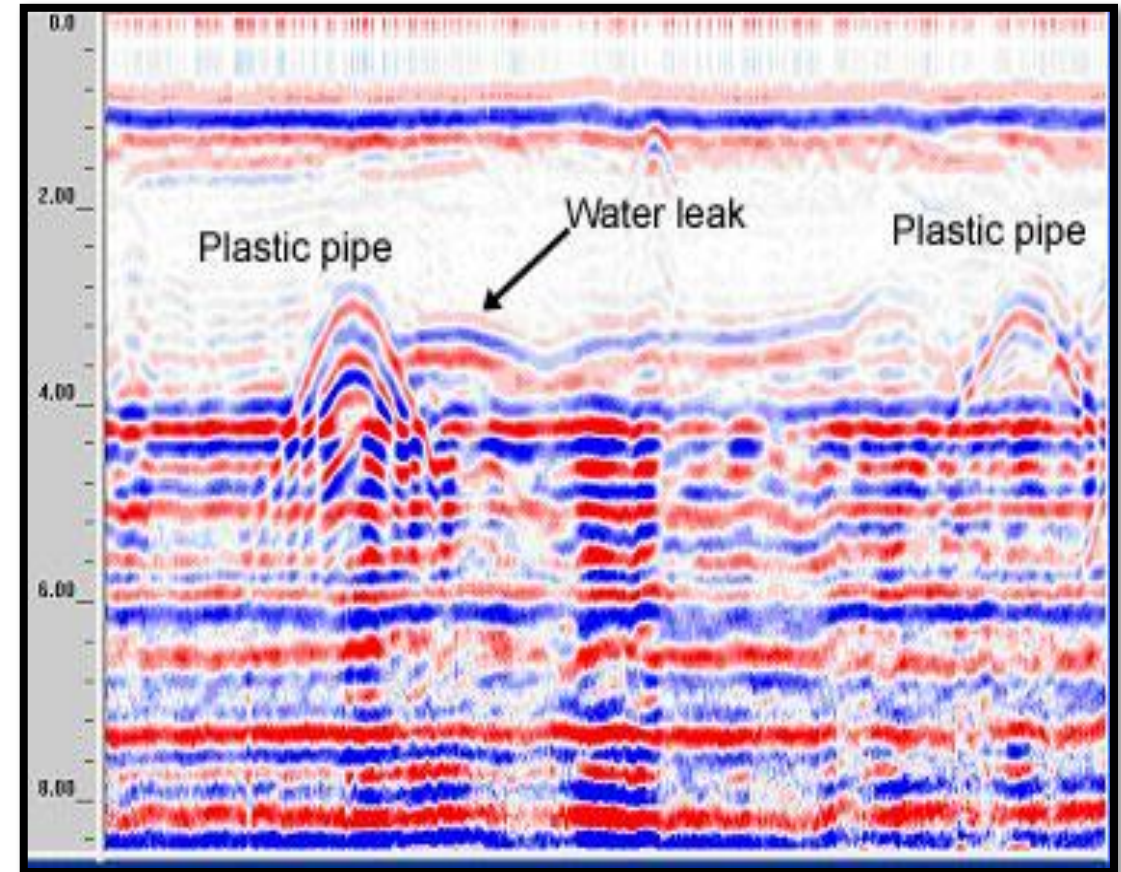
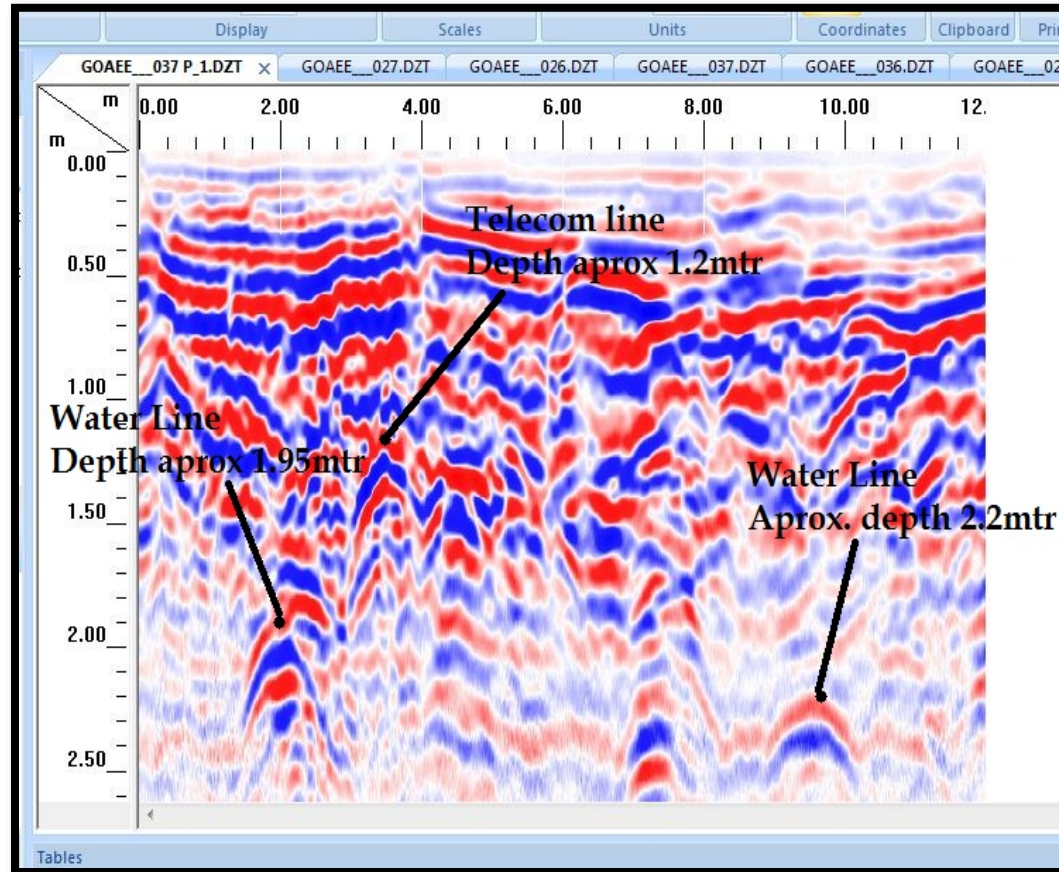


