



LEAP® BRIDGE

FOR INTEGRATED ANALYSIS, DESIGN, GEOMETRY AND LOAD RATING OF CONCRETE BRIDGES

LEAP Bridge integrates all concrete bridge disciplines – bridge geometry, substructure and superstructure analysis, and design and load rating – into one powerful application with a central database for parametric design. Component design modules are all accessible from the LEAP Bridge User Console and powered by the proven LEAP analysis and design tools – trusted by engineers worldwide.

Fully integrates bridge geometry, substructure, and superstructure

LEAP Bridge packs industry-leading component analysis, design, and load rating functionality into one simple-to-use application. All component design modules are easily navigated using an organized tabbed design.

Supports dual AASHTO codes for design and rating

Load Resistance Factor Design (LRFD) is here, and LEAP Bridge makes the transition easy. Switch between LFD/LFR and LRFD/LRFR specifications with this premiere dual-code application. Dual-code capabilities provide practical learning of new code requirements, keeping you efficient and on-schedule throughout the transition to LRFD.

Offers Automated Bridge Creator (ABC) Wizard

Using a guided, three-step process, define superstructure and substructure geometry, and specify material properties to create a bridge model in no time. This enables you to focus on engineering analysis and design procedures. The superstructure may be pre-stressed girders, CIP post-tensioned box girders, or CIP reinforced slabs. The substructure may be either integral or drop-cap type piers. Detailed alignment, profile and cross-section information can also be defined or directly imported from LandXML files.

Delivers full bridge and multiple bridge functionality

The powerful database and graphical capabilities give you the ability to model and view bridge projects. LEAP Bridge delivers 3D visualization of the entire bridge including reinforcement. Solid and transparent 3D views assist with complex geometry visualization. View a realistic representation of the bridge profile, elevation, and cross-slopes for quick verification of input.

Offers Views of Reinforcement in 3D

LEAP Bridge gives you the ability to view superstructure and substructure reinforcement in the 3D viewer. Longitudinal reinforcement, shear reinforcement, and PT-Tendons are shown for box girder bridges. Deck longitudinal reinforcement and stirrups are shown for pre-cast girder bridges. Flexural and shear reinforcement in cap, vertical reinforcement in columns, and flexural and temperature/shrinkage reinforcement in footings are shown for substructure elements.

Delivers 2D Component Views

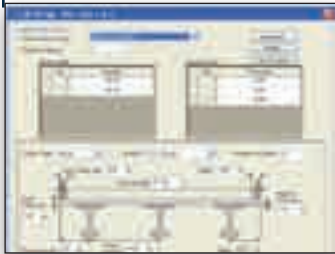
LEAP Bridge delivers 2D views for all superstructure and substructure components. The 2D views may be printed and exported to DXF/DGN with dimensions and used as preliminary drawings. Data is easily verified and view controls enable you to zoom and pan for closer design inspection.

Handles layout, analysis, and design for integral/monolithic piers

LEAP Bridge handles the complete engineering life-cycle of an integral pier design. All geometry, superstructure and substructure are completed within a single application. Reactions from the superstructure analysis are taken directly to the substructure module. This is your complete, accurate, and efficient solution for integral/monolithic pier analysis and design.

Complies with LandXML

LandXML is the common database format used throughout the transportation industry by top applications including MicroStation®, Bentley® InRoads®, Bentley® GEOPAK®, and many more. The LEAP Bridge database is LandXML registered and certified, enabling you to directly exchange information



Automated Bridge Creator (ABC): Complete a bridge model in three easy steps.



Multiple bridge project views: 3D views of multiple bridge projects assist with complex geometry visualization.



View reinforcement inside 3D model: The transparent option displays super and substructure reinforcement.

SYSTEM REQUIREMENTS

Software

Microsoft .NET Framework 2.0 or higher

Processor

1 GHz 32-bit (x86) or higher

Operating System

Microsoft - Windows Vista, Windows XP, Windows 2000, Windows Server 2003

Memory

1 GB minimum, more recommended

Disk Space

500 MB

Input Device

Mouse

ABOUT BENTLEY

Bentley Systems, Incorporated is the global leader dedicated to providing comprehensive software solutions for sustaining infrastructure. Architects, engineers, constructors, and owner-operators are indispensable in improving our world and our quality of life; the company's mission is to improve the performance of their projects and of the assets they design, build, and operate. Bentley sustains the infrastructure professions by helping to leverage information technology, learning, best practices, and global collaboration – and by promoting careers devoted to this crucial work.

