



Key Capabilities

Intelligent 3D Models for Steel Bridges

- Comprehensive design, analysis, and load rating software for everyday steel bridges.

Extends Bridge Information Modeling (BrIM) Solution

- Provides innovative information delivery for steel bridge design and engineering, project management, maintenance, and operations.

Industry Standard AASHTO Support

- Follows AASHTO LRFD standards, offering advanced physical 3D bridge modeling, design, analysis, and load rating of both superstructure and substructure of everyday steel bridges.

Interoperability with Bentley Civil Software

- Interoperable with MicroStation, Power InRoads, MXROAD, Power GEOPAK, InspectTech. Connection to LEAP RC-PIER® is available for substructure analysis and design.

3D Model is a Sustainable Information Resource for Optioneering

- The model is automatically updated as you design, so you can easily evaluate design alternatives.

LEAP® Bridge Steel

Integrated Design, Analysis, and Load Rating of Steel Bridges

LEAP Bridge Steel is a comprehensive 3D steel bridge design and rating program. It offers advanced physical 3D bridge modeling, design, analysis, and load rating of everyday steel bridges, following AASHTO LRFD specifications.

Advanced 3D Bridge Modeling, Design, Analysis, and Load Rating

This intuitive and powerful software complements Bentley's LEAP Bridge Enterprise capabilities for concrete design, providing a system that supports the real-world steel bridge design process. As part of Bentley's bridge information modeling (BrIM) suite of products, LEAP Bridge Steel enables you to take full advantage of this innovative approach for leveraging engineering data throughout the lifecycle of the bridge, from

design and engineering to project management, maintenance, operations, and inspection.

Design both Superstructure and Substructure Quickly and Accurately

Powered by the STAAD®.Pro engine, LEAP Bridge Steel is a powerful structural modeling and analysis solution for small to medium steel bridges. With an intuitive tree and ribbon control interface, this software enables you to design, model

Why LEAP Bridge Steel?

LEAP Bridge Steel extends Bentley's leadership with bridge information modeling (BrIM), providing an intelligent model for steel bridge design and analysis. You can take full advantage of this innovative approach for information delivery for bridge design and engineering, project management, maintenance, and operations.

With industry standard support for AASHTO LRFD standards, the software offers advanced physical 3D bridge modeling, design, analysis, and load rating

of both superstructure and substructure of everyday steel bridges.

The cornerstone of BrIM is data mobility and reuse, and LEAP Bridge Steel was created to take full advantage of this capability. It is fully interoperable with other Bentley solutions, including MicroStation, Power InRoads, Power GEOPAK, MXROAD, and InspectTech. The intuitive connection to LEAP RC-PIER provides a solution for substructure analysis and design.



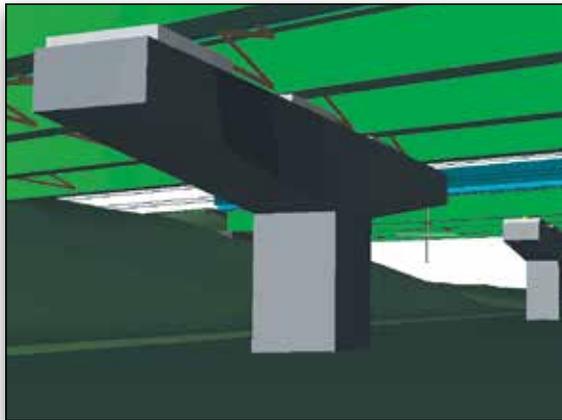
and evaluate steel bridges faster. The software easily handles the vast majority of the straight and curved steel bridges built today, making it the choice for bridge professionals.

LEAP Bridge Steel offers a synthesis of geometric modeling, substructure and superstructure analysis and design, and load rating in a single, information-rich environment providing a smarter way to design. Intelligent data management and parametric modeling will dramatically improve your bridge delivery process, making it easier to deliver your project on time and under budget.

LEAP Bridge Steel enables you to:

- Save time with a streamlined and robust analysis and design process in a full 3D working environment.
- Gain direct access to Bentley civil geometry data, horizontal/vertical alignments, and digital terrain models.
- Export information-rich 3D bridge models to MicroStation seamlessly.

Similar to its field-proven complementary program for concrete bridges, LEAP Bridge Steel models provide a rich data set for as-built documentation, maintenance, operations, and inspection.



Immediately visualize bridge and civil data as you design.

