



**Monarch Surveyors &  
Engineering Consultants Ltd.**



## **INTELLIGENT INFRA DATA, ANYWHERE**

**Geospatial Intelligence: Delivered on Your Device**

**Monarch Surveyors & Engineering Consultants Ltd.**  
provides intelligent geospatial solutions for  
planning, decision-making, and execution



[www.monarchconsultants.in](http://www.monarchconsultants.in)

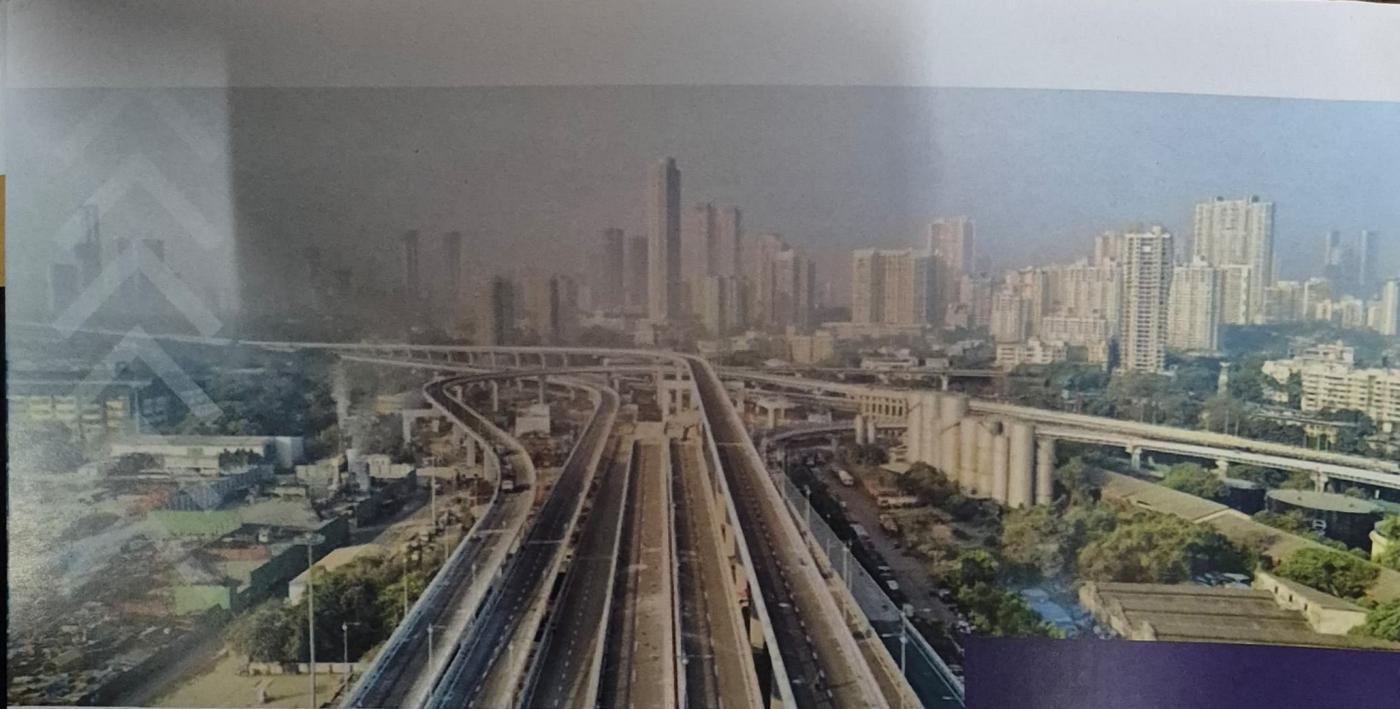
**25000** sq. km

High-accuracy geospatial  
mapping delivered

**700+** sites

Drone, LiDAR & GIS  
surveys across India





## ABOUT US

Monarch Surveyors & Engineering Consultants Ltd. is a leading publicly-listed company specializing in LiDAR surveys, detailed project reports, engineering design, and land acquisition. With over 30 years of experience, we deliver comprehensive infrastructure solutions across Railways, Roads, Metro, Urban Planning, Geospatial Mapping, Land Acquisition, Water and Energy.

