



News Release

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ESM Productions Credits Bentley Systems' *Reality Modeling* Technology in Its Successful 'Engineering' of Philadelphia Papal Visit

*'Virtuality' Breakthrough Advances Project Planning and Risk Reduction
for World-class Public Event*

LONDON – The *Year in Infrastructure 2015* Conference – 2 November 2015 – ESM Productions, a full-service event production company, and Bentley Systems, a leading global provider of comprehensive software for *advancing infrastructure*, today jointly acknowledged the significant contribution of Bentley colleagues, and technology advances, to ESM's successful planning of the visit of Pope Francis to Philadelphia during the week of September 21, 2015, including the anchor event of the Eighth World Meeting of Families Congress. In planning this massive and multi-faceted event, ESM needed to coordinate with Philadelphia's many public services, as well as the U.S. Secret Service, Pennsylvania state agencies, and the local Philadelphia Catholic Diocese. This coordination was made more effective and timely through Bentley's *reality modeling* technology, as well as services provided by a legion of Bentley colleague volunteers.

ESM had witnessed firsthand Bentley's new *reality modeling* capabilities at a Bentley event that they produced, and was struck by its significant potential to accelerate their planning of the pope's visit to Philadelphia. Upon learning of this interest, Bentley Systems CEO Greg Bentley invited Bentley colleagues (and retirees) to donate their time and talent to a "pro bono" effort on the part of Bentley Systems to help assure its headquarters region's successful hosting of the pope and the unprecedented number of expected visitors. Some 30 colleagues participated in exploring how *reality modeling* could expedite the design and engineering of substantial temporary facilities for this highly visible, fast-tracked project, while supporting the extreme security workflows required.

Scott Mirkin, co-founder and executive producer, ESM Productions, said, "We wouldn't be chosen to produce world-class events unless we did them well, and we do them well because we innovatively apply the appropriate and most effective technologies. The minute we saw Bentley's *reality modeling* in action, we knew it could provide breakthrough benefits – but given the exceptionally tight deadlines, we had limited time, in our own right, to experiment with it. I thank the Bentley colleagues who offered their support and applied Bentley's *reality modeling* within their engineering tools in a way that had never been done before. This jointly coordinated effort enabled our event organizing team to leverage *reality modeling* to speed stakeholder buy-in and to ensure that one of the country's largest public events was executed with great success.

"In the end, we experienced dramatic risk reduction, better decision making, exceptional timeliness, and greater efficiency. The goal we set with Bentley to test the applicability of *reality modeling* as a mission-critical event planning technology was completely validated, and we are now planning to offer this new value to our clients going forward. We've already had conversations with many of the agencies and teams involved in the execution of this project and discussed the many benefits achieved by having a virtualized experience created through *reality modeling*. In fact, we were so impressed that we are creating a documentary highlighting our use and the outcomes we achieved." For a preview of this documentary, visit <https://youtu.be/dYJd36opBmY>.

Bentley's *reality modeling* process involved three steps:

1. ***Capture reality.*** Bentley's [*ContextCapture*](#) software was used to build a highly detailed, photo-textured 3D "reality mesh" model from 28,000 digital photographs, with unprecedented geometrical accuracy. Base imagery was provided by Pictometry, high-resolution aerial photography was taken by helicopter by AEROMETREX, and ground footage was captured by Bentley volunteers – including building facades, street views, and the inside of the Cathedral Basilica of Saints Peter and Paul.
2. ***Engineer in context.*** The highly precise 3D model was populated with 2D and 3D maps and designs, resulting in a 28 GB dataset. The dataset was used to communicate the details for the 56,400 temporary structures, main and secondary stages and event seating, 33 miles of security barricade perimeter, special U.S. Secret Service security requirements, impact of local road closures to pedestrian traffic flows, and more.
3. ***Enliven the engineered environment.*** Bentley's [*Lumen RT*](#) software was used to add motion and additional content to simulate the expected operational experience, a great help to decision makers. The team added moving people in crowds, vehicles flowing in traffic, dynamic sunlight conditions, and seasonal trees and plants.

Buddy Cleveland, a recently retired Bentley senior vice president who led the Bentley team, said, "This was a highly public and complex project, with many stakeholders and an impossible timeline. We got involved right in the middle of it. The papal visit required effective planning for the construction and management of temporary facilities and utilities amidst a busy urban infrastructure. The most expedient way we could add value to this project was to create, just in time, a comprehensive, highly detailed 3D model of Philadelphia that was visually realistic and dimensionally accurate, and then seamlessly integrate that model with engineering models produced by our tools. Both ESM and Bentley are very grateful to our partners, Pictometry and AEROMETREX, who stepped up

to provide the base imagery, aerial imagery, and processing with [ContextCapture](#) to create the initial reality mesh.”

He continued, “I am deeply appreciative of my colleagues at Bentley who dedicated their time for this worthwhile project, in particular 3D developer extraordinaire Ray Bentley, who swiftly delivered many innovative software enhancements that enabled the project team to effectively apply *ContextCapture*, [MicroStation CONNECT Edition](#), [ProjectWise](#) and [LumenRT](#) in new ways for this major global event. Finally, we’re very grateful to ESM and the city of Philadelphia for their foresight and willingness to apply new technology. This project certainly validated the value of *reality modeling* technologies for the planning and engineering of a project of this scale.”

For additional information:

- [ContextCapture](#)
- [The Year in Infrastructure 2015 Conference](#)

About ESM Productions

ESM Productions is a premier, full-service event production company that specializes in the creative design, planning and execution of high-profile events and broadcast productions. ESM supplies the innovative expertise, resources and state-of-the-art technology to meet a wide variety of production needs and challenges. Scott Mirkin is one of America’s most successful event producers and a pioneer in large audience and high quality live streaming events. He has been responsible for producing for a wide array of important political icons, religious figures, and entertainment moguls, as varied as President Barack Obama, Pope Francis, and Jay Z.

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.

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