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Bentley®

A True Bridge Project Solution: OpenBridge™ Designer

Quality matters. Bridge design right the first time.

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In partnership with Bentley Systems, we provide technology solutions that drive modernization, strengthen operations, and ensure compliance with evolving government standards.

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Bentley@carahsoft.com
844-722-8436

A TRUE BRIDGE PROJECT SOLUTION

OpenBridge™ Designer

QUALITY MATTERS. BRIDGE DESIGN RIGHT THE FIRST TIME.

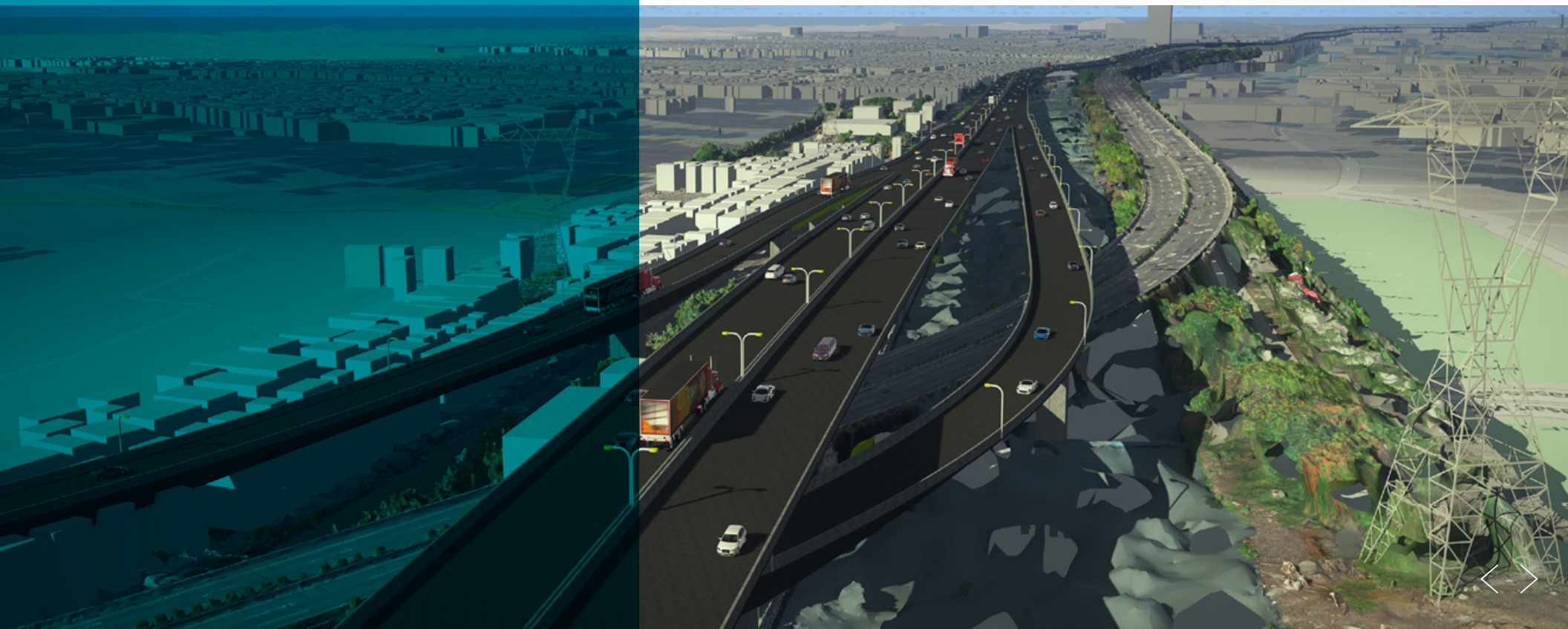


Bentley®

AS ENGINEERS WE GET IT!

Each day, you are faced with an increase in demand for contract compliance, information-rich 3D models, and the production of multiple deliverables with firm deadlines.

You need an application that makes your job easier, not harder. That's why we built OpenBridge – to meet the evolving requirements of bridge project delivery on budget and on time, regardless of change.