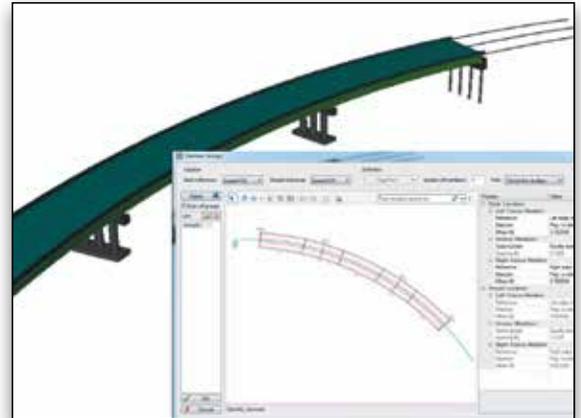
Integrated Bridge Solutions Improve Project Delivery

LEAP Bridge Steel is a major offering within the Bentley bridge solution for the delivery, maintenance, and operation of bridge systems. The bridge solution also includes world-class applications for road design, digital terrain modeling, bridge design, structural engineering and analysis, steel and concrete reinforcement detailing, bridge load rating and analysis, and inspection – improving ROI in data at every step of the bridge lifecycle. When combined with Bentley tools for user collaboration and project data management, LEAP Bridge Steel becomes an ideal solution for professional bridge organizations, construction teams, maintenance and inspection crews, and bridge owner-operators.

LEAP Bridge Steel works seamlessly with ProjectWise®, Bentley's platform for connecting people and information across project teams. By using LEAP Bridge Steel with ProjectWise and Bentley Navigator, you can continuously share, reuse, and repurpose data, gaining the benefits of real-time collaboration and streamlined engineering content management – working across multiple locations and time zones, among numerous contributors, companies, and stakeholders.

Meeting the Demands of Compliance and Data Integrity

Bentley understands the importance of compliance – the AASHTO codes are built into the design of LEAP Bridge Steel, simplifying the complexity of meeting government regulatory requirements. Bentley bridge software makes it easy to share the right information with the right people at the right time. Because the data is interoperable with OpenRoads technology and GEOPAK, InRoads, and MXROAD civil software, you can avoid the costs of translating files and integrating data unnecessarily.



Layout your curved bridge members in real time.

Information Mobility – Access Intelligent Data When and Where You Need It

Data re-use and mobility are essential for a well-designed, constructed, and maintained asset. Bentley BrIM workflows eliminate information gaps and enable you to easily share bridge data.

Bentley i-models provide a mechanism for iteratively delivering rich project information to the all stakeholders throughout the project's lifecycle. i-models are containers for the open exchange of infrastructure information that enable project team members to share and interact with complex project data and information regardless of authoring application or technology platform.

LEAP Bridge Steel data-rich design models allow stakeholders from all disciplines to be involved from cradle to grave in developing a fully intelligent and living model. Effective and efficient sharing and distribution of information can reduce errors, resolve conflicts, compress project schedules, and reduce project costs.

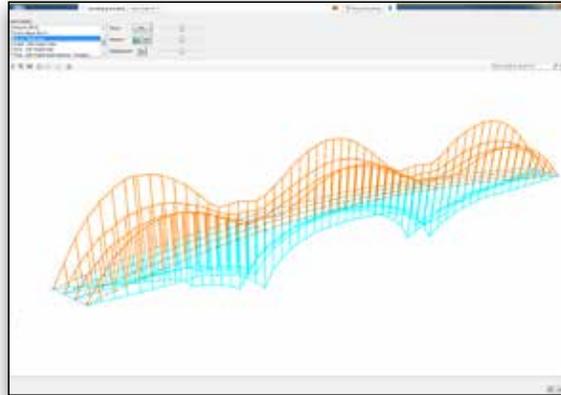
LEAP RC-PIER – Analysis and Design of Reinforced Concrete Abutments, Piers, and Foundations

LEAP RC-PIER allows users to design multi-column and hammerhead piers; straight, tapered, or variable caps; and circular, rectangular (tapered and non-tapered) or drilled-shaft columns. Footing types include isolated or combined, supported on either soil or piles. There is no limit to the number of loads, bearings, and piles that may be included in the design. Analysis results are presented in a variety of easy-to-view formats. By combining LEAP Bridge Steel superstructure design with LEAP RC-PIER substructure design, you can benefit from a comprehensive bridge model.

World-class Experience and Proven Success in Transportation

Bentley offers:

- Collaboration platform
- Cloud services and SaaS
- Hybrid hosting models
- Best practices, industry leadership, and innovation
- 3D/4D/5D modeling
- Design visualization
- BIM for transportation
- Mobile apps
- Professional services
- On-demand training and support



LEAP RC-PIER supports HL-93 live load analysis.



Bridge Information Modeling



BrIM: A Synthesis of Planning, Engineering, Design, and Construction for the Lifecycle of Your Bridge Project

With the integrated process of LEAP Bridge Steel, you can synergistically develop a precise bridge data model that improves overall project accuracy and consistency.