## SECTORS

- **Transportation Road & Rail, Port**
- **Urban Plan & Design**
- **Geospatial Consulting**
- **Building & Architecture**
- **Water & Energy**

### Equipment (Field & Lab)

- UAV Drones: DJI Matrice 300 RTK, Phantom 4 RTK
- LiDAR Systems: Riegl VUX-1UAV, Velodyne HDL-32E
- GNSS/DGPS: Trimble R12i, Leica GS18 T
- Total Stations: Leica TS16, Sokkia CX-105
- Mobile Mapping Units: Trimble MX90
- Aerial Cameras: Phase One iXM-100, Sony A7R IV
- GIS & Processing Software: ESRI ArcGIS Pro, QGIS

### Our Software & Platforms

- Processing & Mobile Mapping: Trimble TBC, MK Publisher, Quantum for alignment studies
- GIS & Spatial DB: ArcGIS Pro/Enterprise, QGIS, PostGIS, GeoServer, Global Mapper
- CAD & BIM: AutoCAD, Civil 3D, Revit & Navisworks (LPF/LOD 200-350)
- AI Dashboards & Web: Python/PyTorch for GeoAI, Power BI, Desium, Mapbox, Leaflet
- Data Governance: On-prem / cloud deployment, versioned geo-databases

# WHAT WE DELIVER



## Surveys & Acquisition

- LiDAR capture (drone, airborne, mobile)
- Aerial photogrammetry & ortho-imagery
- GNSS/RTK ground control & topo survey
- Bathymetric & hydrographic mapping



## Data Engineering

- Point-cloud processing & data extraction
- Orthomosaic, DEM/DSM & contour
- GIS database build-out & spatial analytics
- 3D digital-twin & terrain modelling



## Solutions & Applications

- Corridor & route optimisation
- Asset inventory & condition assessment
- Smart-city & utility network mapping
- Environmental, risk & climate modelling



## Advisory & Compliance

- Cadastral support & land acquisition data
- Survey standards, QA/QC audits
- Regulatory documentation & permits
- Training, capacity-building, tech transfer

# MARQUEE PROJECTS



## Urban Planning & Governance

- Pune Metropolitan Region Development Authority (PMRDA) – 7,356 km<sup>2</sup> LiDAR base map + GIS portal
- Nagpur Municipal Corporation – 226 km<sup>2</sup> existing-land-use & contour update
- Guwahati Metropolitan Development Authority, Assam – 486 km<sup>2</sup> drone-LiDAR GeoHub
- Amravati Municipal Corporation – 122 km<sup>2</sup> development-plan / ELU mapping
- UT Administration of Ladakh (DILRMP) – 2,600 km<sup>2</sup> cadastral modernisation across all villages



## Digital Twin & 3-D Modelling

- 4D BRiM Bridge Digital Twin, North Western Railway – Jaipur Division: 50 + rail bridges scanned (drone + terrestrial) → 4 D twins
- Resort Madh & Ahura Centre, Mumbai + Prem Hotels, Pune: five properties, high-res point clouds → Revit twins
- Power Grid Corporation of India Ltd – multi-state 400 kV network: ~3,000 km lines, sag-clearance analytics



## Asset Mapping & Inventories

- Maharashtra State Road Development Corporation – Samruddhi Marg Expressway: 701 km mobile-LiDAR asset GIS
- Maharashtra Metro Rail Corporation Ltd – Pune Metro: 70 km corridor, 40 stations geo-tagged, GIS asset inventory
- Power Development Dept., Leh & Kargil Divisions: 3,800 km HT/LT network geo-tagged & mapped



## LiDAR & Drone-Survey Flagships

- Government of Maharashtra – Entire Coastline: 720 km airborne LiDAR vulnerability survey
- Mumbai Metropolitan Region Authority – Rivers & Drains: 200 km hydro-topo drone LiDAR for flood modelling
- Nationwide Corridor Programme – Trimble MX-90 mobile LiDAR: 2,000 lane-km high-density scans
- In-house Airborne/Drone Fleet: > 5,000 km<sup>2</sup> DSM/DEM production each year

Showcasing at GeoSmart India 2025



## MONARCH'S EDGE

- In-house advanced technology and resources
- Ethical and customer-focused approach
- Footprints across India and abroad
- Bringing in-depth local insight and the partnership that needs to move forward



Trustworthy



Persistent



Ethical



Customer-centric

Monarch is an ISO 9001, ISO 14001, ISO 27001, ISO 45001 and CMMI Level 3 Certified Company

## OUR CLIENTELE



Pune Municipal Corporation



PUNE METROPOLIS



Scan to explore our Aerial LiDAR Capabilities



Scan to see the video profile



## CONTACT US

Monarch Surveyors & Engineering Consultants Ltd

CTS No 434/1, B.T. Kawade Road, Ghorpadi, Pune 411036, India.

