

Sector

Infrastructure Business Review

The Infrastructure Business Unit (IBU) at Tata Consulting Engineers continues to play a central role in shaping the nation's development priorities. With a holistic approach that integrates sustainability, digitalisation, and inclusive growth, IBU delivers complex, multi-sectoral infrastructure solutions that serve people, cities, industries, and ecosystems. Its expertise spans water and environment, built environment, and transportation infrastructure, addressing both immediate urban needs and long-term national goals.

2024-25 Performance Highlights

17%

share in total revenue

17%

share in total acquisition

958

workforce on 31st March 2025

2,501

crore worth value engineering for customer

Industry Trends and Market Outlook

India's infrastructure sector is undergoing a transformative phase, shaped by demographic change, industrial expansion, rapid urbanisation, and the need for sustainable solutions. Nearly half of India's population is expected to reside in urban areas by 2050, creating unprecedented demand for inclusive, resilient, and climate-responsive infrastructure. This demand spans metro systems, urban transit corridors, roads and highways, airports, water systems, and urban services designed to enhance quality of life and economic productivity.

Water security is now central to infrastructure planning. The focus has shifted to river rejuvenation, desalination, interlinking of rivers, and circular water economy models that reduce waste and encourage reuse. Flagship national programmes such as the Jal Jeevan Mission and Atal Mission for Rejuvenation and Urban Transformation (AMRUT) are being reinforced by digital technologies, with digital twins and predictive modelling being used for asset management, monitoring, and lifecycle planning.

The Government of India's drive to establish the country as a global manufacturing hub has spurred investments in sectors like semiconductors, solar photovoltaics, electric vehicles, and defence manufacturing. These developments have created the need for world-class industrial clusters and integrated infrastructure ecosystems. Projections indicate infrastructure investment will grow at a CAGR of almost 10 per cent between 2025 and 2030, underpinned by strong domestic and international funding.

Transport modernisation remains a major thrust, with high-speed rail corridors, expressways, ports, and multimodal logistics hubs progressing rapidly. Defence and strategic infrastructure are also receiving attention due to evolving geopolitical imperatives, while destination-based master planning is driving tourism infrastructure.

Technology is increasingly integral to infrastructure creation and management. Artificial intelligence and machine learning are being deployed for flood forecasting and traffic management; AR/VR is being used for immersive planning and visualisation; and digital twins are supporting asset lifecycle optimisation and proactive maintenance.

India has already attracted more than USD 35 billion in foreign direct investment into infrastructure, and this figure is expected to rise as infrastructure investment moves from 5.3% of GDP to 6.5% by FY29. Collectively, these trends are redefining the future of infrastructure development, placing sustainability, digitalisation, and resilience at the heart of design and delivery.

Key Areas of Expertise

The Infrastructure Business of TCE provides integrated, end-to-end services across Water and Environment, Built Environment, and Transportation Infrastructure, consistently embedding sustainability and digitalisation into every project.

Water and Environment: IBU delivers comprehensive solutions across water supply, wastewater treatment, desalination, stormwater drainage, irrigation, and integrated water resource management. Its expertise spans the entire value chain of solid waste management, from waste-to-energy and compressed biogas systems to secure landfill design. The business also provides environmental and social impact assessments, climate action planning, and biodiversity-focused solutions. Projects increasingly include tunnel design for water conveyance, water-energy audits, leakage reduction strategies, and ecological rejuvenation programmes, ensuring water security for cities and industries alike.

Built Environment: IBU supports industrial, institutional, and urban projects, ranging from large-scale manufacturing zones and special investment regions to healthcare and education facilities. The team's designs prioritise operational efficiency, lifecycle performance, and environmental compliance. By using Building Information Modelling (BIM) and 3D engineering, IBU ensures accuracy, faster execution, and green building certification, integrating sustainable architecture principles across projects.

Transportation: IBU's transportation expertise spans metro and light rail systems, roads and highways, ports, bridges, and airport infrastructure. Its services include integrated design and engineering to improve connectivity across economic corridors and industrial hubs. Every transportation solution is built with an emphasis on multimodal integration, low-emission mobility, and resilience to climate extremes, reflecting the unit's commitment to decarbonisation and sustainable logistics.

Business Performance and Capabilities

FY25 was a year of strong performance for the Infrastructure Business Unit, underlining TCE's role as a partner in nation-building and sustainable development.