The results provide important asset information, not just for the design phase but also for the life of the bridge. This synthesis of bridge information can carry through all the project phases, from conception to detailed design, design to fabrication and manufacturing, and construction to operations.

The goal of BrIM is to provide any person requiring information about a given bridge the ability to access and reuse relevant information during the bridge lifecycle. For example, a structural detailer can access rebar information; a bridge modeler can extract key design measurements; and a road design engineer can access the exact geometry and position of the bridge deck from accurate as-built information. Moreover, bridge owners can access historical trending, traffic analysis, and cost information along with physical models of the infrastructure for capital project planning.

System Requirements

Supported operating systems

Windows 7, Windows 7 (64-bit), Windows Vista, Home Premium, Ultimate and Enterprise editions, Windows Vista (64-bit)

Communications protocols

Internet Protocol version 4 (IPv4), Internet Protocol version 6 (IPv6)

Prerequisites

Windows installer Version 3.1v2, Microsoft .NET Framework 3.5 SP1, Microsoft Office Access Runtime 2007

Processor

Intel or AMD processor 2.0 GHz or greater

Memory

4 GB minimum, 8 GB recommended

Hard Disk

700 MB free disk space (which includes the 300 MB install footprint for a complete installation)

Video

256 MB of video RAM or higher is recommended.

Find out about Bentley at www.bentley.com

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Bentley LEAP Bridge Steel At-A-Glance

Supported Configurations

- Simple and continuous spans
- Straight and curved alignments
- Unlimited spans and girders
- Standard rolled shapes, I-girders, and built-up sections

Modeling and Visualization

- Streamlined and rapid modeling workflow of all bridge components
- Direct access to Power InRoads, Power GEOPAK, and MXROAD for importing horizontal alignment, vertical profile, and terrain
- Instantaneous 3D visualization of the bridge superstructure and substructure as designed
- Automatic creation of intelligent 3D MicroStation models

Parametric Physical Bridge Modeling Encompassing All Bridge Components Including:

- Horizontal alignment and vertical profile
- Roadway/deck surface
- Piers and abutments, normal, skewed and/or offset
- Deck slab definition including flared slabs and deck placement sequence
- Member group and framing plan definitions
- Straight, flared, and curved girder layout
- Extensive library of standard rolled steel shapes
- Schedule-based member definition for built-up members
- Cross frame and diaphragm definition and layout tools
- Transverse, bearing, and longitudinal stiffeners
- Bracing connection plates
- Shear connector layout
- Appurtenance library for parapets, medians, sidewalks, railings, and other components

Analysis and 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 generation load cases and load combinations for each of the analysis stages
- Live load library for LRFD HL-93 loading, fatigue truck, standard rating and permitting vehicles
- Custom vehicle definition including variable gage axles
- Structural analysis powered by Bentley STAAD.Pro engine
- Automated physical to analytical model creation for line-girder, 3D grillage

Reporting

- Extensive options for viewing and printing analysis and design results
- Microsoft Word, Microsoft Excel, Adobe PDF, and HTML
- Options for creating custom reports of selected results

Standards

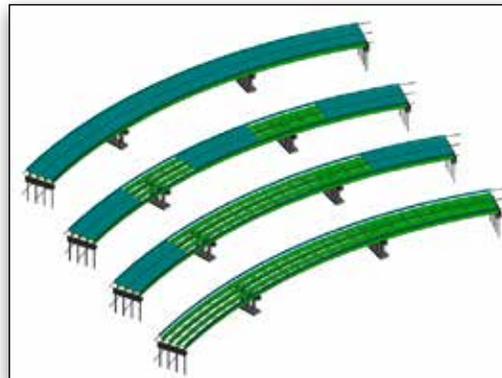
- AASHTO LRFD 6th Edition including 2013 interims
- AASHTO MBE 2nd Edition including 2013 interims

Product Interoperability

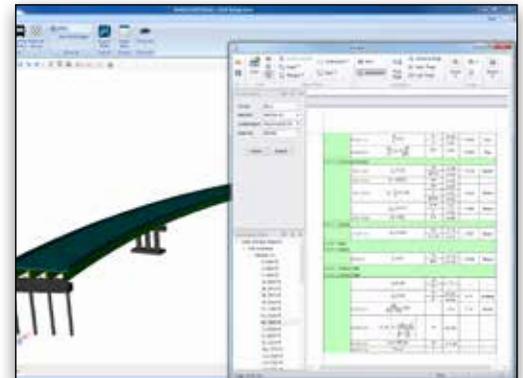
- MicroStation, Power GEOPAK, Power InRoads, MXROAD, ProjectWise
- LEAP RC-PIER
- InspectTech

For more information, visit

www.bentley.com/lbs



LEAP Bridge Steel deck placement sequencing.



A sample of design results in the report.