Road and Bridge Engineering Solution

Drive the Delivery of Resilient Road and Bridge Infrastructure

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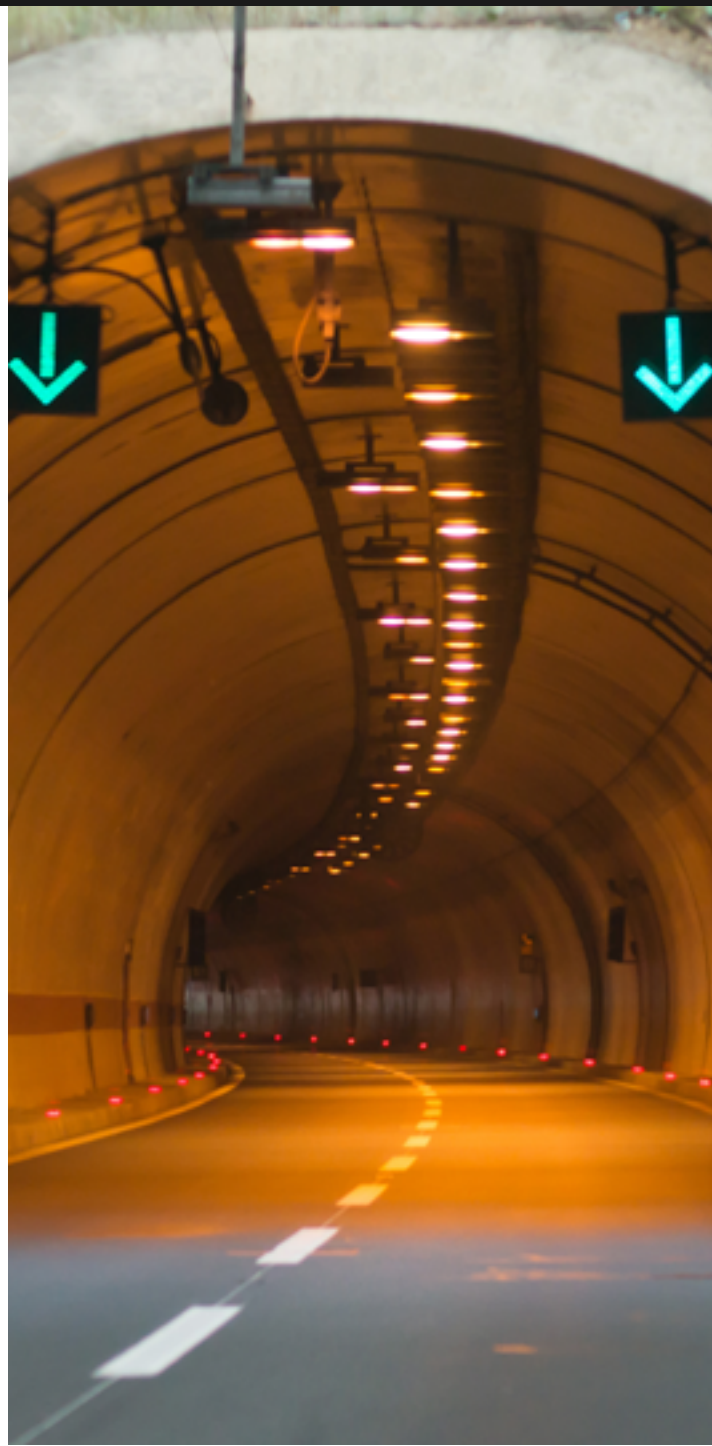


Bentley’s Road and Bridge Engineering Solution

To meet the demand of the massive transformation of design, infrastructure assets need to be engineered with efficiency, resiliency, and sustainability. The industry is facing a perfect storm where every aspect of a project is being impacted. Staffing, hardware, software, contract types, specifications, process, and deliverable requirements are all changing.

As technology has advanced, designs have moved from 2D digital drawings to 3D digital models. Even though there have been substantial advancements in civil design engineering, there is still a need for workflow improvements to reduce error and omissions during design, as well as improvements in communication and efficiencies during information exchange and handover. To meet the moment, transportation organizations need innovative solutions to accelerate their digital advancement and deliver sustainable projects.

