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The *Year in Infrastructure 2016* Conference Showcases China's BIM Advancements and *Industrialization* of its Building Industry

Unprecedented Scope and Diversity of Finalists and Awardees;
CABRTech CEO Mr. Jiefeng Xu Addresses Building *Forum*

LONDON – The *Year in Infrastructure* 2016 Conference – 1 November 2016 – Bentley Systems, Incorporated, a leading global provider of comprehensive software solutions for *advancing infrastructure*, today reported respects in which China sets the pace globally for BIM advancements. This year, the independent juries of the *Be Inspired* Awards selected nine Chinese projects among 54 finalists, an unprecedented performance. In particular, the Chinese building industry is rapidly applying BIM advancements to achieve the benefits of "*industrialized*" processes. Mr. Jiefeng Xu, the CEO of CABRTech, the software unit of the China Academy of Building Research, addressed the Conference's Building Forum about the *industrialization* of the building industry and CABRTech's adoption of Bentley's BIM platform for its new PKPM-BIM software product.

CABRTech

CABRTech, the leader in Chinese building software, continues to advance "BIM for Buildings" in China through its new PKPM-BIM software product, developed to meet the specific demands and challenges of the Chinese building industry—including local standards and especially the use of precast building components. CABRTech's PKPM structural software is already the local market standard in China. Significantly, to develop PKPM-BIM for the Chinese market, CABRTech selected Bentley's BIM platform technology and worked closely with Bentley's

technical teams from the outset. PKPM-BIM was released this summer and is being widely promoted and successfully adopted to advance “BIM for Buildings” in China.

For comprehensive project delivery, PKPM-BIM can take advantage of Bentley’s *ProjectWise* collaboration system, which can be delivered with PKPM-BIM. PKPM-BIM can also leverage the interoperability of Bentley’s BIM platform for integration across infrastructure disciplines, which is particularly important considering the “campus scale” of *industrialized* building projects in China.

Chinese Finalists and Awardees at this year’s Conference who are showcasing significant BIM advancements include:

Finalist in *Innovation in Building*: Multi-Discipline Design Coordination and Design Simulation for Cultural Sports Center

China Aerospace Construction Group Co., Ltd., working with Chongqing Liansheng Construction Project Management, provided project management and integrated design and construction services for the CNY 720 million **Inner Mongolia Ethnic Minorities Cultural Sports Center** in Hohhot, China. BIM advancements enabled by *AECOsim Building Designer* provided 3D project control, multi-discipline design coordination, building optimization, and reduction in project costs. Additionally, design time, errors, material quantity, and rework rates were reduced. In one case, optimization reduced earthwork from 370,000 to 70,000 cubic meters, saving more than CNY 20 million. Zhao Yanyan, director, BIM Center of China Aerospace Construction Group Co., Ltd., said, “The integration of information and modeling through BIM technology has enabled close collaboration between project teams, clearer communication among stakeholders through visualization, and has minimized errors through clash detection and preliminary simulation of complex processes.”

Special Recognition Award Winner for *Project Delivery*: Collaborative Network Unifies 350 Project Teams for Beijing’s Tallest Building

CITIC HEYE Investment Co., Ltd., headquartered in Beijing, is a leader in real estate development, engineering contracting, development, and construction. Working in concert with as many as 350 design, construction, and consultant teams, CITIC HEYE is involved in an ambitious development program in Beijing's central business district that includes nine ultra-high-rise buildings of more than 200 meters. The crown jewel will be the **CITIC Tower** (a.k.a., **China Zun**), at 528 meters the tallest building in Beijing, and the first structure over 500 meters to be built in an area with 8-degree seismic fortification intensity. The project team is using dual internal and external *ProjectWise* platforms to ensure timely synchronization of project data and documents across the collaborative network, helping to deliver the project 1.4 times faster. A CITIC Heye Investment Co., Ltd manager said, "Using *ProjectWise* we achieved optimal data efficiency, the lowest cost, and the most effective management of our project information. It has enabled synchronous design, collaborative work across companies involved in the project, and efficient construction."

