Bentley®

OpenBridge Modeler®

Intelligent 3D parametric modeling for bridges

OpenBridge Modeler provides intuitive capabilities for 3D parametric bridge modeling with intelligent objects. It features advanced interoperability, allowing access to Bentley's civil application data and a seamless connection to Bentley's bridge design and analysis applications.

Analyze and design intelligent models

OpenBridge Modeler produces intelligent models with engineering content properties for all bridge components. Native bridge modeling capabilities facilitate the creation of complex models by engineers without requiring advanced 3D modeling skills. With the new 2D/3D workflow and the flexible standalone modeler option, teams can adapt their design process to suit project needs. The bridge elements created react to changes in the surrounding components without computing advanced 3D geometry. The multidiscipline, consolidated project view helps evaluate design decisions and identify constructability issues and conflicts early on. OpenBridge Modeler offers advanced tools for modeling steel tub bridges, including cross frames and stiffeners.

Integrate solutions to accelerate performance

The integrated direct exchange of bridge geometry among various stakeholders improves decision-making for design and construction, connecting and enhancing workflows. You can also perform detailing with ProStructures™, visualize soil boring data with OpenGround®, and store and query bridge inspection reports with AssetWise® Inspections. OpenBridge Modeler works seamlessly with ProjectWise®.

By using OpenBridge Modeler with ProjectWise and Bentley Infrastructure Cloud™,

project team members can continuously share, reuse, and repurpose data, gaining the benefits of real-time collaboration when working across multiple locations and time zones, as well as among numerous contributors, companies, and stakeholders. Information exchange throughout the lifecycle of the bridge project among various stakeholders is accomplished with iModels and iTwin® Services. These models can facilitate model-based construction workflows and can be easily integrated into SYNCHRO™ 4D and SYNCHRO Field, for virtual construction planning and up-to-the-minute information.

Enhance model verification with 3D visualization

Modeling in a 3D environment can rapidly verify bridge geometry. Use the Dynamic View feature or push-button drawing generation tools to create 2D views of superstructure and substructure components, with dimensions, for producing preliminary drawings. Perform clash detection to eliminate problems before they occur. You can use native 3D visualization and rendering or push the model to Bentley LumenRT™ to create high-impact visuals and animations and effectively communicate the project to stakeholders for project approvals.

Automate production of deliverables

Generate annotated plan, elevation, and section drawings. 2D linework is automatically generated and can be used as a base for plan production. Generate a variety of reports to facilitate the evaluation of multiple bridge alternatives, construction sequences, including quantities and costs. Reports can be printed to 3D PDF, saved as HTML files, or exported to spreadsheets.
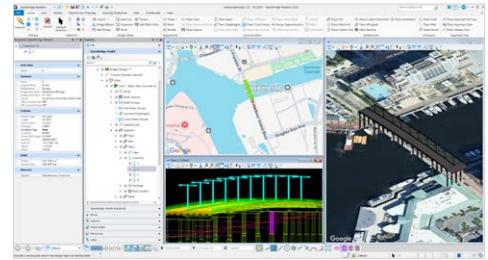
Rich data models provides valuable information at a glance.
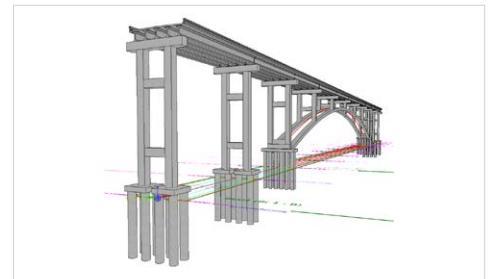
Flexible modeling tools allows complex bridge modeling.

System requirements

Minimum: Intel or AMD processor 2.5 GHz or greater, Windows 11 (64-bit) operating system, 16 GB of memory, 1 GB of video RAM, and 25 GB of hard disk space.

OpenBridge Modeler at-a-glance

Ease of use
- Familiar MicroStation® environment
- Bridge wizard
- U.S. customary and metric (SI) units
- Comprehensive 3D physical bridge modeling
- 2D/3D workflow for enhanced usability
- Optional standalone modeler for workflow flexibility
- Extensive library for super and substructure components
- Flexible modeling with insert/delete span capabilities
- Intuitive dialog-driven workflows
- Cross-section template for complex geometry
- Catalog of appurtenances

Versatile reporting options
- Expanded custom reports for geometry and quantities
- Deck elevations report
- Beam elevations report
- Pier, bearing, and seat elevations report
- Camber report
- Material quantities report
- Cost estimate report
- Input Echo report
- Formats:
  - 3D PDF
  - Microsoft Excel

Integration with other software
- Bentley software:
  - OpenRoads™
  - ProStructures
  - ProjectWise
  - Bentley Infrastructure Cloud
  - OpenGround
  - Bentley LumenRT
- Google Earth

Powerful modeling and visualization capabilities
- Superstructure and substructure modeling
- Bridge types:
  - Precast prestressed girder
  - Cast-in-place, concrete slab, multicell box, T-beam
  - Segmental: span by span, cantilever
  - Steel I-girder and box (tub)
- Advanced modeling for steel tub girders
  - Cross frames and stiffeners
  - Access holes in steel diaphragms
- Bridge components:
  - Deck slab
  - Girders, steel (built up or rolled), concrete
  - Detailed modeling of concrete beam end cuts
  - Abutments
  - Piers: cap, column, footing, piles
  - Variable columns and caps
  - Wing walls
  - Bearings and beam seats
  - Approach slab
  - Ground excavation
  - Light poles
  - Crash barriers, medians
  - Cross frames and diaphragms and more
  - Parametric, intelligent bridge components
  - Rule-based and constraint-driven modeling
  - Create custom components and use functional components with user-defined constraints
  - ProStructures rebar modeling tools
  - Clash detection and clearances
  - Solid and transparent views
  - Lifelike rendering with Bentley LumenRT
  - Reference roadway information and ground data
  - Construction scheduling and animation using SYNCHRO