Pre-processing



Post-processing

Ground Penetrating Radar Services



- Signatures for different utilities like telecom line, OFC Cables, Water line etc. identified
- Depth of utilities estimated on the final processed section
- Diameter of utilities can be taken from the historical data

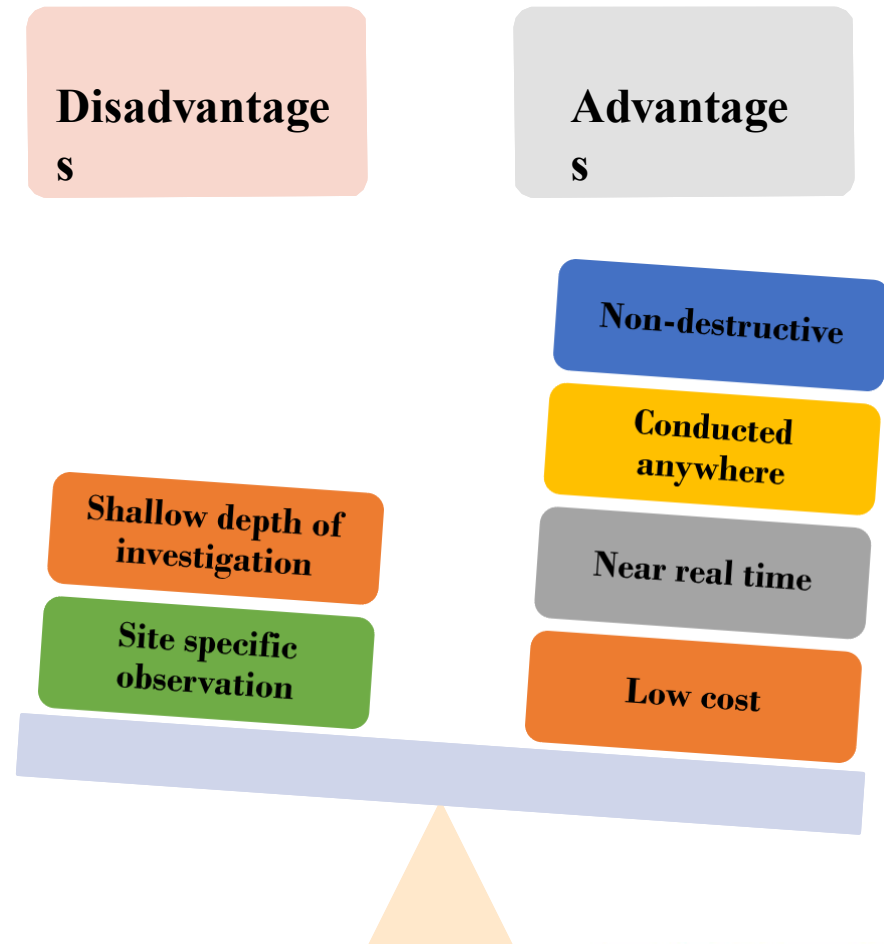
Ground Penetrating Radar Services

Detect buried artifacts such as:

- ✓ Hazardous waste containers
- ✓ Underground subsurface Utilities Mines
- ✓ Sinkholes
- ✓ Landfill & burial trenches
- ✓ Cemetery & grave sites
- ✓ Archeological studies

Civil Engineering applications:

- ✓ Detect cracks & voids in bridges,dams etc.
- ✓ Railroad track substructure monitoring