Email: gmprojects@monarchpune.in

Phone: +91 9766624705 | +91 9970400678



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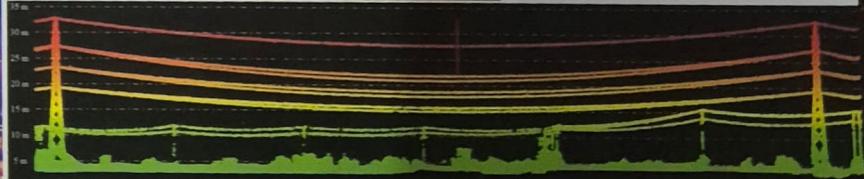
DELIVERING  
EXCELLENCE  
WITH **TRUST**  
OVER **3 DECADES**

**32** + Years' Experience

**150** crore + Turnover

**600** + Projects Delivered

**550** + Skilled professionals in diverse specialities



OFFICES:

 Pune  
Monarch House, Survey no 50/2A,  
B. T. Kawde, Ghorpadi, Pune- 411036

 Mumbai

 Delhi

 Guwahati

 Nagpur

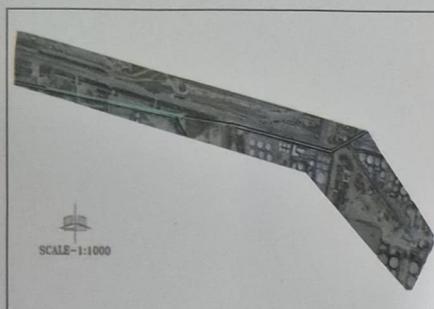
# LIDAR (DRONE / AIRCRAFT / MOBILE / STATIONARY) SURVEY

## Generates dense 3D Point Cloud of the Transmission Line Network

- Route Mapping with all nearby assets in engineering precision
- Allows vegetation monitoring **Sag height calculation**

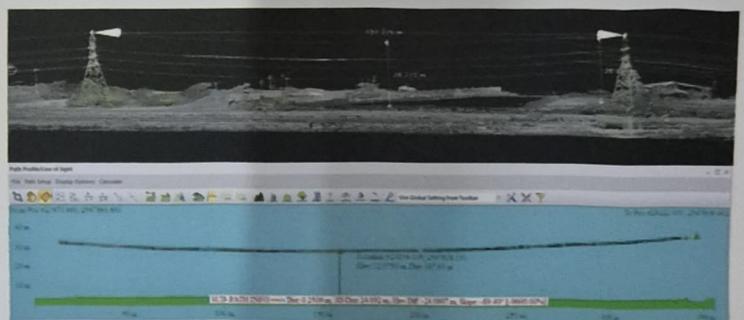


## High-resolution videography (eagle-eye view)



## Thermal sensors for inspection of power line, tower & insulators -detecting defects, cracks & missing assets

Can identify potential defects and faults such as broken or chipped insulators



## OUTPUTS

- **Point Cloud:**  
For real-time analysis of structure elevation levels e.g. bridges, poles, trees, buildings, etc.  
Volumetric Analysis
- **Orthomosaic, DSM,DEM,DIM:**  
(GeoTIFF) 2D model map made by blending several photos. Color-balanced to be visually pleasing.  
High-resolution Map (Resolution 2cm onwards)  
For layer-wise digitization of physical structures (Annotation & Measurement)
- **Feature Extraction & Precise Measurements**  
Feature Extraction to Create land parcel maps of Govt. lands in separate layers for Village Boundary, Habitation Boundary, Govt. Lands and private lands, basic topo detail i.e., water bodies, roads, trees, culverts etc.,



# DIGITISATION & SUPERIMPOSITION OF LAND RECORDS

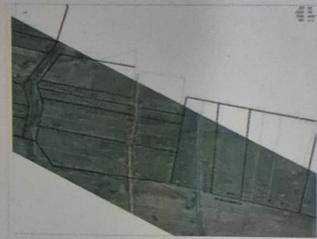
Collection & Superimposition of records such as Record Of Rights (ROR), Mouza Maps etc. as available in concerned revenue office.



## OUTPUTS

### • Land Plan

Final deliverable of the project is the planned alignment of the transmission line superimposed over the Drone Ortho-mosaic basemap with the land record details marked on it



# LIVE LINE INSPECTION

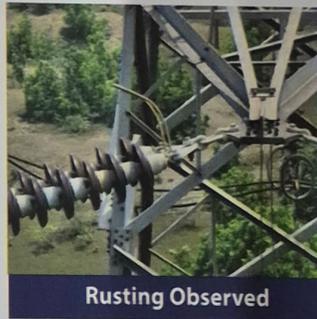
## OUTPUTS

### • Photogrammetry:

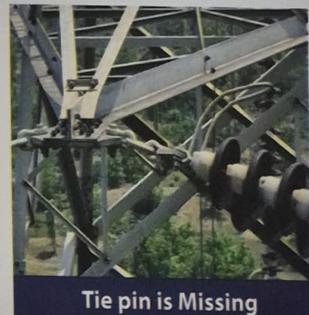
- Individual Tower Video
- Tower Inspection Photos
- Tower Inspection Report & Analysis

