



News Release
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Leading Civil Engineers Credit Bentley's *OpenRoads* 'BIM Advancements'

*Introducing OpenRoads CONNECT Edition, OpenRoads Navigator CONNECT Edition,
and OpenRoads ConceptStation*

LONDON – The *Year in Infrastructure 2015* Conference – 3 November 2015 – Bentley Systems, Incorporated, a leading global provider of comprehensive software solutions for *advancing infrastructure*, today reported that [*OpenRoads*](#) is setting the pace for civil and transportation engineers, contractors, governments, and owner-operators that are meeting today's design, construction, and operations challenges by working more productively, collaborating globally, and delivering better-performing infrastructure assets. Among the many projects crediting *OpenRoads* are 52 nominees, spanning 13 innovation categories, in the 2015 *Be Inspired* Awards program. Examples of projects that have benefited from *OpenRoads*' 'BIM advancements,' along with a brief description of advantages gained, immediately follow the product advancement update below.

Product Advancement Update: *OpenRoads CONNECT Edition*

Dustin Parkman, Bentley vice president, product development, road, rail, and site design, said, "With our most recent V8i versions of *OpenRoads* and our sewer and stormwater offerings having led the way through unprecedented integration between civil design and analysis, here at *The Year in Infrastructure 2015* we turn our attention to the even more comprehensive integration of the *OpenRoads* [*CONNECT Edition*](#)."

“*OpenRoads* is already known for empowering civil infrastructure project teams to accelerate design, produce intelligent 3D models that enable construction-driven engineering, share information across project teams, and facilitate project delivery. With the *OpenRoads CONNECT Edition*, we complete the reach of our common modeling environment across roads, bridges, rail, geotechnical, and site optimization.

“With this month’s General Access to the *OpenRoads Navigator CONNECT Edition* app, and our new *OpenRoads ConceptStation* available for Limited Access in 2016, we are advancing comprehensive project delivery from *conceptioneering* through field workflows and next, construction modeling.”

OpenRoads Navigator CONNECT Edition App

Bentley’s *OpenRoads Navigator CONNECT Edition* app provides easy-to-use workflow access to civil design and pay item information in the field. It supports teams working better together to speed approvals and resolve issues during design, construction, and operations. [*OpenRoads Navigator*](#) integrates with [*ProjectWise*](#) to support collaboration for all team members and enable even faster resolution of field issues, resulting in better decisions throughout the lifecycle of a project.

OpenRoads ConceptStation

The new *OpenRoads ConceptStation CONNECT Edition* introduces *conceptioneering*. Through *conceptioneering* at the project outset, users are able to balance the demands of creative infrastructure designs with the financial, environmental, and engineering performance requirements of modern infrastructure projects. In *conceptioneering*, users consider the larger issues to help shape the project’s approach to meeting the programmatic requirements. Accordingly, *conceptioneering* spans context capture through compelling communication of a design proposal. Throughout the project, users explore design alternatives through *optioneering*, applying engineering analyses to improve decision making.

OpenRoads ConceptStation will help users to explore preliminary design options, leverage functional component catalogs, optimize project performance, and rapidly make decisions in the pre-bid phase to avoid high-cost errors. This conceptual design workflow takes full advantage of reality modeling – first to enable engineering in context, including *reality meshes* from [ContextCapture](#), and then to enliven the engineered environment through [LumenRT](#), including moving traffic and dynamic landscaping. With *OpenRoads ConceptStation*, engineers can evaluate designs and associated costs faster and more easily, present projects through immersive visualization, and continuously advance conceptual designs through project delivery by way of Bentley’s [CONNECT Edition](#) common modeling environment.

Examples of Projects Crediting OpenRoads

Enabling Global Supply Chain Collaboration While Enhancing Quality through Standards

AECOM is a premier, fully integrated professional and technical services firm positioned to design, build, finance, and operate infrastructure assets around the world for public- and private-sector clients. Its **Roadmap for the Development of the E4 from Ljungby to Toftanäs project in Småland, Sweden**, involved more than 15 sub-consultants located in different locations, including different countries. The challenge was to provide design standards to ensure quality control and implement a well-defined data environment workflow. *OpenRoads* was used to define civil software standards across all design teams. It allowed extensive utilization of 3D models to streamline collaboration across all disciplines and provide earlier clash detection and resolution to reduce errors in the field. [ProjectWise](#) provided the common data environment to be used by all team members. Using both applications together allowed AECOM to increase overall project performance and deliver a higher-quality design.

Leveraging Design-time Visualization to Help Gain Project Approval

Louis Berger is a leading global professional services corporation that helps clients solve complex infrastructure and development challenges. For the **I-11 Boulder City Bypass project in Nevada, U.S.**, the company produced a 3D animation of the critical mountain-pass section of the bypass just before the Mike O’Callaghan–Pat Tillman Memorial Bridge. The summit of the mountain pass provides panoramic views of Lake Mead and nearby mountain ranges. The design needed to provide a scenic overlook and dedicated wildlife crossing bridge before the summit. The visualization was needed to illustrate the new design at public meetings and on YouTube to gain public project approval. The team used edge-of-pavement and striping curves from the [OpenRoads](#) digital terrain model (DTM) to model the roadways and extensive cut-and-fill sections. The visualization was invaluable in helping not only the public but also the lawmakers clearly understand the road design.