Ground Penetrating Radar Services

Disadvantages

Shallow depth of investigation

Site specific observation

Advantages

Non-destructive

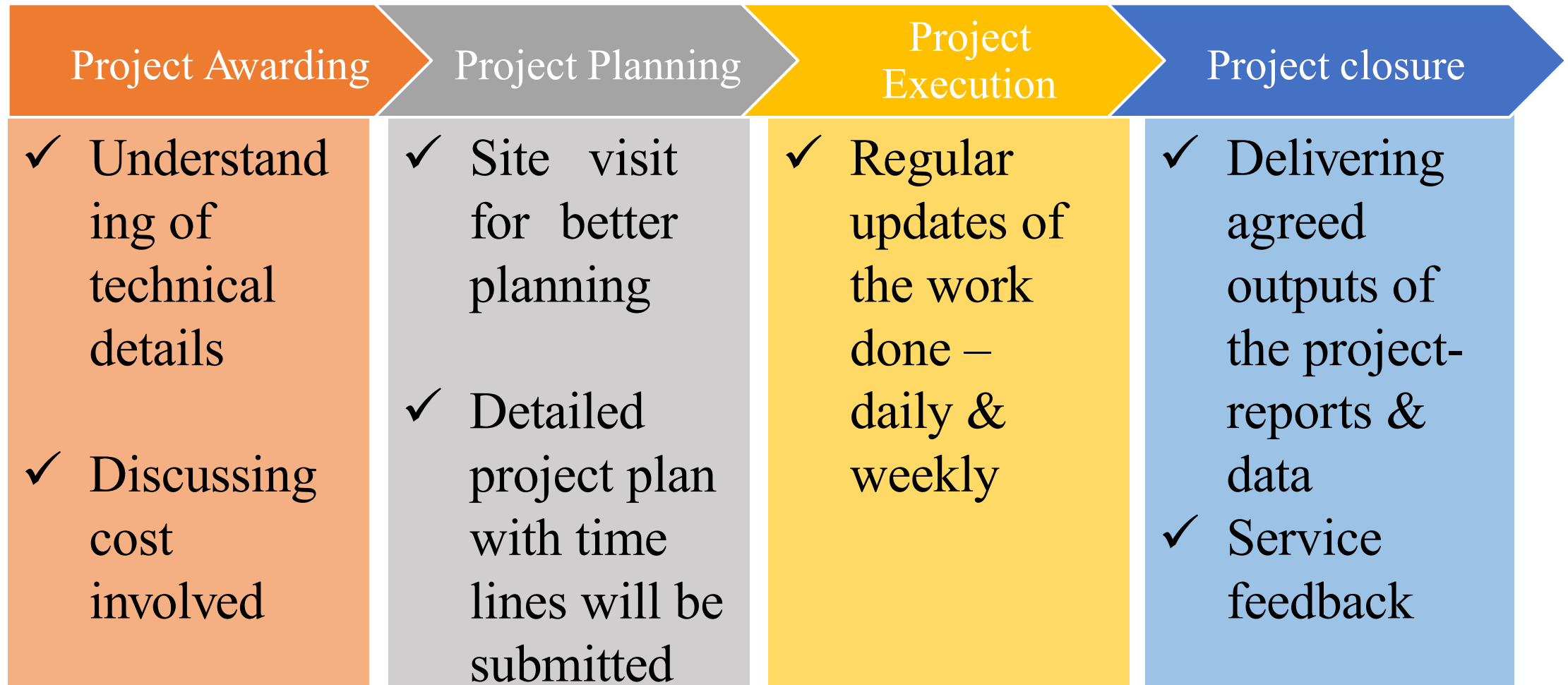
Conducted anywhere

Near real time

Low cost

Looking at advantages GPR technique give a high resolution detail of shallow depth objects that are not visible to human eye

Business Model



Assets...

GPR Services:

Equipment: GSSI
Softwares: RADAN-7

Topographical Survey

Equipment: Total Stations, DGPS, Digital Level, Auto Level
