Bentley®
Advancing Infrastructure

PRODUCT DATA SHEET

OpenBridge® Designer

Integrated Modeling, Analysis, and Design for Bridges

OpenBridge Designer is a fully integrated modeling, analysis, and design application that produces deliverables derived directly from the 3D model, improving bridge constructability and ensuring smooth project delivery. The application utilizes the modeling capabilities of OpenBridge Modeler® and the analysis and design features of LEAP® and RM Bridge to meet all design and construction needs. With this application, you can use one product to create an interoperable physical and analytical model to use throughout the bridge lifecycle.

PRODUCE INTELLIGENT MODELS

OpenBridge Designer produces intelligent, parametric models that are rich in engineering content properties for various bridge components. The application reuses data from various stakeholders, thus maintaining relevant and up-to-date geometry within a single model. It allows you to specify the construction sequence of the bridge for analysis and design as a true 3D solution, as well as perform clash detection with other structures, objects, and underground utilities to eliminate problems before they occur.

ACCELERATE PERFORMANCE WITH AN ALL-IN-ONE BRIDGE APPLICATION

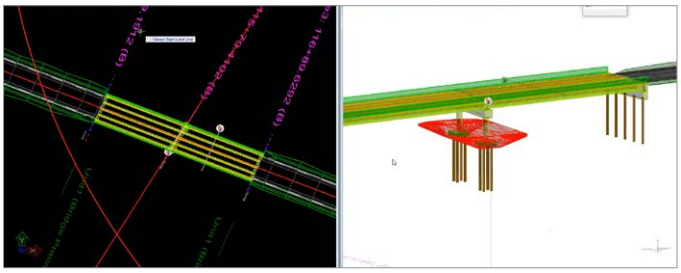
Innovative analysis, design, and load-rating functionality come together in one advanced environment in OpenBridge Designer. The direct exchange of project information helps users improve decision-making for design and construction while connecting and enhancing workflow processes. The resulting information provides a rich data asset for as-built documentation, maintenance, and operations. Because of its collaboration and data management, OpenBridge Designer is the ideal solution for professional bridge organizations, construction teams, maintenance and inspection crews, and bridge owner-operators.

IMPROVE COLLABORATION

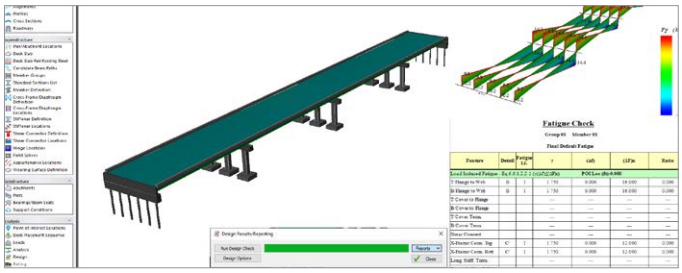
OpenBridge Designer allows direct referencing of DGN models from highway alignments, profiles, and ground information created with OpenRoads™ and OpenRail™ applications, as LandXML and IFC files. If reference data changes, the parametric and rule-based bridge model automatically responds to those changes. You can also perform detailing with ProStructures, review geotechnical information with gINT®, and store and query bridge inspection reports with Bentley's inspection software. OpenBridge Designer also works seamlessly with ProjectWise®, and you can create a digital twin of your bridge to maximize the collaboration between different teams and disciplines. Also, models built with OpenBridge Designer, facilitate model-based construction workflows and can be easily integrated into SYNCHRO™, allowing virtual construction planning with up-to-the-minute information.

IMPROVE DELIVERABLES PRODUCTION

Modeling in a 3D environment helps rapidly verify bridge geometry. The bridge is seen in plan, elevation, and cross-section views. A variety of deliverables can be generated using OpenBridge Designer. It also facilitates the evaluation of multiple bridge alternatives, construction sequences and costs reports, and well-organized analysis and design reports. You can utilize iTwin® Design Review workflows for 2D and 3D design review in a web-based environment that streamlines review sessions on design work-in-progress deliverables. OpenBridge Designer, with its seamless interoperability with ProStructures, can be used for concrete detailing. OpenBridge Designer also offers a companion installation of LumenRT™ to create stunning visualizations.



Develop physical 3D BIM bridge models.



Create multiple design alternatives with different analytical methods to optimize your bridge design.

SYSTEM REQUIREMENTS

OPERATING SYSTEM: The minimum requirements are: Intel® Pentium®-based or AMD Athlon®-based processor 2.0 GHz or greater, Windows 10,11 (64 bit) operating system, 8 GB of memory, 1 GB of video RAM and 25 GB of hard disk space.

CONNECTIVITY: Internet connectivity is required.

OpenBridge Designer At-A-Glance

EASE OF USE

- Intelligent graphical user interface
- U.S. customary and metric (SI) units
- Comprehensive 3D physical bridge modeling
- User customizable libraries
- Intuitive dialogue driven workflows
- Cross-section template for complex geometry
- Catalog of appurtenances
- Automated bridge creation through Bridge Wizards

MODELING AND VISUALIZATION CAPABILITIES

- All bridge types
- Prestressed concrete, steel I-girder and boxes, segmental, trusses, suspension and cable-stayed bridges
- Superstructure and substructure modeling
- Parametric, intelligent bridge components
- Intuitive, dialogue-driven workflows
- Rule-based and constraint-driven modeling
- Clash detection and clearances
- Solid and transparent views
- Lifelike rendering
- Reference roadway information and ground data
- Construction scheduling and animation

VERSATILE REPORTING OPTIONS

- Customized and dynamic report
- Deck and beam-seat elevations report
- Material quantities report
- Cost estimate report
- Camber diagram
- Formats: 3D, PDF, Microsoft Word, Microsoft Excel, HTML

AUTOMATED DRAWING GENERATION

- DGN and DWG drawings
- Plan and elevation drawings
- Bridge framing plans
- Precast, prestressed concrete girders
- Piers and abutments

INTELLIGENT ANALYSIS AND DESIGN

- Full 4D analysis
  - 3D geometry for static and dynamic analysis, including creep, shrinkage, and time effects in schedules
- No limitations
  - Geometry, boundaries, loading and combination, construction stages, linear dynamics, nonlinear material behavior
  - Cables, tendons, beams, springs, and advanced elements
- Any structural model
  - Plane truss, plane frame, grillage, FEM
- Complex analysis
  - P-Delta, cable sagging, large displacements
  - Nonlinear time history analysis, pushover analysis
  - Hydro dynamic analysis
  - Wind buffeting in time and frequency domain, wind CFD
  - High speed rail
  - Optimization
- Any materials
  - Steel, concrete, and composite structures, pre-/post-tensioning
- Any erection method
  - Balanced cantilever, pre-cast segmental, incremental launching, span-by-span, advanced shoring
  - 20+ international design codes

INTEGRATION WITH OTHER SOFTWARE

- Direct data exchange with MicroStation®, OpenRoads, OpenRail, AssetWise® Inspections, ProStructures, gINT, and more
- AASHTO BRIDGEWare database
- File formats: DGN, DXF, XML, and LandXML

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