



CASE STUDY :

BANDICOOT MOBILITY+ AT CHHATRAPATI SAMBHAJI NAGAR(AURANGABAD)

City-Wide Robotic Manhole Cleaning Through Vehicle-Integrated Automation



CLIENT :

Chhatrapati Sambhaji Nagar Municipal Corporation (formerly Aurangabad Municipal Corporation)

LOCATION :

Chhatrapati Sambhaji Nagar (Aurangabad), Maharashtra, India

SECTOR :

Urban Sanitation /
Public Health Engineering

ROBOTIC SOLUTION DEPLOYED :

Bandicoot Mobility+*

*Vehicle-integrated robotic system for remote manhole cleaning.

PROJECT BACKGROUND

To address growing sanitation challenges, including frequent sewer blockages and health risks to workers, Chhatrapati Sambhaji Nagar Municipal Corporation adopted Bandicoot Mobility+ as a modern alternative to traditional manhole cleaning. This vehicle-mounted robotic solution enabled the city to perform safe, fast, and highly efficient cleaning across urban zones.

DEPLOYMENT HIGHLIGHTS

- **Robot Type:** Bandicoot Mobility+
- **Integration:** Mounted on smart sanitation vehicle.
- **Total Manholes Cleaned (1 Year):** 5,075
- **Average Cleaning Rate:** 20–25 manholes/day.
- **Operating Zones:** Multiple wards across city regions.
- **Team Model:** Operated by trained sanitation workers converted into robotic operator.

CHALLENGES ADDRESSED

- Manual pit cleaning risks, especially during monsoon and gas buildup.
- Inaccessibility of manholes in congested zones.
- Slow cycle times and inconsistency with older methods.
- Pressure on ULB to modernize sanitation infrastructure.

TECHNOLOGY IMPACT

- **Fully Automated Operation:** No human entry required.
- **Mobile Access:** Vehicle-based unit rapidly deployed across city zones.
- **Efficient Sludge Removal:** Robotic arm + suction module integrated.
- **Real-Time Visibility:** Digital dashboard tracked and logged all operations.

OUTCOMES & BENEFITS

- 5,075 manholes cleaned within one operational year.
- Created a worker-safe, tech-enabled sanitation ecosystem.
- Enabled round-the-clock operations with minimal manual intervention.
- Enhanced citizen confidence in smart governance initiative.