

Bentley[®]
Advancing Infrastructure

 CONNECT Edition



Image courtesy of Pennoni

OpenBridge[®] Designer CONNECT Edition

Integrated Modeling, Analysis, and Design of Bridges

OpenBridge Designer is a unique application that combines modeling, analysis, and design into one comprehensive bridge product. The application utilizes the modeling capabilities of OpenBridge Modeler and the analysis and design features of LEAP[®] Bridge Concrete and LEAP Bridge Steel to meet the design and construction needs of both concrete and steel bridges. With this application, you have the advantage of using a single comprehensive package from beginning to end of any bridge design project. You can use one product to create an interoperable physical and analytical model for steel and concrete bridges that can be utilized throughout the lifecycle of the bridge.

The CONNECT Edition

The SELECT[®] CONNECT Edition includes SELECT CONNECT services, new Azure-based services that provide comprehensive **learning**, **mobility**, and **collaboration** benefits to every Bentley application subscriber. *Adaptive Learning Services* helps users master use of Bentley applications through CONNECT Advisor, a new in-application service that provides contextual and personalized learning. *Personal Mobility Services* provides unlimited access to Bentley apps, ensuring users have access to the right project information when and where they need it. *ProjectWise[®] Connection Services* allow users to securely share application and project information, to manage and resolve issues, and to create, send, and receive transmittals, submittals, and RFIs.

Produce Intelligent Models

OpenBridge Designer produces intelligent, parametric models rich in engineering content properties for various bridge components. These include concrete compressive strength, structural steel grade, standard beam designations, and more. The application reuses data from various stakeholders thus maintaining relevant and up-to-date geometry within a single model. OpenBridge Designer users can also specify the construction sequence and schedule, and view a time-lapse construction animation. It can also perform clash detection with other structures, objects, and underground utilities to eliminate problems before they occur.

Accelerate Performance with 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 – including bridge geometry, materials, loads, pre-stressing strand pattern, shear reinforcement, cross-frames, diaphragms, and stiffeners – 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. When combined with



Image courtesy of Pennoni

Create intelligent 3D parametric bridge models – digital twins of a bridge

Bentley software for user collaboration and project 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 brings various disciplines together for analysis, design, detailing, documentation, construction engineering, and load-rating. The software allows direct referencing of DGN models for highway alignments, profiles, and ground information created with Bentley's OpenRoads and OpenRail applications, as well as LandXML files. If reference data changes, the parametric and rule-based bridge model responds to those changes automatically. Engineers can also perform detailing with Bentley's ProStructures, perform geotechnical analysis with Bentley's gINT[®], and store and query bridge inspection reports with Bentley's inspection software. OpenBridge Designer also works seamlessly with ProjectWise[®], Bentley's platform for connecting people and information across project teams. By using OpenBridge Designer with ProjectWise and Navigator, project team members can continuously share, reuse, and repurpose data, gaining the benefits of real-time collaboration – working across multiple locations and time zones, among numerous contributors, companies, and stakeholders.

Enhance Visualization

Modeling in a 3D environment allows users to rapidly verify the bridge geometry. The bridge is viewed in plan, elevation, and cross-section views. Solid and transparent viewing options aid in the exploration of areas with complex geometry. Use the Dynamic View feature to create 2D views of superstructure and substructure components, with dimensions, for producing preliminary drawings. Users can also specify the construction sequence and schedule and view a time-lapse construction animation as well as perform clash detection with other structures, objects, and underground utilities to eliminate problems before they occur. The application also helps users measure vertical and horizontal clearances. OpenBridge Designer offers a companion installation of LumenRT so that users can easily create stunning visualizations.

