News Release
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Leading Architectural and Design Practices Credit Bentley's *AECOsim Building Designer* BIM Advancements

Intrinsic Incorporation of GenerativeComponents *Computational Design and* AECOsim Energy Simulator *Advance* Conceptioneering

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 how noteworthy building and infrastructure projects are benefiting from the pacesetting BIM advancements empowered by *AECOsim Building Designer* V8*i* for the architectural design and multi-discipline engineering of facilities. In the 2015 *Be Inspired* Awards program, 60 nominees, spanning 20 countries and representing a diverse range of infrastructure projects, credited Bentley's *AECOsim Building Designer* innovations. Examples of projects that have benefited from *AECOsim Building Designer*'s BIM advancements, along with a brief description of advantages gained, immediately follow the product advancement update below.

Product Advancement Update: *Conceptioneering* and *Optioneering*

Commenting on the latest advancements in *AECOsim Building Designer*, Santanu Das, Bentley Systems senior vice president, design and simulation, said, "Increasingly, *AECOsim Building Designer* is setting the pace for the unconstrained architectural design and engineering of buildings of any size or scope. Now with the V8*i* (SELECTseries 6) version, we've added innovative capabilities for what we call *conceptioneering*, bringing

analytical modeling and design modeling together in the early conceptual stages of a building project to help create effective design strategies to meet building performance objectives."

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.

In *AECOsim Building Designer* V8*i* (SELECTseries 6), *GenerativeComponents*' proven technology now intrinsically drives BIM intelligence for computational design. This enables designers to explore more possibilities in less time, create better designs, and efficiently create and manage complex geometric relationships.

The latest *AECOsim Building Designer* now also features enhanced integration with *AECOsim Energy Simulator* for indicative energy performance simulation at the *conceptioneering* stage to enable better-informed decisions. *AECOsim Building Designer* can produce Analytical Space Models at later stages for *optioneering* by *AECOsim Energy Simulator*'s more detailed energy analyses, to continuously assure that the high-performance potential is fully realized.

Das added, "In 2016, *conceptioneering* and *optioneering* for *AECOsim Building Designer* will be further extended through *CONNECT Edition Scenario Services*, a cloud-based service for unlimited computational capability. With more rapid turnaround for building analysis, users will be able to evaluate a far greater number of alternatives than would otherwise be possible, to further leverage the analytical modeling capabilities of *GenerativeComponents* and *AECOsim Energy Simulator*."

Examples of Projects Crediting *AECOsim Building Designer*

Interdisciplinary Federation Across Stakeholders

Morphosis Architects is an interdisciplinary practice involved in rigorous design and research that yields innovative, iconic buildings and urban environments. Morphosis recently employed *AECOsim Building Designer* on the **Bill and Melinda Gates Hall, Cornell University project in Ithaca, New York**. Throughout the design of the project an integrated and iterative 3D process was employed, which allowed Morphosis to efficiently and effectively communicate design ideas to consultants and the client. By using a federated approach, the design team was able to create a holistic view of the building and provide a single source of information for the project from early concepts through construction administration. The integrated model increased the design team's productivity and reduced the staff required to design, document, and coordinate the deliverables. Said Cory Brugger, director of design technology, Morphosis Architects, "The success of this highly innovative, award-winning project was supported by Bentley's modeling platform, which provided an environment for the development and communication of accurate and highly interoperable information for all stakeholders in the project."

A Construction Museum Dream: Halving Project Duration while Reducing Errors

Sichuan Provincial Architectural Design and Research Institute, a large architectural design consultant organization providing professional services to urban construction and development, employed *AECOsim Building Designer* on the **Panzhihua Three-line Construction Museum project in Sichuan, China**. This key cultural facility is innovatively shaped like flower petals and has a floor space of 40,000 square meters. *AECOsim Building Designer*'s advancements helped shorten the project time by 60 percent. In addition, they helped reduce design errors by 80 percent, increased design

depth by 50 percent, and shortened design time from an anticipated 14 months to 7 months.

Optioneering through Computational Design

Scheiwiller Svensson Arkitektkontor AB, a leading architectural firm in office, housing, retail, and industrial infrastructure, needed to maintain a very complex process involving several contractors in the creation of the **NOD open public arena and business center in Stockholm, Sweden**. *GenerativeComponents* was used at the beginning of the process to test some façade ideas, and *AECOsim Building Designer* was used for 3D simulation of installations and collision control. The ability to generate 3D PDFs made for fast communication with clients, consultants, and tenants, and proved to be crucial to the project being completed for lower than the estimated budget. Automated quantification and smart construction of 2D drawings from 3D models significantly reduced the team's workload.

Ensuring Quality and Precision for Sustainability

AG5 is a full service architectural studio focused on contextual sustainability, value design, and integrated technology. AG5 Partner Brian Sheldon said, "We employ BIM at an expert level to ensure quality and precision in our work, and we do this using Bentley's *AECOsim Building Designer*." AG5 used *AECOsim Building Designer* on the **Gran Rubina Tower in the Indonesian capital of Jakarta**. The tower was designed in partnership with PDW, an Indonesian architectural firm. AG5 won the 2014 International Property Awards architecture prize for the tower's first stage for its sustainable office complex. The 22-story tower uses 30 percent less energy than typical skyscrapers in the region.

About *AECOsim Building Designer*

AECOsim Building Designer empowers multi-discipline teams to deliver high-performance buildings through BIM advancements. It provides a robust, scalable, and

computational design environment that enables architects and engineers to easily and efficiently collaborate, integrate information, clearly communicate design intent, model anything, and simulate and predict real-world performance, including evaluating alternatives through *conceptioneering* at the project outset and *optioneering* throughout.

For additional information:

- *AECOsim Building Designer* V8*i* (SELECTseries 6)
- *AECOsim*
- The *Be Inspired* Awards Program
- The *Year in Infrastructure 2015* Conference

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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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Images

Scheiwiller Svensson Arkitektkontor AB

- GenerativeComponents was used to quickly test facade ideas for this flexible building which can be used in many different ways over time for offices, education, and public functions.
  http://ftp2.bentley.com/dist/collateral/docs/corporate/press_kits/YII_2015/press_releases/GenerativeComponents_img1.png

- AECOsim Building Designer was used throughout the lifecycle of the project for things like collision control, quantification of parts and building components, and facade and interior renderings of both the interior spaces and objects.
  http://ftp2.bentley.com/dist/collateral/docs/corporate/press_kits/YII_2015/press_releases/Scheiwiller_Svensson_Arkitektkontor_AB_img3.jpg

Sichuan Provincial Architectural Design and Research Institute

- Using AECOsim Buidling Designer the Panzhihua Three-line Construction Museumn was designed to resemble the shape of flower petals with a floor space of 40,000 square meters.
  http://ftp2.bentley.com/dist/collateral/docs/corporate/press_kits/YII_2015/press_releases/Panzhihua_Museum_img1.jpg

- AECOsim Building Designer significantly reduced design time and design errors for the Panzhihua Three-line Construction Museum - the first museum in Panzhihua.
  http://ftp2.bentley.com/dist/collateral/docs/corporate/press_kits/YII_2015/press_releases/Sichuan_Provincial_Architectural_Design_and_Research_Institute_img3.jpg