Finalist in *Innovation in Utilities and Communications*: Mega-substation Inside City Building Meets Energy Needs

Hubei Electric Engineering Corporation (HEEC), a subsidiary of POWERCHINA Limited, specializes in the planning, design, and construction of power generation plants, power grids, substations, and related infrastructure. Its CNY 172 million **Miaoshan 220kV Secondary Transformer Substation** project was designed to meet Year 2030 energy demands in Wuhan, Hubei province. HEEC laid out and designed the three-story facility, which housed three sets of 240-megavolt ampere transformers and included multiple outgoing lines that took into account the constraints of the dense urban location. HEEC used Bentley *AECOsim Building Designer*, *ProjectWise*, *Substation*, *Raceway and Cable Management*, and *ProStructures* to design the substation and facilitate project collaboration. *ProjectWise* allowed the project team to work in a unified model space, increasing efficiency and helping to solve clashes. Avoiding rework in at least 10 instances saved CNY 2 million. When completed, the substation will optimize the power grid and improve the quality of life for more than 400,000 people. Wang Wei, team leader, digital center, Hubei Electric Engineering Corporation, said, "Bentley's BIM solution has been fully applied across disciplines and all stages of the project, resulting in significant design

improvements and greater project quality and efficiency, and providing strong technical support for the construction, operation, and maintenance of the substation."

Finalist in *Innovation in Building*: Iconic Commercial Tower Leverages Optioneering through BIM Advancements

Morphosis, a North American-based design architect specializing in innovative buildings and urban environments, designed a mixed-use commercial building in Shenzhen using an innovative approach to work and social spaces. With a structural steel skeleton, faceted façade, and offset core configuration, the design of the 350-meter-tall **Hanking Center Tower** posed substantial challenges for the project team. Morphosis implemented a comprehensive BIM strategy to create a clearinghouse for design data and documentation. The integrated 3D design process, seamless workflow, and cross-platform interoperability enabled unprecedented design exploration and coordination, and iterative modeling expedited the optioneering and rapid prototyping of the building. Cory Brugger, director of design technology, Morphosis, said, "The success of this highly innovative, iconic skyscraper is supported by Bentley's modeling platforms, which provided an environment for the development and communication of accurate and highly interoperable information for the international project team."

Finalist in *Innovation in Land Development*: Cost Reduction through Process Optimization for Olympics Project

Beijing Shougang International Engineering (BSIET), an international engineering company headquartered in Beijing, provides engineering services for municipal, architectural, and other industries. On behalf of the 2022 Winter Olympic Organizing Committee, BSIET is designing and constructing the future Olympics plaza in Shougang, a historic industrial site located in Shijingshan District, Beijing. The project, **Xishi Winter Olympics Square Project of Shougang Industrial Area Transformation**, consists of legacy facilities in a protected area with strict building requirements. The project team's challenge is to build a plaza that retains the area's original steel factory aesthetic while repurposing buildings with green technology. Using *AECOsim Building Designer*, *Raceway* and *Cable Management*, *Descartes*, *GEOPAK*, *Map*,

MicroStation, *Navigator*, *OpenPlant*, *ProjectWise*, *ProStructures*, *PowerCivil*, and *Pointools* has helped BSIET meet rigorous project parameters and optimize many processes. Li Hongguang, project manager of Xishi Winter Olympics Square Project of Old Shougang Industrial Area Transformation, said, "Bentley's BIM solutions have benefited every stage of the project, including complete data integrity and a seamless data connection, allowing all our project teams to focus only on the project itself and not on the technology."

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 2009 has invested more than $1 billion in research, development, and acquisitions.

Additional information about Bentley is available at www.bentley.com. For Bentley news as it happens, subscribe to an RSS feed of Bentley press releases and news alerts. Visit The *Year in Infrastructure* Conference website for information on Bentley's premier thought-leadership event. 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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