



New Open Applications Advance Comprehensive Modeling Environment for Multidiscipline Collaboration

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OpenSite Designer, OpenBuildings Designer, OpenBridge Designer, and OpenFlows FLOOD further extend Bentley's design engineering and analysis portfolio

LONDON, U.K. – The Year in Infrastructure 2018 Conference – 18 October 2018 – Bentley Systems, Incorporated, the leading global provider of comprehensive software solutions for advancing the design, construction, and operations of infrastructure, today launched *OpenSite Designer*, a built-for-purpose application for the design and construction of civil site projects. It also launched *OpenBuildings*, bringing together its *AECOSim* building design and *Speedikon* factory and industrial design applications; and announced the availability of *OpenBuildings Station Designer*, a specialized application for designing rail and metro stations. At the same time, Bentley announced the availability of *OpenBridge Designer*, which combines Bentley's bridge modeling, analysis and design capabilities into one comprehensive package, and *OpenFlows FLOOD*, a flood analysis and early warning system.

In addition, in pursuit of its 'industrialization' strategy, Bentley announced it has rebranded under its **Open** portfolio several of its applications based on *MicroStation* technology which collectively accelerate the advancement of its comprehensive modeling environment by connecting digital workflows across disciplines and sharing digital components in its Connected Data Environment (CDE).

Bhupinder Singh, chief product officer, Bentley Systems, said, "**Open** has three meanings. First, it signifies *open* to multiple disciplines. Second, it means *open* to analysis and simulation. Using different applications, two different disciplines, for example, a geotechnical engineer and a structural engineer, can iterate on the same dataset in our comprehensive modeling environment, providing a 'digital feedback loop' and enhancing their collaboration across BIM workflows. And third, because *MicroStation* technology underpins *Open* applications, users can produce multidiscipline deliverables and accomplish multidiscipline clash resolution from any **Open** application. Bentley's comprehensive modeling environment is 'Open' for collaborative digital workflows."

Fully 49 of the 62 finalists and awardees of this year's *Year in Infrastructure Awards* credited collaborative digital workflows in their successful outcomes. For example, *OpenRoads*, Bentley's civil design applications for road networks, is credited by 22 awards finalists' projects in 12 categories, and *OpenPlant*, Bentley's plant design project management applications, is credited by 10 finalists' projects in 9 different categories. *ProjectWise* and/or *AssetWise* were credited by finalists' projects in 16 of 19 awards categories this year.

OpenSite Designer

The collaborative nature of digital workflows connecting analysis and simulation with design and modeling is exemplified in *OpenSite*, Bentley's new solution for the design and construction of civil site projects. *OpenSite* provides rapid site modeling and analysis, earthwork optimization and quantification, drainage and underground utilities, and automated project deliverables.

OpenSite Designer provides the most comprehensive site design workflow available including reality modeling, geotechnical, underground utilities, stormwater drainage, terrain modeling, detailed drawing production, and visualization. *OpenSite Designer* optimizes design outcomes with multidiscipline information modeling and analysis. Interoperating with *PLAXIS*, Bentley's newly acquired geotechnical engineering solution, site plans can be enhanced with new information about the active properties of soil including bearing capacity, stresses, and displacement.

OpenBuildings Designer

The newly launched *OpenBuildings Designer* incorporates all of the capabilities of *AECOSim Building Designer* as well as Components Center and a range of new capabilities and standards including EnergyPlus, a building energy model to help users comply with ASHRAE standards in the US, and UK energy requirements; support of international standards including IFC 2x3, IFC4 Reference View, COBie, and Singapore's Building and Construction Authority; new capabilities to design curtain wall systems; and *OpenBuildings Speedikon*, a leading application for industrialized design and construction. *OpenBuildings Designer* takes advantage of collaborative digital workflows with other applications in Bentley's **Open** portfolio, for example templates in *OpenBuildings Station Designer* for tunnel segments created through GenerativeComponents based on linear alignment from *OpenRail*. Showcasing their robustness and versatility, *OpenBuildings* applications were credited by 32 of 62 of the *Year in Infrastructure Awards* finalists projects in 15 of 19 categories.