### • Thermal:

- Tower Inspection Report Thermal
- Transmission Line Images and Videos



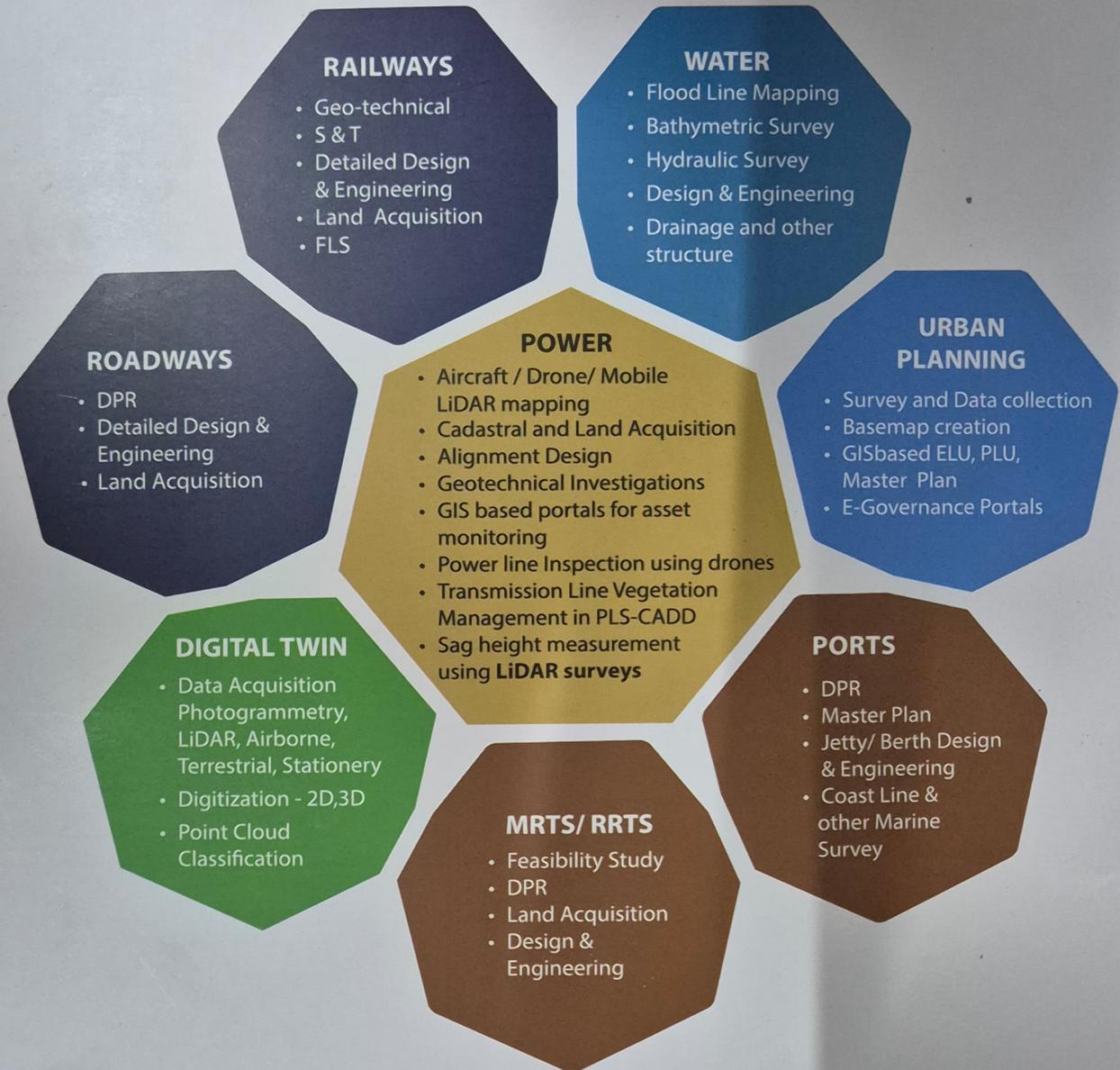
Rusting Observed



Tie pin is Missing

## Our Clientele....





In-house advanced technology and resources

Ethical & Customer focused

Footprints in PAN India & Aboard

Your local partner in progress with deep knowledge of social atmosphere.

CONNECT WITH US

[www.monarchconsultants.in](http://www.monarchconsultants.in)

Email : [connect@monarchpune.in](mailto:connect@monarchpune.in)

Phone : +91 9766556746



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