Software: AutoCAD, ArcGIS

Resistivity Equipment: **WDJD-4 Multi-function Digital DC Resistivity/IP equipment**

Software: **GD-10 Series Geo-electrical System Resistivity/IP**

Seismic Refraction **equipment**

Equipment: **RES2DINV, IP2WIN**

Software: **SEISTRONIX RAS24 RAS24**

A professional Technical Team

Assets

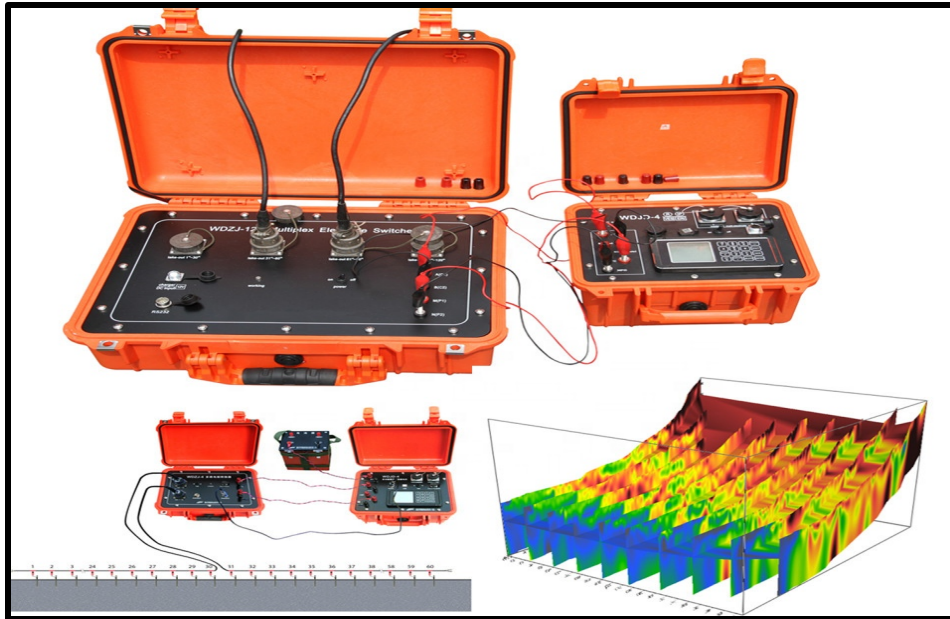
Skilled technical staff in back office, having range of work experience to deliver the quality work