Our road and bridge engineering solution accelerates 3D engineering design and facilitates delivery of 2D contract drawings. The solution helps organizations working on road, bridge, and tunnel projects to meet growing contract expectations more effortlessly with their current staff. Its open common data environment links people and processes across various disciplines, optimizing insights to mitigate risk, rework, and cost overruns. With a data-centric approach, the data contained in files is unlocked and made available to the right person at the right time to make better-informed decisions, leading to better outcomes. With Bentley’s support, your workforce will adapt quickly to digital workflows, simplifying handover to all project phases for more resilient road and bridge project delivery.

Solution Capabilities at a Glance

Infrastructure engineering professionals are under pressure. Facing aging infrastructure, population growth, and increased demand, they need agile solutions to deliver the transportation networks today's world requires. By implementing data-centric digital workflows and strategies, transportation agencies and their partners can leverage new capabilities to make better decisions and deliver better outcomes, transforming how assets are engineered. The road and bridge engineering solution offers comprehensive design and analysis capabilities, enabling organizations to meet contract requirements by accelerating 3D engineering design through innovative technologies that support digital and traditional project delivery.

Digital Design Collaboration and Delivery
Link people, processes, and standards across the project. Manage, engineer, validate, and deliver data that spans all asset disciplines.

Earthworks Design
Bring in a complete picture of surface and subsurface conditions, from both proprietary and open data formats.

Bridge Design and Analysis
Design concrete and steel bridges and ensure that they are fit for purpose by using advanced analytics.

Tunnel Design and Analysis
Track geometry and subsurface conditions by linking parametric tunnel design.

End-to-end Detailed Road Design
Leverage a fully detailed design application for surveying, drainage, subsurface utilities, and roadway design.

The Benefits of Better Roads and Bridge Engineering

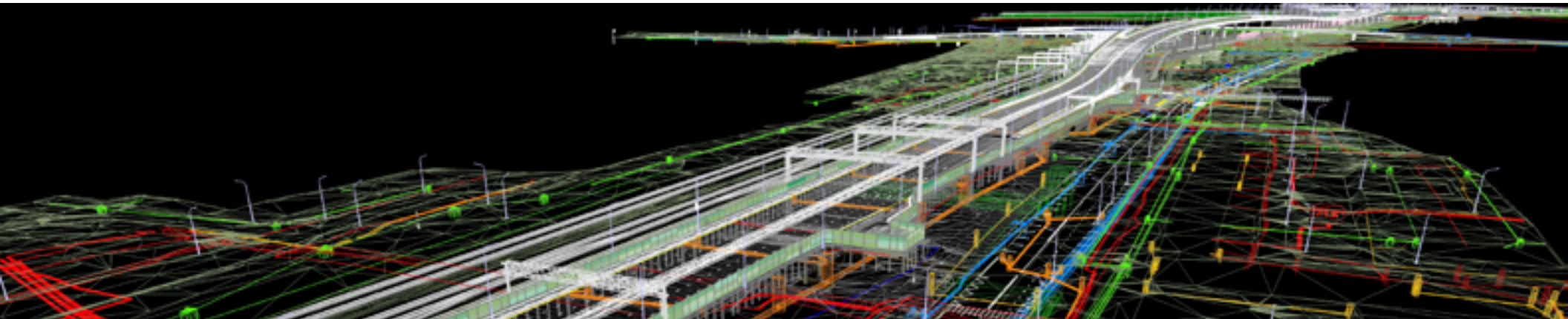
Increased demand for transportation infrastructure means changing how they are designed and engineered. It starts with a comprehensive solution that can bring together different disciplines under one interoperable workflow. As the industry responds to the challenge to do more with less, organizations can lean on the advantages offered by Bentley's road and bridge engineering solution to increase agility while accelerating manual and repetitive tasks. As a result, engineers will have more time to analyze potential errors and create alternatives for optimum design, safety, and performance prior to construction.

Accelerate Design and Documentation
Leverage more cost-effective technologies to increase productivity and deliver more with your existing staff.

Improve Collaboration with Proprietary Open Data
Work together in a unified model that incorporates data from multiple sources regardless of format, scale, or complexity to reduce the risk of project overruns.

Reuse Design Data across the Asset Lifecycle
Simplify handover with the transfer of robust data-driven models to construction and asset managers, reducing errors and misinterpretations.

