

Bentley®

Meet OpenRail™ Designer

Design, Analyze, and Document All Types of Rail Networks



Table of Contents

Page

3	Introduction
4	Meet OpenRail Designer
5	The OpenRail Designer difference
6	Get to Know OpenRail Designer
9	OpenRail Designer User Stories
12	Get Started with OpenRail Designer



Introduction

With increased costs, shorter duration requirements, and limited engineering workforce capacity, design efficiency and productivity are critical. The status quo no longer makes business sense.

Whether your next rail design project is metro, light rail, commuter, high-speed, or freight, intelligent track design and maintenance is key. The right software improves efficiency and reliability.

Going digital simplifies how rail agencies, network owners, and engineering consultants plan, design, build, and manage their rail infrastructure and associated supply chains. Discipline-focused software combined with BIM-enabled workflows save time and money on projects, regardless of size or complexity.

Whether your company is working directly on a railway project or partnering with another firm to get the job done, learn why purpose-built software for the work you do, from routine track upgrades to mega infrastructure projects, is a game-changer.



Meet OpenRail Designer

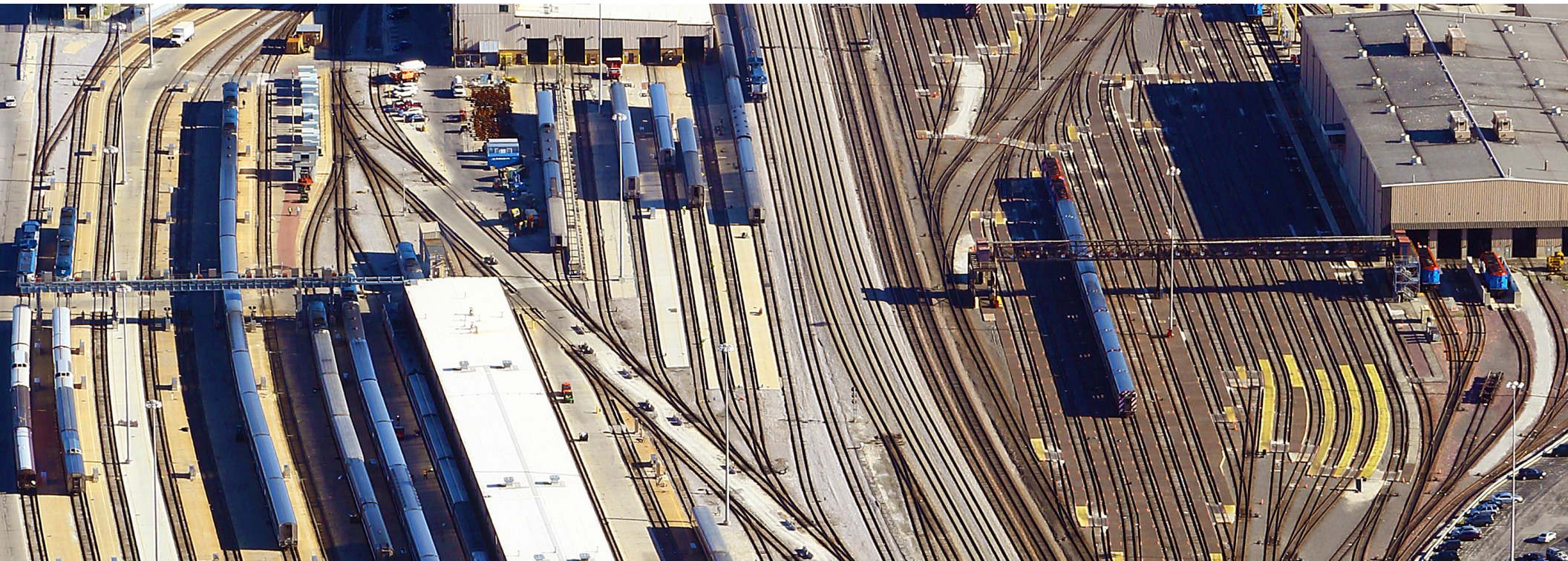
OpenRail Designer delivers everything engineers need for detailed rail track design, analysis, and documentation.

Whether you are working on survey, detailed design, drainage, utility relocation, track modeling, low voltage assets, or plan production, use one software application to deliver better project outcomes. By selecting 3D modeling software, such as OpenRail Designer, which offers an integrated approach to both 2D and 3D design, project teams can work using intuitive and traditional design methods while benefiting from the advantages of automated 3D modeling.



The OpenRail Designer difference

- ♦ **Powerful rail engineering capabilities and workflows:** Use software built for and with the rail sector. Capabilities and workflows proven on projects across the world save time on the design and maintenance of track, station and yard assets.
- ♦ **Built-in automation for increased productivity:** Sync design to documentation to significantly reduce manual rework and increase productivity.
- ♦ **Open for better collaboration:** OpenRail Designer's interoperability with Bentley's open civil design products for road, bridge, and tunnel simplifies design coordination and holistic project reporting.
- ♦ **Future-proofed deliverables:** OpenRail Designer is a digital twin authoring environment. Simplify handover by delivering rich and validated data-driven models to construction and asset managers.



Get to know OpenRail Designer

10 ways OpenRail Designer adds value:

1. Better understand existing conditions

Set projects up for success from the start by seamlessly integrating reality data and design information to create accurate, georeferenced design models.