Potential field surveyor for data acquisition

Capability of handling multiple projects simultaneously whether its about equipments or quality man power

Employment- On payroll and Contract both

Assets : Resistivity Instrument



**WDJD-4 Multi-function Digital DC
Resistivity/IP
Resistivity/IP Equipment**



**GD-10 Series Geo-electrical System
Equipment**

Assets: GPR Equipment



GSSI 350 HS



GSSI SIR 3000/4 Wheel



GSSI SIR 3000/3 & 4 Wheel



Sensor & Software- Noggin 250



GSSI- Structure Scan
Mini LT 2700 MHz



GSSI- Structure Scan
Mini LT 1600 MHz



GSSI- SIR Controller



GSSI- Toughbook
Display

Why We?

Technical

- Advance softwares & equipment's
- Professional technical team
- Properly planned & detailed discussions on project execution at regular intervals

Financial

- Timely delivery of project
- Cost effective solution

Quality Service

- Detailed reports during & at the end of the projects
- Discussion on key issues with the management & technical team
- Approachable support team

Recent ERT,GPR & GIS Projects Delivered & Running...

- Electrical Resistivity Tomography Survey at Headworks Site of Melamchi Water Supply Project for POYRY-Hifab.
- Feasibility study for assessment of Groundwater Potential at Tumlingtar, Sankhuwasabha Nepal for SJVN Arun-3 Power Development Company Pvt. Ltd (SAPDC) an undertaking of Government of India
- GPR Survey for L &T in Kathmandu, Nepal for detection of underground utilities.
- GPR & GIS project for entire Chandigarh City under the mission of Smart City
- GPR Survey for L& T in Delhi under Delhi Jal Board
- GPR Survey project for Steel Authority of India Limited (SAIL) in Rourkela Steel Plant
- Geophysical Investigation using Electrical resistivity survey (IP) for prospects of Copper Deposits at Bamangaon, Ddadeldhura for Global Minerals Pvt. Ltd, Kedia Organisation India.

Recent ERT/GPR & GIS Projects Delivered & Running...

- GPR survey at Kolkata airport for Naagar Infrastructure Private Limited for Airport Authority of India
- GPR survey at Lucknow Airport for Naagar Infrastructure Private Limited for Airport Authority of India
- GPR survey in Gurugram for DHBVN for Gurugram Smart City
- GPR survey in Ujjain for Tata Projects Limited under AMRUT
- GPR survey in Nagpur for Sterling & Wilson for Nagpur metro Project
- Electrical Resistivity Survey for Prospects of Ground Water at Bhakundebesi, Kavreplanchowk for 26 Bridge , Nepal Army, Government of Nepal
- Electrical Resistivity Survey for Prospects of Ground Water at Koilabas , Dang for Ground Water Resources Development Board, Ministry of Irrigation, Government of Nepal
- Geophysical Investigation using Electrical Resistivity Survey for Prospects of Ground Water at Thankot, Kathmandu for Nir Drilling Company Pvt. Ltd

Recent ERT/GPR & GIS Projects Delivered & Running...