ENGINEERING IS COMPLICATED.

YOUR SOFTWARE DOESN'T HAVE TO BE.

- Why does it have to be so manual and tedious?
- How can I ensure accuracy across thousands of components every time there is a design change?
- How do I know this is going to work with other team members on the project?
- Why do I need multiple applications and data translations for one project?

THERE IS A BETTER WAY...

USE OPENBRIDGE
QUALITY MATTERS. BRIDGE DESIGN RIGHT THE FIRST TIME.

Traditional 2D methods are manual, tedious, and full of communication and data gaps, leaving you frustrated, exhausted, and stuck with a project that is costing you accuracy, time, and money.

De-stress with OpenBridge:

- One application for modeling, design, and analysis
- Offers dynamic change management
- Provides an open modeling environment
- Enables automated drawing production



CHOOSE OPENBRIDGE:
AN ALL-IN-ONE BRIDGE APPLICATION

> 3D PHYSICAL MODELING AND BIM

Create an exact representation of the structure with elements that have their own physical properties such as material, concrete strength, steel grade, and rebar size, making the model a true bridge digital twin.

> DESIGN DOCUMENTATION

Produce all required design documentation, such as geometry reports, 3D models, and annotated 2D drawings. Model 3D parametric objects and produce drawings, bar bending schedules, and material quantity reports. Verify clearances and detect and resolve conflicts, guaranteeing the highest level of quality within your design.

> DESIGN AND ANALYSIS

Perform analysis and design without duplicating data entry and focus exclusively on the analytical process. Ensure that the 3D physical model becomes a single source for truth of your project.

> CONSTRUCTION AND OPERATIONS

Use the BIM model to plan, manage, construct, and track construction. Design for safety hazards and risks using dynamic spatial coordination analysis that identifies work area overlap, overhead crane risks, and potential obstructions.



3D PHYSICAL MODELING AND BIM

Efficiently deliver bridge projects from the start. OpenBridge Designer's immersive 2D/3D hybrid design environment enables you to work from a single federated model. Easily and dynamically manage design changes to prevent project delays.

WATCH VIDEO >>

> START WITH REAL DATA

Generate accurate georeferenced models through the seamless integration of reality data and design information.

> DESIGN WITH CONFIDENCE

Develop intelligent, physical 3D bridge models that provide an accurate graphical and functional representation of a bridge and its design results.

> MODEL AND MANAGE CHANGE

Maintain relationship information so that when elements are modified, the associations are as well, keeping your project on track.

> BRING VALUE AT THE ONSET

Create an interoperable physical and analytical model for all bridge types that can be utilized throughout the bridge lifecycle.



DESIGN AND ANALYSIS

Your competitive advantage is contingent on meeting project requirements on time, every time, regardless of change. OpenBridge is your one-stop shop for integrated design, analysis, and visualization, enabling your teams to work faster, smarter, and more efficiently to accelerate project delivery for superior bridge designs.

STEEL BRIDGES

WATCH VIDEO >>

CONCRETE BRIDGES

WATCH VIDEO >>

> REAL DATA, REAL TIME

BIM capabilities let you see and update data in real time, ensuring design and analysis accuracy. Automatically extract your analytical model from the physical one in the design and analysis phases.

> EASY INPUT, EASY OUTPUT

OpenBridge can work alone or with other software. Confidently produce quality deliverables across disciplines, data types, and distributed teams.

> CREATE, REUSE, AND SAVE TIME

Create commonly used structural elements that can maintain constraints and relationships. Store, access, and place at any time and watch your design update.

> DELIVER BETTER OUTCOMES

Improve public engagement and streamline the consultation process with real-world visualizations that promote the benefits of your project.



DESIGN DOCUMENTATION

Construction drawings are no longer the only expected deliverable. Engineers and designers are now required to provide additional data such as 3D models and automated machine control guidance. OpenBridge is all you need to improve deliverables and meet project requirements.