System Requirements

Processor

Intel® Pentium®-based or AMD Athlon®-based processor 2.0 GHz or greater

Operating System

Windows 10 (64-bit), Windows 8 (64-bit)

Memory

8 GB minimum, 32 GB recommended

Video

1 GB of video RAM or higher recommended

Disk Space

10 GB minimum free disk space

Find out about Bentley at: www.bentley.com

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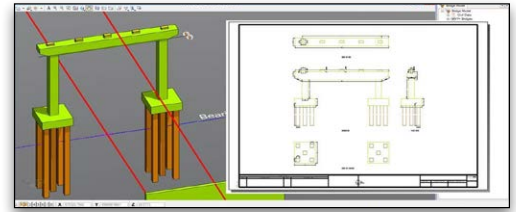
Global Office Listings

www.bentley.com/contact

Improve Deliverables Production

OpenBridge Designer can create annotated plans, elevations, and sections using MicroStation® Dynamic View feature. A variety of deliverables can be generated using OpenBridge Designer. Among them are deck elevations, beam-seat elevations, material quantities, cost estimates, and camber diagrams. OpenBridge Designer also includes an input Echo report that facilitates the evaluation of multiple bridge alternatives, construction sequences, costs reports, and well-organized analysis and design reports. OpenBridge Designer,

with its seamless interoperability with ProConcrete, can be used for concrete detailing.



Generate bridge project deliverables easily

OpenBridge Designer System At-A-Glance

Ease of Use

- Intelligent graphical user interface
- U.S. customary and metric (SI) units
- Comprehensive 3D physical bridge modeling
- 2D views, with dimensions using Dynamic Views
- User customizable libraries
- Variety of reporting formats
- Intuitive dialogue driven workflows
- Cross-section template for complex geometry
- Catalog of appurtenances
- Automated bridge creation (ABC wizard)

Intelligent Analysis and Design

- Concrete Bridges
 - » Supports majority of everyday concrete bridges; precast, pre-stressed and post-tensioned concrete bridges
 - » Supports almost all common substructure types
 - » Supports AASHTO LRFD, LFD, LRFR, and design codes in Canada and India
 - » Supports LATAM and SEAN countries that use AASHTO code
 - » Strut-and-tie modeling (U.S. version)
 - » Single girder or whole-width analysis
 - » Thermal load analysis
 - » Prestress loss calculation by time-dependent specs (LFD and LRFD; CHBDC)
 - » Multimode response spectrum analysis for seismic design
- Steel Bridges
 - » Supports majority of everyday steel bridges; straight and curved steel I-girder and tub-girder bridges
 - » Supports almost all common substructure types
 - » Supports AASHTO LRFD and LRFR codes
 - » Design optimization for I-girder and tub-girder members
 - » Line girder, grillage, and 3D finite element analysis
 - » Multimode response spectrum analysis for seismic design
 - » Deck placement sequence analysis
 - » Automatic dead load calculation for self-weight of girders, cross frames, concrete deck, and appurtenances
 - » User-defined dead load: uniform, trapezoidal, and point loads
 - » Automatic load case generation

Modeling and Visualization Capabilities

- Superstructure and substructure modeling
- Bridge Types:
 - » Precast prestressed concrete girder
 - » Cast-in-place and post-tensioned concrete box girder

- » Cast-in-place and post-tensioned concrete T-beam
- » Cast-in-place and post-tensioned concrete slab
- » Steel I-girder
- » Steel tub-girder
- Bridge Components: Deck slab
 - » Girders; steel – rolled, built up I-girder or tub-girder, concrete – precast I-girder, box, T-beam
- » Abutments
- » Piers: cap, column, footing, piles
- » Variable columns and caps
- » Wing walls
- » Bearings and beam seats
- » Light poles
- » Crash barriers
- » Medians
- 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 using Navigator

Versatile Reporting Options

- Deck elevations report
- Beam-seat elevations report
- Material quantities report
- Cost estimate report
- Camber diagram
- Input Echo report
- Formats:
 - » PDF
 - » HTML
 - » Microsoft Word
 - » Microsoft Excel

Automated Drawing Generation

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

Integration with Other Software

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