OpenBridge Designer

OpenBridge Designer is a new, all-encompassing application that integrates the modeling capabilities of *OpenBridge Modeler* and the analysis and design features of *RM Bridge*, *LEAP Bridge Concrete*, and *LEAP Bridge Steel* to meet the design and construction needs of both concrete and steel bridges. *OpenBridge Designer* enables bridge designers to rapidly create an intelligent, parametric bridge model, fully integrated with analysis and design, as well as drawings. It enables seamless synchronization of various disciplines for analysis, design, detailing, documentation, construction engineering and load-rating.

OpenFlows FLOOD

Bentley also announced the rebranding of its Haestad water modeling and ACTION Modulers flood analysis product lines to form *OpenFlows* for water districts, sewer utilities and flood plain managers. *OpenFlows* extends smart water networks capabilities with GIS-based asset-centric information for water loss reduction, water operations, flood prediction and prevention. *OpenFlows FLOOD* continuously monitors watersheds, integrating data from real-time monitoring stations and numerical models to calculate risk levels. *OpenFlows FLOOD* mitigates flood risk, improving understanding of the processes involved in flood generation, and transmitting early alerts to reduce the impact caused by floods.

Connecting Digital Workflows Across Disciplines

Applications for analysis and simulation, on the one hand, can collaboratively and iteratively work with applications for design and modeling, and on the other, connect operational workflows and converge the work of different disciplines. Collaborative digital workflows are characterized by data

captured or created for one purpose being accessed and used by other applications for other purposes thereby saving time, minimizing rework, and improving data quality over the asset lifecycle.

An example of multidiscipline collaboration with *OpenFlows* involves workflows that use *ContextCapture* to create a 3D reality mesh, feeding into *OpenFlows FLOOD* modeling and using the terrain as input to various analyses in a single review environment for visualization and presentation to stakeholders using *LumenRT*.

Connecting analysis with modeling in another *Open* collaborative digital workflow involves the layout of road geometry, and hydraulic analysis and design using storm analysis tools including the determination of the size of storm inlets, pipes, depth of pipes, and manholes. The collaborative nature of the workflow enables clash detection in the subsurface environment, and iteration and adjustment as needed, to confirm functional and physical characteristics.

Other instances of *Open* collaborative digital workflows connecting design and analysis include *OpenUtilities* with Siemens' PSS©SINCAL, which helps utilities improve resilience and deal with weak spots in the grid; and *OpenBuildings Station Designer* with *LEGION* pedestrian simulation, to enable designers to design, test, and validate simulations of scenarios for pedestrian traffic.

Rebranding

Completing its announcement about *Open* applications, Bentley said that Bentley Map will be rebranded as *OpenCities Map*; and *OpenComms*, aimed primarily at multisystem operators, will incorporate Bentley Fiber and Bentley Coax.

About Bentley Systems

Bentley Systems is the leading global provider of software solutions to engineers, architects, geospatial professionals, constructors, and owner-operators for the design, construction, and operations of infrastructure. Bentley's *MicroStation*-based engineering and BIM applications, and its digital twin cloud services, advance the project delivery (*ProjectWise*) and the asset performance (*AssetWise*) of transportation and other public works, utilities, industrial and resources plants, and commercial and institutional facilities.

Bentley Systems employs more than 3,500 colleagues, generates annual revenues of \$700 million in 170 countries, and has invested more than \$1 billion in research, development, and acquisitions since 2012. From inception in 1984, the company has remained majority-owned by its five founding Bentley brothers. Bentley shares transact by invitation on the NASDAQ Private Market; strategic partner Siemens AG has accumulated a non-voting minority stake.

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Bentley, the Bentley logo, AECOSim Building Designer, AssetWise, ContextCapture, LEGION, LumenRT, MicroStation, OpenBridge, OpenBuildings, OpenCities, OpenCities Map, OpenComms, OpenFlows, OpenRoads, OpenUtilities, and ProjectWise are either registered or unregistered trademarks or service marks of Bentley Systems, Incorporated or one of its direct or indirect wholly owned subsidiaries. All other brands and product names are trademarks of their respective owners.

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