WATCH VIDEO >>

> ENHANCE COORDINATION

Keep data and designs in a single solution to allow for greater coordination among disciplines and team members.

> INCREASE PRODUCTIVITY

Deliver efficient projects that traditional workflows can't match. Precisely view, model, document, and visualize information-rich designs for all types of bridge projects while meeting project requirements, no matter if they are for 2D, 3D, or beyond.

> REDUCE COST AND CHANGES

Rapidly evaluate multiple bridge options, material types, and span arrangements.

> AUTOMATE DESIGN DELIVERABLES

Eliminate errors during design and be confident that all project information is consistent and up to date from the design office to the field.



CONSTRUCTION AND OPERATIONS

Use 3D models to capture, explore, and maintain consistent and coordinated planning, design, construction, and operational data. Identify issues from the outset and minimize project lag to avoid costly on-site changes.

WATCH VIDEO >>

> SIMPLIFY WORKFLOWS

Create a single source of truth and work in a fully collaborative environment that unifies roadway engineers, bridge engineers, and contractors from the outset of your project.

> SEAMLESS INTEGRATION

Incorporate or extract data from multiple disciplines and integrate your supply chain with your in-house team to work as one.

> ENHANCE OUTCOMES

Share intelligent 3D models with contractors to generate realistic project costs and construction schedules based on actual materials and quantities required.

> ADHERENCE TO STANDARDS

Streamline regulatory compliance and improve on-site safety to ensure compliance with engineering and safety standards.

OPENBRIDGE DESIGNER
CAPABILITIES AT A GLANCE

BRIDGE TYPES



- Prestressed girder
- Steel I-girder
- Steel boxes or tubs
- Segmental – balanced cantilever, incremental launching, and span by span
- Cable stayed
- Suspension
- Spliced girder
- Concrete slab or box
- Truss
- Arch
- Floating bridge

DESIGN CODES



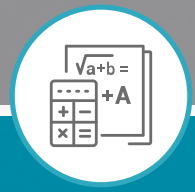
- AASHTO LRFD and LFD for design
- AASHTO LFR and LRFR codes for load rating
- Canadian CHBDC
- Indian WSD and LSD
- U.S. customary units
- Metric (SI) units
- Eurocode, China, South Korea, Australia, Brazil, Austria, Malaysia, Hong Kong, Japan, New Zealand, Russia, S. Africa

DESIGN



- Prestessed concrete
- Steel frame
- Plate girder
- Concrete frame
- Optimization for steel plates and field splices
- Irregular section
- Moving load
- Creep/shrinkage
- Strut-tie modeling
- Seismic – response spectra, pushover, and time-history
- Bridge load rating

ANALYSIS



- Static
- Dynamic (linear and non-linear)
- Soil structure interaction
- Section definitions
- Heat of hydration
- Material non-linear
- Construction stages (linear and non-linear)
- Higher order: P-Delta and large displacements
- Rail track-structure interaction
- Finite element
- Cable sagging
- Wind dynamics: CFD, frequency, and time domain
- Hydrodynamics
- Non-linear springs / dampers / isolators

PLAN PRODUCTION & DOCUMENTATION



- Plan, profile, and cross section sheet generation
- Steel and rebar detailing drawings
- Construction documentation
- BIM deliverables

