VR for Sustainability

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ABSTRACT

Recent developments in virtual reality (VR) technology allow for the visualization of unbuilt information as full-scale occupiable environments. These tools have proven to provide novel insight to designers, clients, and key stake holders during the design process. How might these tools be applied to visualize and predict the quantitative and material aspects of the design process related to sustainability and the communication of environmentally responsible design decisions both to the discipline and the public.

This presentation will highlight the application of VR as a visualization and simulation tool to support the design process and educational outreach of Nuthatch Hollow, a Living Building Challenge project designed by Ashley McGraw Architects. Currently under design, Nuthatch Hollow is a certified environmental classroom and research facility on the grounds of Binghamton University. Once constructed, the 2500 square foot facility will be used for teaching and research of Environmental Studies and available for gatherings and community-based educational programs.

The presentation will demonstrate how an immersive VR representation of the project that included environmental analysis and interactive educational content supported the understanding of the sustainable quality of the built environment. It will also introduce critical aspects of the Living Building Challenge criteria and how the Nuthatch Hollow Project design team met them.

BIOGRAPHY

Amber Bartosh is a LEED-accredited architect and interior designer who has designed and managed award-winning projects in the United States, China, Kuwait, and the U.A.E. She received her B.A. in Art and Architecture from Rice University and her M.Arch from the Southern California Institute of Architecture (SCI-Arc). Amber is currently an Assistant Professor at Syracuse University School of Architecture, a Syracuse Center of Excellence Faculty Fellow, and co-director of the Interactive Design and Visualization Lab (IDVL). Her work focuses on the sustainability and resilience of emergent materials and tools for architectural application through physical prototyping, advanced visualization technologies, and hybrid reality simulations.

Michael Frisina is an Architectural Designer and Design Technology Manager at Ashley McGraw Architects. He is a LEED AP, BD&C, has led the coordination effort on two LEED Platinum and one LEED Gold research facilities and is currently in training to be a Certified Passive House Consultant (CPHC). Michael has presented “Sustainable Design & BIM Integration: Benefits & Pitfalls” at the 2014 New York State Green Building Conference, “Geothermal Systems” at 2013 STEM Education Weekend and been a guest lecturer for Thermodynamics courses at Binghamton University.