Leveraging Benefits Tenfold, from Subsurface Utility Engineering

Utility Mapping Services, Inc., provides Subsurface Utility Engineering (SUE) services for site developments and transportation projects. For its project encompassing the installation of a **Puget Sound Energy 8-inch, high-pressure natural gas main along SR510 in Lacey, Washington, U.S.**, the firm used *OpenRoads* and [Bentley Subsurface Utility Engineering](#) to model the utility infrastructure and avoid potential utility conflicts. The result was reduced costs from unnecessary utility relocations, avoidable construction delays, and contractor change orders. Philip J. Meis, P.E., Utility Mapping Services principal engineer, said, “For a number of years now we’ve had the ability to acquire 3D data on existing utility infrastructure, but have not been able to effectively leverage the value of that data and the ‘engineering’ in our SUE services. With the *Bentley Subsurface Utility Engineering* application, the benefit and value of our services have increased by tenfold. ... We are now, from a holistic stance, able to provide the public, to whom we owe our paramount responsibility as professional engineers, the full benefit of SUE!”

Creating Design-Construct-Operate Model via Reality Modeling

African Consulting Surveyors, a leading geospatial service and solution provider, working with global professional services firm **SMEC**, used LiDAR, terrestrial, and mobile scanning in the **N1 Freeway Upgrade Mobile Laser Scanning Survey project for Cape Town, Western Cape, South Africa**. All three imaging datasets were combined into a single point cloud to ensure a detailed accurate 3D model for the design work. Taking advantage of *OpenRoads*' unmatched data acquisition capabilities, the design team created 3D models to ensure that all project information was available to all team members across disciplines such as bridges, drainage, road design, and construction. *OpenRoads* provided an intelligent and accurate design, helping minimize expensive construction errors. Brett Forbes, director business development, African Consulting Surveyors, said, "Bentley's technology allows users in all phases of the project lifecycle, including survey, *optioneering*, design, construction, maintenance, and operations, to effectively manage and utilize the geospatially correct laser point cloud in their particular discipline. This enables informed decision making and improved design, which reduces costs and optimizes project expenditure."

Meeting Budget Constraints with Information Sharing from Design through Construction

BCC Engineering, Inc., known for its work on massive infrastructure and transportation projects, was the lead design firm on the **SR 826/SR 836 Interchange Improvements – Section 5 Design-build Florida Department of Transportation Project in Miami, Florida, U.S.** Using Bentley's *OpenRoads*, [*LEAP Bridge*](#), and [*STAAD*](#), the team developed cost-saving innovations that brought the project within FDOT's budget constraints. *OpenRoads* enabled information sharing among the large design team and allowed for standardization and efficiencies that could be used from design through construction by all disciplines. Jose A. Muñoz, PE, president, BCC Engineering, said, "Bentley's software solutions provide BCC Engineering with the tools to confidently turn complex plans inside out to create better built designs and more cost-effective solutions to meet the needs of our clients."

For additional information:

- [OpenRoads](#)
- [The Be Inspired Awards Program](#)
- [The Year in Infrastructure 2015 Conference](#)

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About *OpenRoads*

[OpenRoads](#), Bentley's successor to its *InRoads*, *GEOPAK*, and *MX* offerings, continues to push the envelope in road design, construction, and operations. Meeting the needs of multi-discipline civil engineering projects, *OpenRoads*' industry-leading "BIM advancements" empower users through immersive modeling, design-time visualization, design intent capture and persistence, hypermodeling, model interoperability, and construction-driven engineering.

About Bentley Systems

Bentley Systems is a global leader in providing architects, engineers, geospatial professionals, constructors, and owner-operators with comprehensive software solutions for advancing the design, construction, and operations of infrastructure. Bentley users leverage information mobility across disciplines and throughout the infrastructure lifecycle to deliver better-performing projects and assets. Bentley solutions encompass *MicroStation* applications for *information modeling*, *ProjectWise* collaboration services to deliver *integrated projects*, and *AssetWise* operations services to achieve *intelligent infrastructure* – complemented by worldwide professional services and comprehensive managed services.

Founded in 1984, Bentley has more than 3,000 colleagues in over 50 countries, more than \$600 million in annual revenues, and since 2008 has invested more than \$1 billion in research, development, and acquisitions.

Additional information about Bentley is available at www.bentley.com and in [Bentley's annual report](#). For Bentley news as it happens, subscribe to an [RSS feed](#) of Bentley press releases and news alerts. Visit [The Year in Infrastructure 2015 Conference](#) website for highlights of Bentley's premier thought-leadership event, being held November 3-5, 2015, in London, U.K. To view a searchable collection of innovative infrastructure projects from the annual *Be Inspired Awards*, access Bentley's [Infrastructure Yearbooks](#). To access a professional networking site that enables members of the infrastructure community to connect, communicate, and learn from each other, visit [Bentley Communities](#).

To download the *Bentley Infrastructure 500 Top Owners* ranking, a unique global compendium of the top public- and private-sector owners of infrastructure based on the value of their cumulative infrastructure investments, visit [BI 500](#).

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