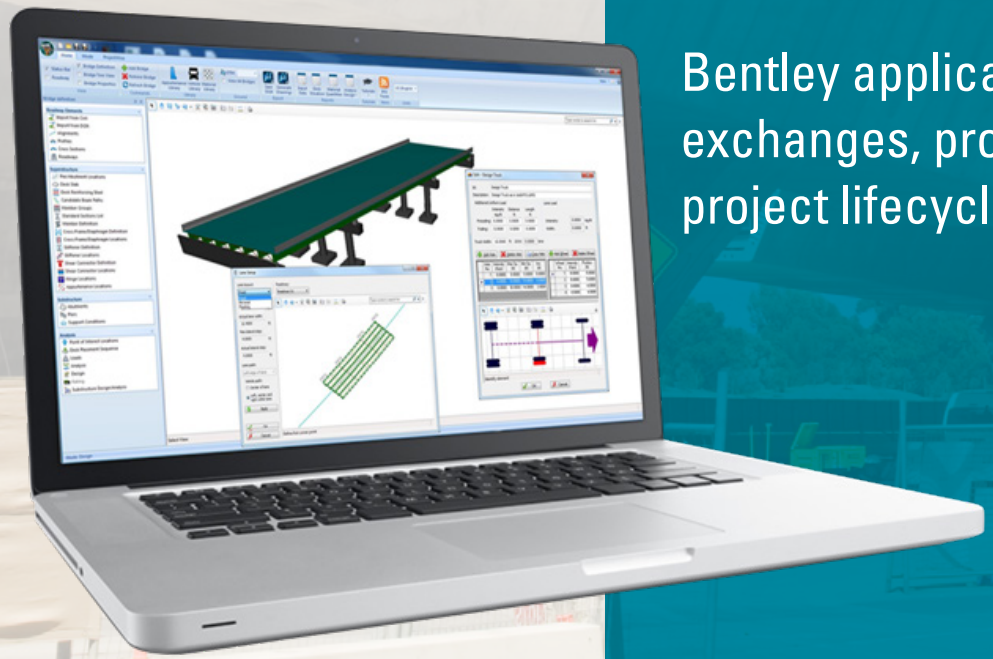
INFRASTRUCTURE INDUSTRY TRENDS
WHY MOVE NOW?

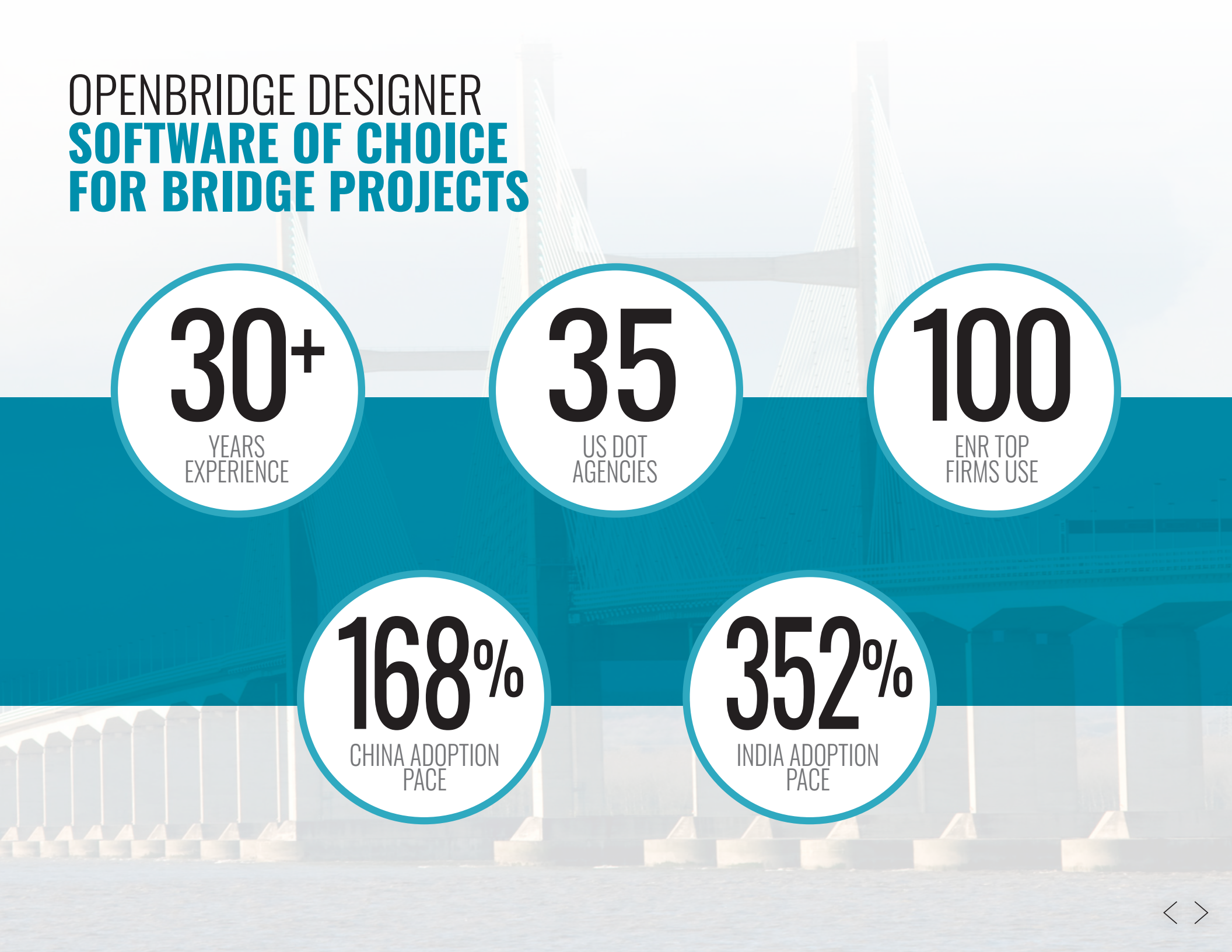
Engineering firms and contractors are recognizing that over half of new business requests require the use of digital project delivery.

