

**User name:** Delhi Metro Rail Corporation Limited

**Project name:** Enhancing urban connectivity – the Punjabi Bagh Interchange

**Location:** New Delhi, Delhi, India

**Background:**

- To improve connectivity along Delhi's metro line, Delhi Metro Rail (DMR) initiated a project to construct the Punjabi Bagh West interchange station.
- Project supports sustainable transport and shorter travel times for public transport users.

**Challenges:**

- Had to determine the optimal height of the interchange's platform crossing two operational lines while dealing with site constraints and continuous heavy traffic.
- Sought to optimize structural integrity, design, and construction.
- Needed integrated technology for careful planning, simulation, and analysis.

**Solution:**

- DMR selected OpenBridge, STAAD, and RAM to develop 3D models and a digital twin, evaluating numerous design options to determine an optimal solution.
- Working in an open digital twin environment streamlined workflows, enabling the team to perform real-time model modifications and clash detection.

**Outcomes:**

- The open digital twin helped the team collaborate and bring together data in a geospatial context and at scale, improving infrastructure delivery and performance.
- Improved efficiencies by 20%, saved up to INR 8 million in costs, and reduced 12% to 16% in concrete materials and 350 megatons of steel.

**Quote:** "When it comes to software solutions, Bentley has always provided the engineers with the newest, technologically advanced and most user-friendly interfaces available. The technological innovations provided by Bentley helped DMRC to save approx. 1200man hours along with huge material savings of 350MT of structural steel in this project." – *Viraj Gupta, Senior Deputy General Manager, Delhi Metro Rail Corporation Limited*

**Image caption/courtesy 1:** To improve connectivity along Delhi's metro line, DMR initiated a project to construct the Punjabi Bagh West interchange station. *Image courtesy of Delhi Metro Rail Corporation Limited.*

**Image caption/courtesy 2:** DMR selected OpenBridge, STAAD, and RAM to develop 3D models and a digital twin, evaluating numerous design options to determine an optimal solution. *Image courtesy of Delhi Metro Rail Corporation Limited.*

**Image caption/courtesy 3:** Working in an open digital twin environment streamlined workflows, improving efficiencies by 20% to save up to INR 8 million in costs. *Image courtesy of Delhi Metro Rail Corporation Limited.*

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