- GPR & Topographical survey in Gangapur City, Rajasthan for sewerage work for L&T under AMRUT
- GPR & GIS project in Jhunjhunu, Rajasthan for sewerage work for L&T under AMRUT
- Resistivity, GPR & Seismic survey in Ponda, Goa for sewerage work for M/S Annu Infra Construct India Pvt. Ltd.
- GPR survey in Porvorim, Goa for sewerage work for M/S Rock Drill Projects Pvt. Ltd.
- Resistivity, GPR & Seismic survey in Ponda, Goa for sewerage work for M/S Rock Drill Projects Pvt. Ltd.
- GPR survey in Delhi for OFC for M/S Subha Technical Services Pvt. Ltd.
- GPR survey in Noida for Sewerage work for M/S Transline Infra Pvt. Ltd.
- GPR survey in IOCL Mathura Refinery for IOCL (Indian Oil Corporation Limited)
- GPR survey in Mumbai for construction network (M/S Seawood Estates Pvt. Ltd.)
- Resistivity, GPR & Seismic survey in Navelim, South Goa for Sewerage for M/S Vindhya Telelinks Pvt. Ltd. **(Birla Group)**
- GPR survey in Jaipur, Rajasthan for ROBs work for M/S Theme Engineering Services Pvt. Ltd.
- Resistivity, GPR & Seismic survey in Porvorim, North Goa for sewerage plan for M/S Rock Drill

Recent ERT/GPR & GIS Projects Delivered & Running...

- Resistivity, GPR and Seismic survey in Colva-Phase II, South Goa for sewerage plan M/S Rock Drill Projects Pvt. Ltd.
- Resistivity, GPR & Seismic survey in Colva-Phase III, South Goa for sewerage plan M/S Rock Drill Projects Pvt. Ltd.
- Resistivity, GPR & Seismic survey in Navelim, South Goa for sewerage plan for M/S Rock Drill Projects Pvt. Ltd.
- GPR survey in Wazirabad, New Delhi for Water Treatment Plant for Jainco Pvt. Ltd.
- GPR survey in Noida, Uttar Pradesh for OFC lay out
- Resistivity, GPR & Seismic survey in Ponda, South Goa for Sewerage for M/S Vindhya Telelinks Pvt. Ltd. **(Birla Group)**
- Resistivity, GPR & Seismic survey in Ponda, South Goa for Sewerage Scheme M/S Tejman Infrastructures Pvt. Ltd.
- Resistivity, GPR & Seismic survey in Ponda, South Goa for Sewerage scheme for M/S Annu Infra Construct India Pvt. Ltd.
- GPR survey in Noida for M/S Transline Infra Pvt. Ltd.

Recent ERT/GPR & GIS Projects Delivered & Running...

- GPR Survey in Bhopal for Tata Projects Limited under AMRUT
- GPR survey in Indore for Gopi Construction for Indore Smart City
- GPR & GIS project in Gururam for Tata Project Limited & DHBVN for Gurugram Smart City
- GPR & GIS project for Geo-Infosys for Faridabad Smart City.
- GPR & Topographical survey in Chittorgarh, Rajasthan for sewerage work for Tata Projects Ltd. under AMRUT.
- GPR & Topographical Survey in Chandigarh under smart city project scheme for Egis International (MNC)
- GPR survey at IGI airport Shivam Surveying System Pvt Ltd.

Recent ERT/GPR & GIS Projects Delivered & Running...

- GPR survey in Lucknow, UP for Lucknow Metro Project for Larsen & Tubro (L&T)
- GPR & Topographical survey in Amritsar for Nandini Impex Pvt. Ltd.
- GPR Survey for Indira Gandhi center of Atomic research (IGCAR), Kalpakkam
- GPR Survey for AMNEX Info-technologies in Indore under the mission of Smart City
- GPR Survey for L&T in Gurugram under the mission of Gururam Smart City
- Resistivity, GPR & Seismic Survey in Goa, for M/S Annu Infra construct India Pvt Ltd.
- Resistivity, GPR & Seismic Survey in Goa for Creative Infra
- GPR Survey in Bengaluru for L&T

Yes to Us



Thank You

Epitome Geotechnical services Pvt. Ltd.