Users say that BIM advancements influence their ability to offer services and increase their win rates for new work.

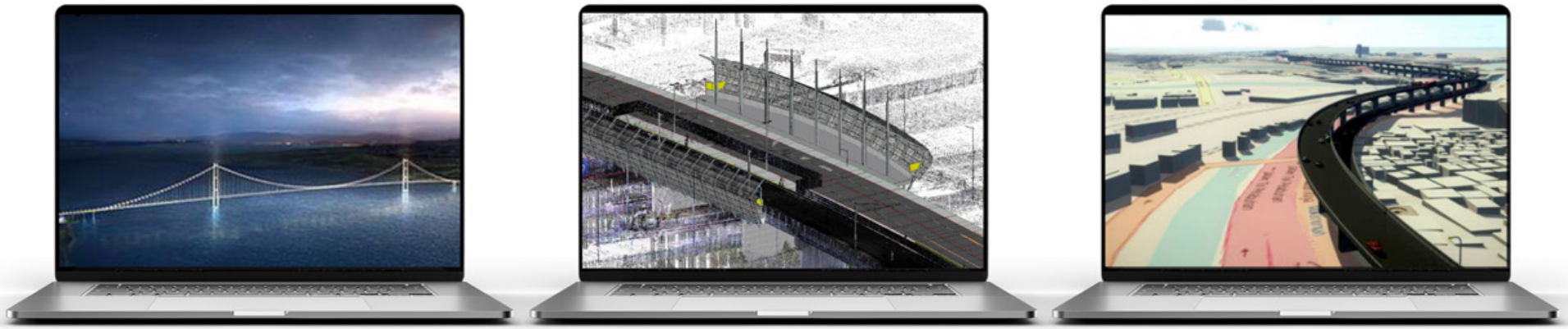
Most users report that they are gaining value by applying 3D modeling techniques.

Bentley applications support multiple data exchanges, providing benefit across the project lifecycle.




OPENBRIDGE DESIGNER
SOFTWARE OF CHOICE
FOR BRIDGE PROJECTS
30+
YEARS EXPERIENCE
35
US DOT AGENCIES
100
ENR TOP FIRMS USE
168%
CHINA ADOPTION PACE
352%
INDIA ADOPTION PACE

SEE WHAT **LEADING DESIGN FIRMS** HAVE ACCOMPLISHED



AAS-JAKOBSEN AND ARUP

Advanced bridge design and modeling on the world's largest suspension bridge in Canakkale, Turkey

With integrated modeling functions and the versatile input script capability, the team advanced a design for aerodynamic stability, which was confirmed by wind tunnel testing.

