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William S. Derence, LEED® O&M

Director of Virtual Construction

Qualifications

- *14 years of construction experience*
- *Master of Business Administration, 2010, University of Pittsburgh*
- *Bachelor of Science, 2002, Civil Engineering, Bucknell University*
- *LEED® Accredited Professional – Operations & Maintenance*
- *Approved instructor, AGC's BIM Education Program*
- *AGC Certificate of Management - Building Information Modeling*
- *AIA-MBA Joint Committee – BIM Task Force*
- *Engineer-in-Training, 2002*
- *OSHA 10-Hour Certification*
- *OSHA Excavation Competent Person Certification*
- *BIM software expertise includes DProfiler, Revit, and Navisworks*

Bill is responsible for implementation of Building Information Modeling (BIM) at Mascaro for spatial program validation, clash detection, and quantity take-offs.

BIM Experience

Steidle Building Renovation, University Park, Pennsylvania. As the BIM model manager during the construction and project turnover phases of this collaborative BIM project, Bill's duties include aiding in the refinement of the BIM Project Execution Plan, acting as the main point of contact for BIM implementation, distributing design and contractor component models, and aiding the MEP coordinator in the 3D coordination effort. In addition, he will lead the efforts to produce a 3D site logistics plan, integrate the construction schedule with the design models to allow for a visual depiction of the schedule, as well as provide aggregate construction and model data for turnover to the University for future integration with their Facilities Management software.

Industrial Scientific Corp (ISC) Global Corporate Headquarters, Pittsburgh, Pennsylvania. Bill has been commissioned to serve as the BIM model manager for this project. His duties include leading the development of the BIM Project Execution Plan, acting as the main point of contact for BIM implementation on the project, distributing design and contractor component models, and leading the 3D coordination effort. Revit was utilized to produce the structural and architectural design models. The design models were infused with schedule activity IDs to allow for integration with the project schedule in the Navisworks environment, allowing for a visual build-up of the construction schedule.

Cardinal Wuerl North Catholic High School Project, Cranberry, Pennsylvania. Bill served as the BIM administrator on this collaborative BIM project. His duties included leading the development of the BIM Project Execution Plan, acting as the main point of contact for BIM implementation on the project, distributing design and contractor component models, and leading the 3D coordination effort. Revit was utilized to produce the design model. Basic quantity take-offs were conducted with the design models. The design models were infused with schedule activity IDs to integrate with the project schedule in the Navisworks environment, allowing for a visual build-up of the construction schedule. Bill is currently leading the effort to integrate construction documentation and the final federated model, consisting of design and as-built contractor component models, with facility management software and the building automation system for use in the operations and maintenance of the facility.

Area 9 Steel Mill Expansion, Brackenridge, Pennsylvania. A highly detailed Revit model was produced for use in estimating this project to construct the Area 9 slab yard and transformer vaults consisting of building, cable tunnels, site retaining walls, and miscellaneous foundation work. Originally intended for quantity take-offs, the model was also integrated with the project schedule, and used by the Mascaro project team to make constructing the complex project understandable to all field personnel.

Speaking Engagements

- *DProfiler User's Conference June, 2010, "User Experiences with DProfiler Software --- Project examples and experiences (both good & bad)"*
- *AIA-YAF and MBA-YC Joint Fall Educational Social Event, October, 2010, "Use of BIM in Region --- Examples of how BIM has been used at Mascaro to date."*
- *Society of Fire Protection Engineers / American Society for Certified Engineering Technicians February, 2012, "BIM --- General description of BIM, current use in region, roadblocks, and benefits"*
- *BIM + Build Event, September 2012, "AIA-MBA BIM Task Force: Recommended Construction Practices–Section I-11 Building Information Modeling (BIM)"*
- *ESWP Speaker, October 2012, "BIM for Pittsburgh: How Building Information Modeling is Transforming the Way Buildings are Designed and Constructed"*
- *Ohio Construction Conference, March 2013, "BIM: Technology Enabled Collaboration" [presented in collaboration with the Diocese of Pittsburgh, Astorino, and Lighthouse Electric Company]*
- *Engineering Sustainability 2013, April 2013, "BIM: Enhancing the Sustainability of the Operations and Maintenance of Buildings"*
- *Bucknell University – Civil Engineering Lab Session, April 2013*
- *National Association for Industrial and Office Parks, June 2013*

NAF Forging Press Foundations, New Castle, Pennsylvania. A detailed Revit model was produced to ensure an accurate estimate, and provide 3D visualization and phasing demonstrations for this bid to construct foundations for a 190-ton building, a 50-ton building, and the forging press.

CSX – J&L Tunnel, Pittsburgh, Pennsylvania. Revit was utilized to produce a site logistics plan and 2D drawings describing how the crane would be erected and the tunnel roof beams would be sequenced for replacement.

CMU – Doherty Hall – Level C, Pittsburgh, Pennsylvania. Revit was utilized to transform the 2D Construction Documents into a 3D model. The 3D model was utilized to visually show the sequence of the project schedule and was hyperlinked to the project documentation and photographs to allow for use of the model for operations and maintenance of the facility.

Pittsburgh Zoo. A basic Revit model for visualization of the phasing was created to accompany the write-up for the schedule. The model was further enhanced to provide a 3D site logistics plan for use by the project team.

University of Pittsburgh – Chevron 2nd Floor, Pittsburgh, Pennsylvania. Navisworks was utilized to perform 3D coordination during this 8,000-square-foot classroom and laboratory renovation project.

University of Pittsburgh – Chevron 10th Floor, Pittsburgh, Pennsylvania. Navisworks was utilized to perform 3D coordination of the new MEP and lab piping systems required for this lab renovation.

University of Pittsburgh – Eberly Hall, Pittsburgh, Pennsylvania. Navisworks was utilized to perform 3D coordination during this multi-floor renovation to provide new nanotechnology and laser labs.

Pipe Mill Manufacturing Facility. Revit and Navisworks were used to aid in proper construction sequencing and visualization for this extremely large and complex industrial foundation project.

New Student Union Building, Slippery Rock University. One of the site constraints is that this facility was built into a steep hillside slope. The use of 3D modeling helped to determine that additional retaining walls would be needed to ensure safety during excavation for the project.

Marshall Student Housing. Construction of a 161,000-square-foot student housing facility. DProfiler used to develop the automated cost estimating database post-mortem.

Clarion Student Housing. Construction of a 103,000-square foot student housing facility. DProfiler used to develop the automated cost estimating database post-mortem.

State Route 28. Creation of a Revit model retaining wall to ensure that the piling and tie-back anchors would not interfere with the existing site utilities on this PennDOT project.

Project Engineer:

- University of Pittsburgh projects:
  - Mascaro Center for Sustainable Innovation
  - Benedum Hall Early Structural Steel Package
  - Biomedical Science Tower 3
- Theater Square Parking Garage
- ALCOSAN
- Heinz Field / North Shore Infrastructure