2. Control standards to reduce project risk

The OpenRail Designer WorkSpace makes it easy for all project stakeholders to follow consistent organization and project standards and practices. As every project is different, standards are customizable to meet the needs of different project owners and requirements.

3. Efficiently explore design alternatives

Evaluate more design alternatives in less time, increase client satisfaction, and maximize return on investment with OpenRail Designer's rule-based design capabilities. With each change, all related objects and drawings update automatically, enabling engineers to explore and optimize more design options and complete final designs faster.

4. Comprehensive rail design and modeling capabilities

It's more than just CAD drawing, geometry design, and earthwork modeling software. OpenRail Designer includes proven capabilities for surveying, drainage and utilities, low voltage assets, signal sighting, schematic views, geotechnical, and site layout.

5. Reduce rework with linked drawing production

Undocumented design changes and incomplete drawings and documentation can lead to delayed schedules and expensive change orders after construction begins. With OpenRail Designer, drawings are live views directly from the design model, ensuring accurate, up-to-date deliverables. Drawings and annotations are automatically updated when the design changes.

Get to know OpenRail Designer

6. Better collaboration and project management

Efficient discipline-focused software, such as OpenRail Designer, prioritizes collaboration and enables data reuse across the entire project lifecycle. Unify track, mechanical, electrical, and signaling engineering from the outset for better decision-making and earlier clash detection.

With unrivaled file referencing capabilities, unparalleled integration with ProjectWise, standards management capabilities, support for many different file formats, and integrated cloud services for review, analysis, issue tracking, and deliverables management, OpenRail Designer is ideally equipped to collaborate with anyone, anywhere.

7. Scale to handle projects big or small with ease

OpenRail Designer scales to meet the demands of the project. Streamline the integration and sharing of design models and drawings from all disciplines, regardless of project size or complexity. Easily manage large models and drawings as OpenRail Designer consolidates both the graphics and engineering data into the DGN file. Store data in one or many federated files and work with them across the entire project.



Get to know OpenRail Designer

8. Bring design intent to life with real-world visualizations

Providing clients and the local community with stunning visualizations that 2D deliverables cannot produce takes projects to the next level. OpenRail Designer includes Bentley LumenRT to turn your projects into compelling realistic images and videos—no visualization specialist required.

9. Future-ready deliverables

OpenRail Designer is a digital twin authoring environment, with the 3D models being the foundation for digital twins. Simplify handover by delivering rich and validated data-driven models to construction and asset managers.

Having a complete digital replica of physical assets replaces the inefficient and inaccurate methods of record or “as-built” drawings. It eliminates the guesswork about the built environment and opens new possibilities, such as reviewing complex engineering models with design review functionality, providing digital deliverables for construction, and sharing rich asset management models and data.

10. Increased security

Software security is an increasingly important concern for any corporation. OpenRail Designer is designed from the ground up with these security concerns in mind. It is built on the latest development environments using modern architecture and data security protocols.





User Success Story

Faster Design and Simplified Change Management

Hurontario Light Rail Transit

Arcadis

Arcadis was tasked with conducting the track alignment, structure, and drainage design, as well as route-wide ducting design, for the Hurontario Light Rail Transit project. With tight timelines and a team located across six different time zones, they would need close cross-discipline collaboration to deliver this complex project.

After previous methods proved difficult and time-consuming, Arcadis converted to 3D modeling, enabling a semiautomated workflow that significantly reduced modeling time and improved visualization. This connected data environment enhanced data management and communication. Bentley software quadrupled the speed at which they could adjust 3D design models, while dynamic visualization capabilities helped team members identify and resolve clashes.



User Success Story

Improving Productivity with Interoperable Applications

Rail Baltica

IDOM

IDOM designed 389 kilometers of the Rail Baltica project, including six sections in all three countries. IDOM realized that they could improve both collaboration and visualization on the project by using Bentley applications.

They first used ProjectWise to establish a connected data environment, enabling all team members to instantly access the most up-to-date data and documents, no matter their location.

With that system in place, teams then used Bentley's Open applications to manage project elements and incorporate content created by third-party applications.

OpenRail Designer was central to the development of the 3D railway models. It enabled them to manipulate input from other software used by the different project disciplines, generating very productive workflows and carrying out design changes in a very short time.



User success story

Integrated Digital Models Enable Railway Expansion over Complicated Terrain

Salerno-Reggio Calabria Railway

Italferr S.p.a.

Italferr was assigned to design an expansion of the high-speed railway that connects Reggio Calabria. Due to the topography of the territory, it was a challenging project. With many stakeholders involved in the project due to the line passing through multiple municipalities, its digital twin approach provided easy access to data and ensured clear lines of communication with the Italferr team.

Digital applications streamlined the design process by making files and documents more accessible and organized. Italferr estimates this workflow resulted in a 10% time-efficiency gain. Virtualizing the project with a digital twin also cut the number of site visits and in-person meetings required by around 50%. Overall, the engineering team saved approximately 675 hours of work, thus preserving their most essential resource on this complex project—time.

Getting Started with OpenRail Designer

Whether your company is working directly on a rail project or you are partnering with another firm to get the job done, discipline-specific software, automated workflows, and the free flow of accurate, up-to-date data are crucial elements of a successful project.

Making the move to a new way of working can be daunting, but with the right support to execute, the benefits are considerable. By blending traditional engineering workflows for plan, profile, and cross-sections with 3D modeling and connected workflows, OpenRail Designer makes the transition easier than ever.

Contact us to learn more about OpenRail Designer.

Contact us today

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