ARUP

Design of Cherrywood Grand Parade Bridge as a sustainable transport system in Dublin, Ireland

Using OpenBridge and ProStructures shortened the modeling process by 50% and the time to produce 70 drawings from one day to one hour.

PT. WIJAYA KARYA (PERSERO) TBK

Employed BIM methodology to design the longest double-decker bridge in the world in North Jakarta, Indonesia

4D visualization prevented USD 60 million in cost overruns. Using BIM methodology increased the efficiency of bridge modeling by 40%, saving 10% of the construction budget.

ADDITIONAL SOLUTIONS
FOR BRIDGE PROJECT DELIVERY



FOR PROJECT MANAGERS

iTwin® Design Review

You no longer need native desktop apps to share and review design files. iTwin Design Review is web/cloud-based and always current:

> Run reports any time and view historical changes
> View civil quantities from within the tool
> One less deliverable to print
> Accessible to all team members

FOR BRIDGE DESIGN

ProStructures

Coupled with OpenBridge, you can ensure your steel and concrete structures are designed efficiently and accurately:

> Leverages an open modeling environment
> Includes customizable user standards, providing more design flexibility
> Easily produces or adds structural detailing

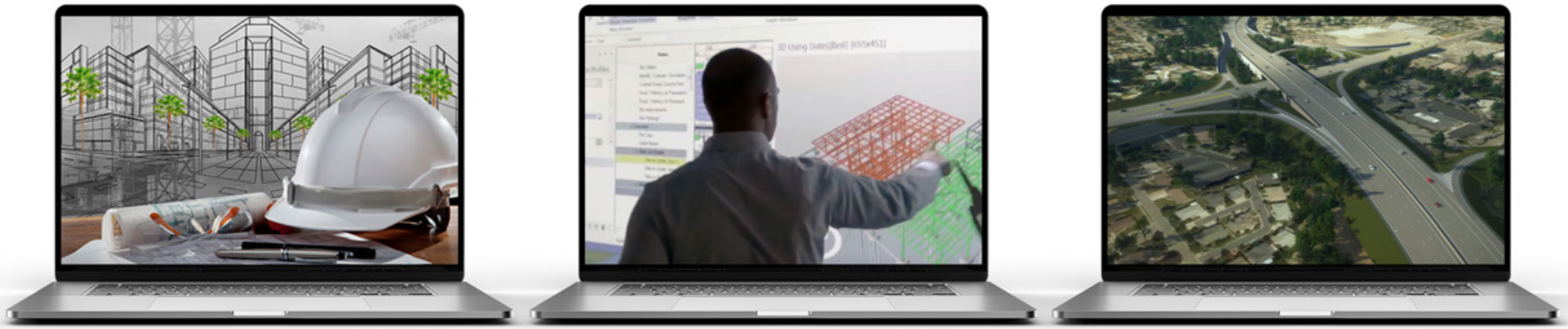
FOR COLLABORATION

ProjectWise® 365

A cloud-based connected data environment that allows you to easily manage, store, and share information:

> Leverages Microsoft 365 technology
> Makes collaborative BIM methodologies accessible and affordable
> Eliminates paper-based workflows
> Includes third-party PDF review capabilities

END-TO-END SOLUTIONS
FOR INFRASTRUCTURE PROJECTS



FOR SURVEYORS/INSPECTORS

ContextCapture

Rapidly capture the "as-built" condition of an existing site or asset using ContextCapture to quickly produce engineering-ready 3D models from photographs.

FOR CONSTRUCTION

SYNCHRO®

Improve safety, reliability, and predictability of construction projects, saving money by avoiding rework and identifying schedule issues ahead of time with SYNCHRO.

FOR ASSET MANAGEMENT

AssetWise®

Collect, analyze, and control relevant asset information, to mitigate risk, increase operational efficiency, and ensure regulatory compliance with AssetWise.

PARTNERSHIP FOR SUCCESS

Your success goes beyond software. It is also dependent on doing business the way that best serves your organization. That is why we have a variety of subscription and license options as well as 24/7/365 support to ensure you are up and running on your software quickly and continuously.