IBU played a key consultancy role in a major river pollution abatement programme funded by an international development agency, aimed at preventing untreated sewage discharge into rivers. This project highlighted TCE's leadership in urban environmental infrastructure and ecological restoration, aligning engineering expertise with broader sustainability goals.

The business expanded its global footprint, securing a prestigious engineering assignment for a solar PV manufacturing facility in North America – a project that contributes to global energy transition efforts and showcases TCE's ability to deliver clean technology infrastructure at international standards.

Domestically, IBU delivered engineering for major water reuse infrastructure in western India, including the design of tunnel systems that will improve water resilience for urban populations. The unit also enhanced its maritime portfolio by providing consultancy for dredging and port-related developments, reinforcing TCE's coastal engineering capabilities.

IBU provided advisory support for urban mobility initiatives, including feasibility and DPR studies for metro and transit authorities. The business also worked on institutional infrastructure, providing services to academic and research institutions, while contributing to social and cultural projects such as landmark temples and hospitals.

In the waste-to-energy domain, IBU drove projects that transform urban waste into clean energy, improving urban sanitation and reducing landfill pressures. It also led a national study on bio-methanation, creating a policy framework to scale up this sustainable technology nationwide.

This wide-ranging portfolio illustrates IBU's strength in handling complex, multidisciplinary assignments, both in India and globally, combining engineering excellence with sustainability, innovation, and digital solutions.

Key Initiatives

Several strategic initiatives marked FY25 for the Infrastructure Business Unit. IBU's integrated approach to urban infrastructure planning supported the modernisation of city systems and institutional campuses, enhancing liveability, connectivity, and resilience. Its expertise in water reuse, recycling, and river rejuvenation addressed pressing urban water challenges, while delivering measurable ecological benefits.

The business played a vital role in energy transition efforts by engineering facilities for solar PV production and supporting green building developments, reinforcing India's net-zero ambitions and sustainable industrialisation agenda. IBU continued to create impactful healthcare, education, and cultural infrastructure, contributing to social inclusion and community well-being. Its consultancy in maritime and logistics improved port efficiency, multimodal transport, and coastal development, demonstrating a systems-thinking approach to infrastructure planning.

The unit also embedded climate resilience into its projects, incorporating flood-proofing, risk-informed planning, and nature-based solutions. This positioned IBU as a knowledge leader in adaptation infrastructure. Digitalisation remained a central theme, with the use of AI/ML tools, BIM, and digital twins to improve design accuracy, project transparency, and delivery speed. This enabled IBU to offer clients modern, tech-enabled solutions while optimising resources and ensuring sustainability.

Future Priorities

Looking ahead, the IBU will focus on deepening its impact and expanding its capabilities in line with national priorities and global trends.

- **In water**, IBU will strengthen services in wastewater recycling, desalination, and digital asset management, ensuring that urban and industrial projects meet the dual goals of efficiency and sustainability.
- **In urban and regional planning**, the unit will support climate-resilient and inclusive infrastructure, ensuring projects are designed to withstand future environmental and demographic pressures.
- **In manufacturing** infrastructure, IBU will deliver world-class facilities for semiconductors, defence, EVs, and solar PV, contributing to India's ambition to become a global manufacturing hub.
- **In transportation**, there will be a continued focus on multimodal integration, smart mobility, and low-emission technologies to strengthen connectivity, support logistics modernisation, and reduce carbon footprints.

IBU will also scale its digital engineering capabilities, including increased application of AI, AR/VR, and digital twins for design, simulation, and lifecycle asset management. Its sustainability agenda will expand bio-methanation, advance green building compliance, and reinforce the circular economy by converting waste into resources. With India investing heavily in strategic infrastructure, IBU is poised to lead major projects across defence, tourism, healthcare, and education, ensuring that every initiative reflects TCE's ethos of Engineering Excellence, Enabling Growth.

“Infrastructure is the backbone of economic progress and societal well-being. At TCE, we approach this responsibility with a vision to design and deliver projects that are resilient, inclusive, and sustainable. By combining advanced engineering practices with digital innovation and a deep commitment to community impact, we are shaping infrastructure that not only supports today's needs but also enables the growth and possibilities of tomorrow.”



Nitin Kansal

Business Head - IBU

Projects 2024-25