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such as horizontal alignments, vertical profiles, cross sections, and roadways with other transportation applications.

Integrates with AASHTOWare

Front-end bridge description data entry is eliminated by the direct integration of LEAP Bridge with the AASHTO BRIDGEWare database. The direct exchange of project information such as bridge geometry, materials, pre-stressing strand pattern, and shear reinforcement ensures the preservation of your data and the accuracy of your results.

Offers a project information exchange center

LEAP Bridge becomes the main data command center for your bridge projects. Reciprocal data exchange with other industry applications provides you with an automated, seamless data exchange mechanism that ensures the

preservation of critical project information. Redundant data entries and the risk of operator error are eliminated while productivity is increased. Spend more time on complex engineering issues and complete more projects in less time.

Records in a single database

All project information is recorded and stored in the LEAP Bridge database. This single database powers parametric design capabilities. Changes to the design trigger updates throughout the project, eliminating the need to make multiple, time-consuming corrections to all project components.

Generates reports

Flexible report options give you easy access to project information. Reports may be printed, saved as HTML files, or exported to spreadsheets.

LEAP BRIDGE AT-A-GLANCE

Graphical User Interface

- User-friendly interface
- U.S. and metric (SI) Units
- 2D views with dimensions
- Graphical Feedback of Input Data
- User-Defined Libraries
- Text and Graphical Report Formats

Supports Most Common Concrete Bridge Types

- Automated Bridge Creator (ABC) Wizard
- Precast, Prestressed Girder Bridges
- CIP and PT Box Girder Bridges
- CIP and PT Slab Bridges
- Multi-Column Piers
- Hammerhead Piers
- Drop-Cap Piers
- Integral Piers

Structural Analysis Options

- Strut-And-Tie Modeling
- Single Girder or Whole Width Analysis

- Prestress Loss Calculation by Code Equations or Time Dependent Specs
- Thermal Load Analysis
- Calculation of LFD and LRFD Live Load Distribution Factors
- AASHTO LFD and LRFD Live Loading and Load Combinations
- AASHTO LFD and LRFD Load Combinations

Design/Code Check

- AASHTO Standard and LRFD Specifications
- State Specifications: Florida and California
- Design and Load Rating checks

Powerful Modeling and Visualization Tools

- Solid and transparent views showing reinforcement
- Full Bridge and Multiple Bridge Capabilities
- Import alignment

- 2D and 3D Views of full bridge and individual components

Versatile Reporting Options

- Reports on full bridge or its components
- Options to print preview or save in html formats
- Customization with company logo and contact information

Interaction with Other Software

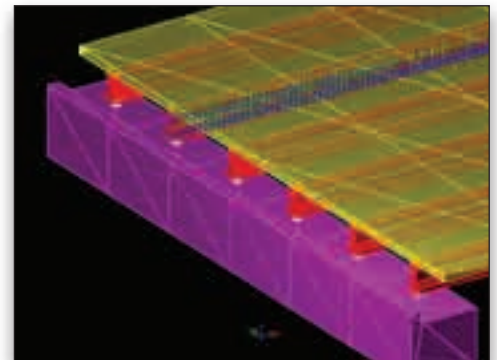
- AASHTOWARE Virtis/Opis
- Bentley® Rebar and Bentley MicroStation (DGN and DXF file formats)
- GEOPAK and LEAP GEOMATH (XML file format)
- Other LandXML compliant applications

Powered by:

- LEAP® CONSPAN®
- LEAP® CONBOX®
- LEAP® RC-PIER®
- LEAP® GEOMATH®



Flexible reporting options: Run full bridge geometry, material, and component reports from a single report menu.



Export to DXF/DGN: Export a complete 3D bridge model to DXF/DGN and view in applications such as MicroStation.