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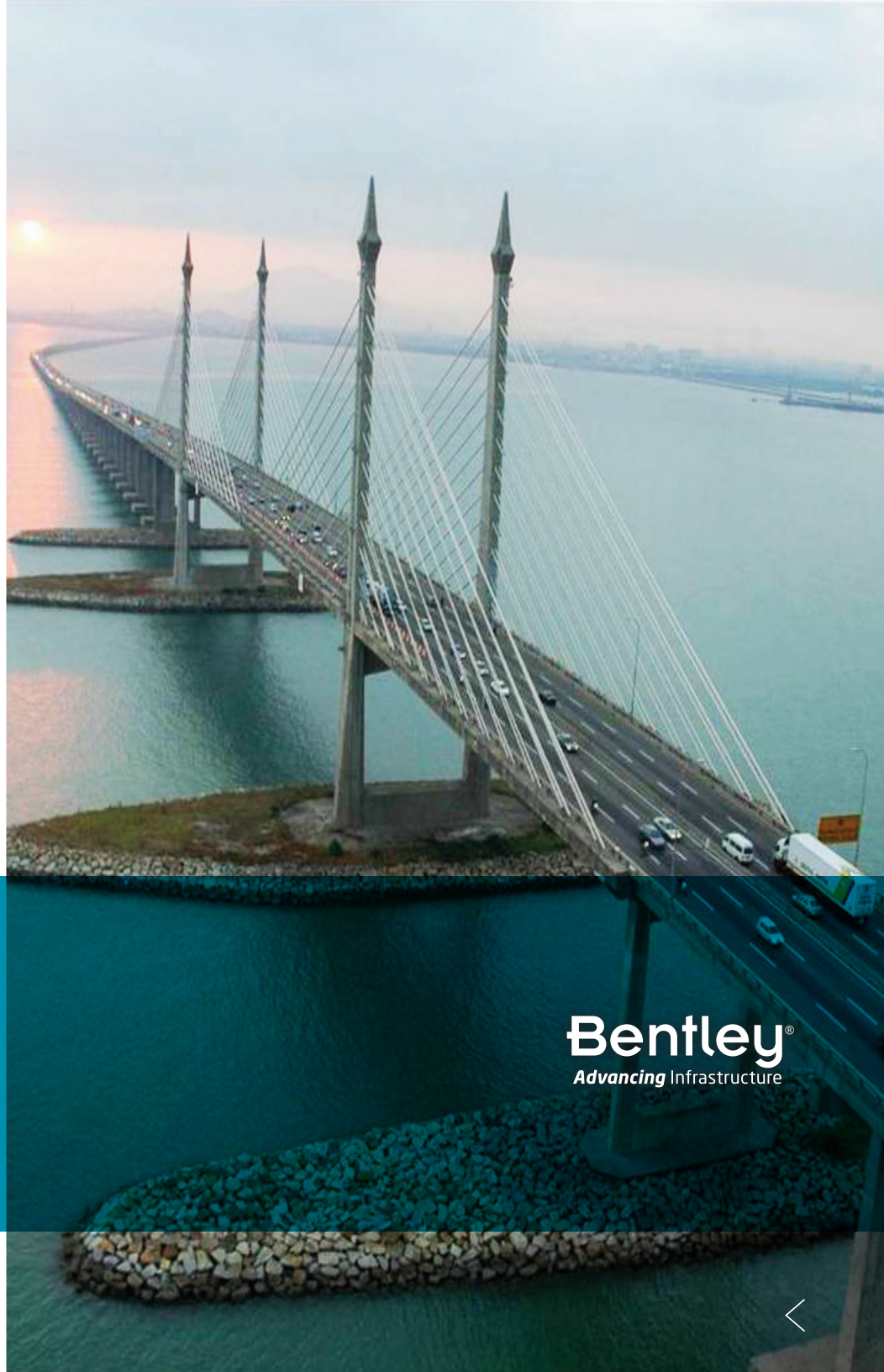
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