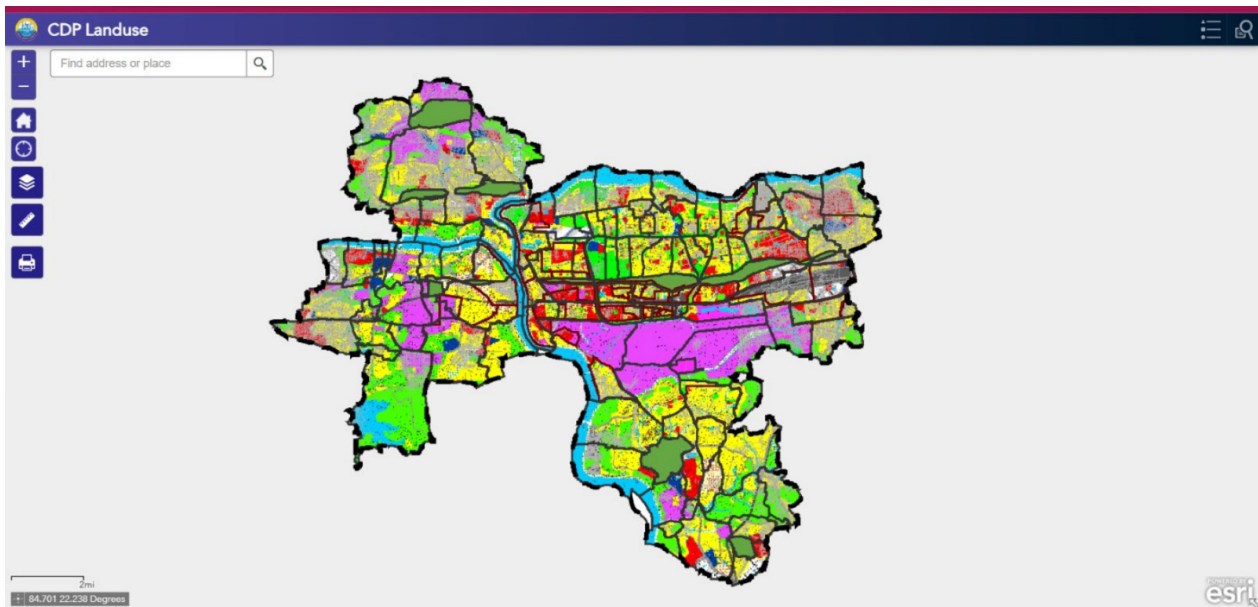


A Collaborative GIS-Based Urban Management Solution for Rourkela Municipal Corporation



Emitech Infosystems Pvt. Ltd. collaborated with Esri India to deploy a GIS-based solution for the Rourkela Municipal Corporation (RMC). The solution aimed at improving urban management through streamlined data collection, visualization, and analysis. It focused on leveraging GIS for addressing urban challenges and empowering municipal authorities with robust tools for sustainable development.

GIS-based Building Information Management System

The system creates a single, geo-referenced digital record of all buildings in the city, where physical attributes, ownership details, land use, approvals, and compliance data are linked directly to their spatial location. This allows the municipal officials to move away from fragmented paper records and work with an integrated map-based view of the city, making information easier to access, verify, and update. As a result, building permits and development approvals become faster and more transparent, since zoning regulations,

floor area ratios, setbacks, and height restrictions can be checked instantly against mapped data, while unauthorized constructions can be identified more efficiently.

The system is also significantly helping in improving disaster preparedness and emergency response by enabling authorities to quickly locate vulnerable or high-risk buildings, critical facilities like hospitals and schools, and optimal access routes during fires, floods, or earthquakes. When building information is linked with utility networks such as water supply, sewerage, electricity, and roads, municipalities can plan maintenance more proactively, reduce service disruptions, and manage infrastructure assets more effectively.

The GIS-based building information management system also strengthens property tax assessment by accurately capturing building footprints, usage, and expansions, helping identify under-assessed or unregistered properties and thereby increasing municipal revenue without raising tax rates. It streamlines property management by integrating mobile

geospatial survey tools with a centralized administrative dashboard for data-driven oversight. It bridges the gap between field-level building data collection and real-time financial and analytical reporting.

In urban planning and governance, the GIS-based Building Information Management supports data-driven decisions on density control, land-use optimization, environmental sustainability, and climate resilience. It also enhances transparency and citizen services by enabling public access to building permits, landuse plans, and property information through the portal, thereby improving accountability and trust in municipal administration.

Modules

The various modules in the application include:

1. **Data Collection (Mobile Focus):** This module is built for capturing and modifying spatial and descriptive information directly from the field:
 - a. **Edit Polygon:** Allows users to define or adjust the geographical boundaries and shapes of building plots.
 - b. **Survey Data Collection:** Facilitates the systematic gathering of building-specific information through structured surveys.
2. **Admin Dashboard (Management Focus):** The dashboard provides administrators with tools to monitor operations and analyze collected data:
 - a. **View Data Analytics:** Offers a centralized view of processed information to identify trends and metrics.
 - b. **Plot-wise data viewer:** Enables detailed inspection of information organized by specific building plots.
 - c. **Payment Collection Information Management:** Oversees the financial side of the building management process, tracking and managing payment data.

Through these modules and more, the **GIS-based Building Information Management System** is enabling RMC to deliver more efficient services, improve regulatory enforcement, strengthen financial management, and plan safer and more sustainable cities.