Improve Decisions. Get Results.
Leverage design data for enhanced decision-making around sustainability.



WSP Drives Victoria's Transformational and Sustainable Transport Initiatives with Parkdale Level Crossing Removal

Working in a connected data environment saved approximately 300 resource hours. The integrated digital approach optimized data management and streamlined workflows, reducing modeling time by 60%. Bentley's applications helped optimize material usage and reduce the carbon footprint by 30%.

Read Case Study

Image courtesy of WSP Australia Pty. Ltd.

CDOT Alleviates Severe Bottlenecks along Interstate, Connecting Major Mountain Resorts

Bentley's technology saved USD 1.2 million when managing more than 1,000 file sheets. Bentley's integrated modeling solution saved 97% of effort developing and publishing digital twins for stakeholder review. To date, digitization has reduced overall workhours by 50,000 and project costs by more than USD 7 million.

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Image courtesy of AtkinsRéalis

Larsen & Toubro Helps Develop Dholera as India's First Smart Greenfield City

Working in a connected digital environment saved INR 10 million in costs. Using OpenRoads™ subsurface utility design analysis workflow automated previous manual modeling processes, reducing work hours from 4,000 to 3,000. Larsen & Toubro improved productivity by 25%, accelerating the project schedule by 10%.

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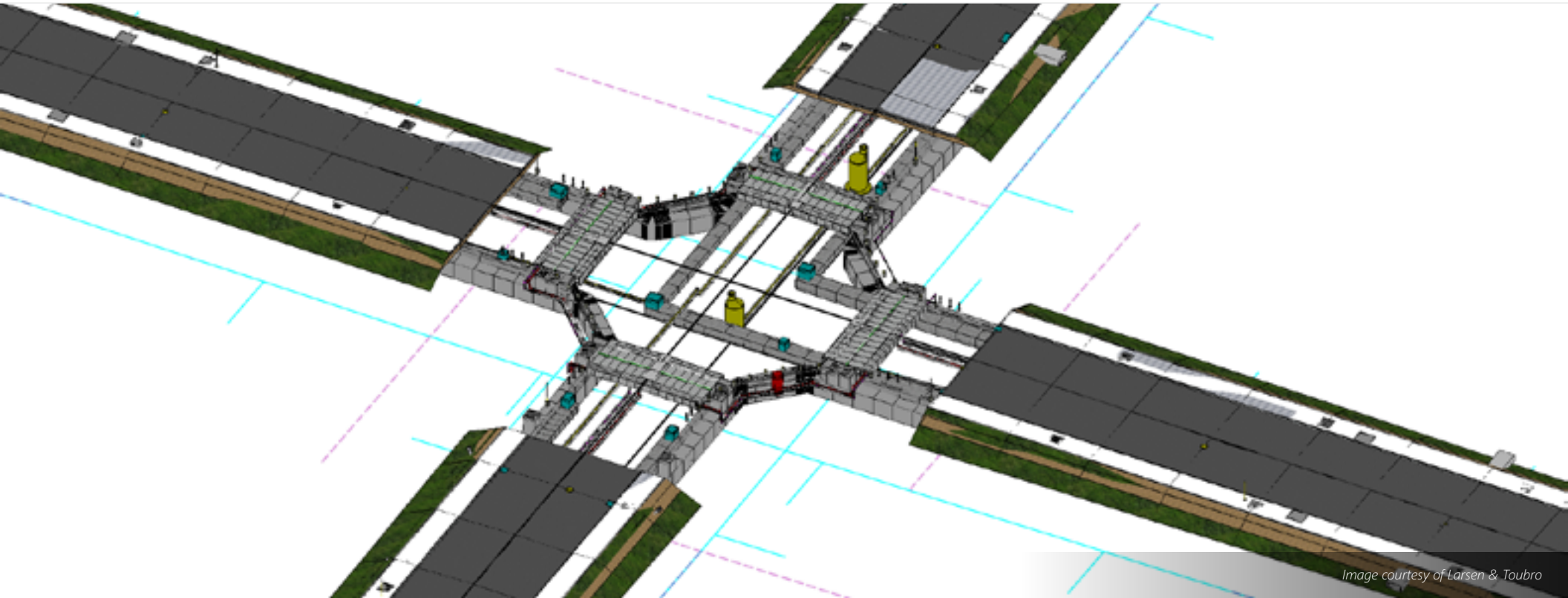

Image courtesy of Larsen & Toubro

SMEC Designs South Africa's N4 Montrose Interchange to Improve Traffic Mobility, Tourism, and Economies

SMEC performed and delivered conceptual and detailed designs by using Bentley's applications for 3D modeling and VR visualization. The new interchange along the N4 corridor is vital to improving safety, tourism, and the economies of three countries. Working in a collaborative digital environment saved approximately 2,500 hours and ZAR 2.5 million in design costs.

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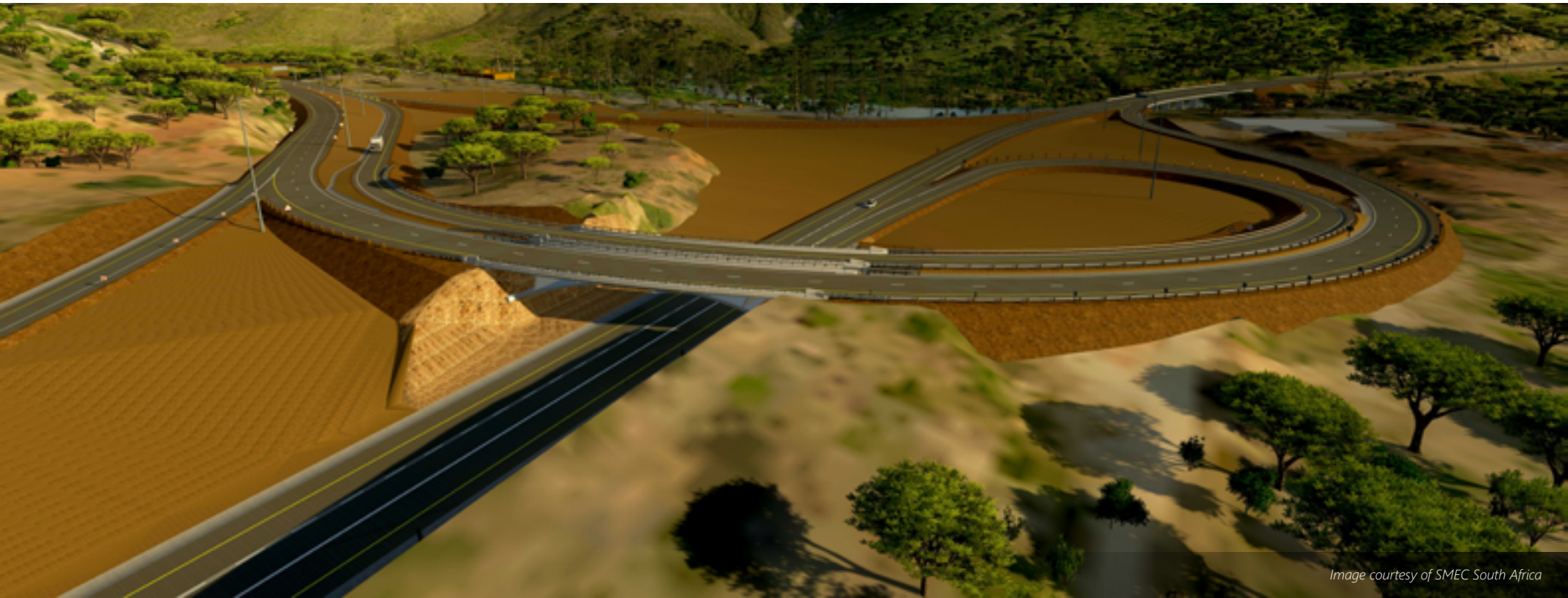

Image courtesy of SMEC South Africa

Getting Started

The road and bridge engineering solution helps firms close their productivity gap by streamlining processes, improving productivity, and enhancing communication across project phases. Leveraging a common data environment enables an efficient data handover from design to construction by linking people and processes across various disciplines, and produces insights that mitigate risk, rework, and cost overruns.

Start maximizing the potential of digital project delivery by creating visibility and insights for data-driven decisions that make infrastructure sustainable and resilient, which will better serve your stakeholders.

Contact us to learn more.

Visit Us Online