

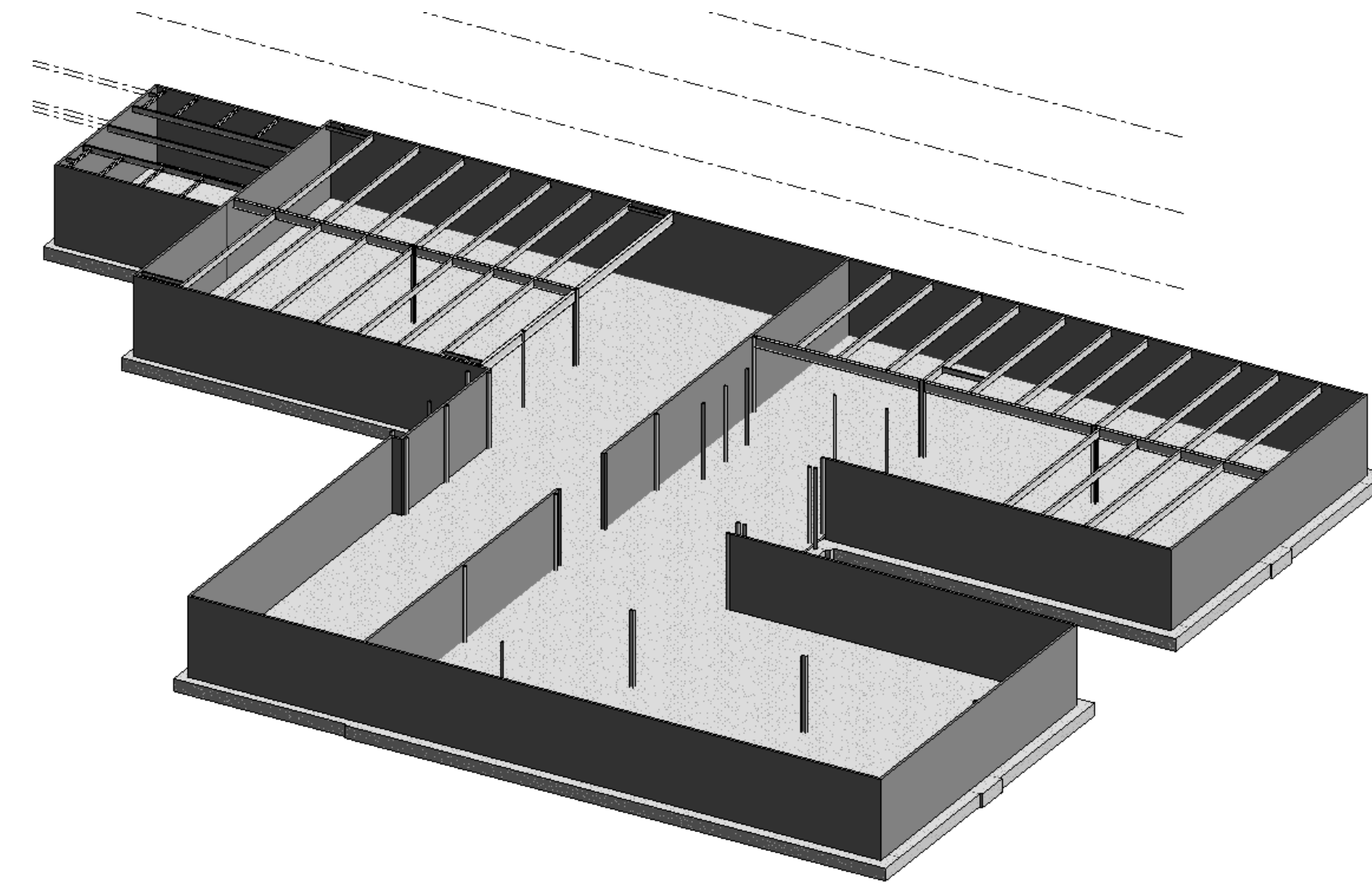


3D Virtual Learning Spaces

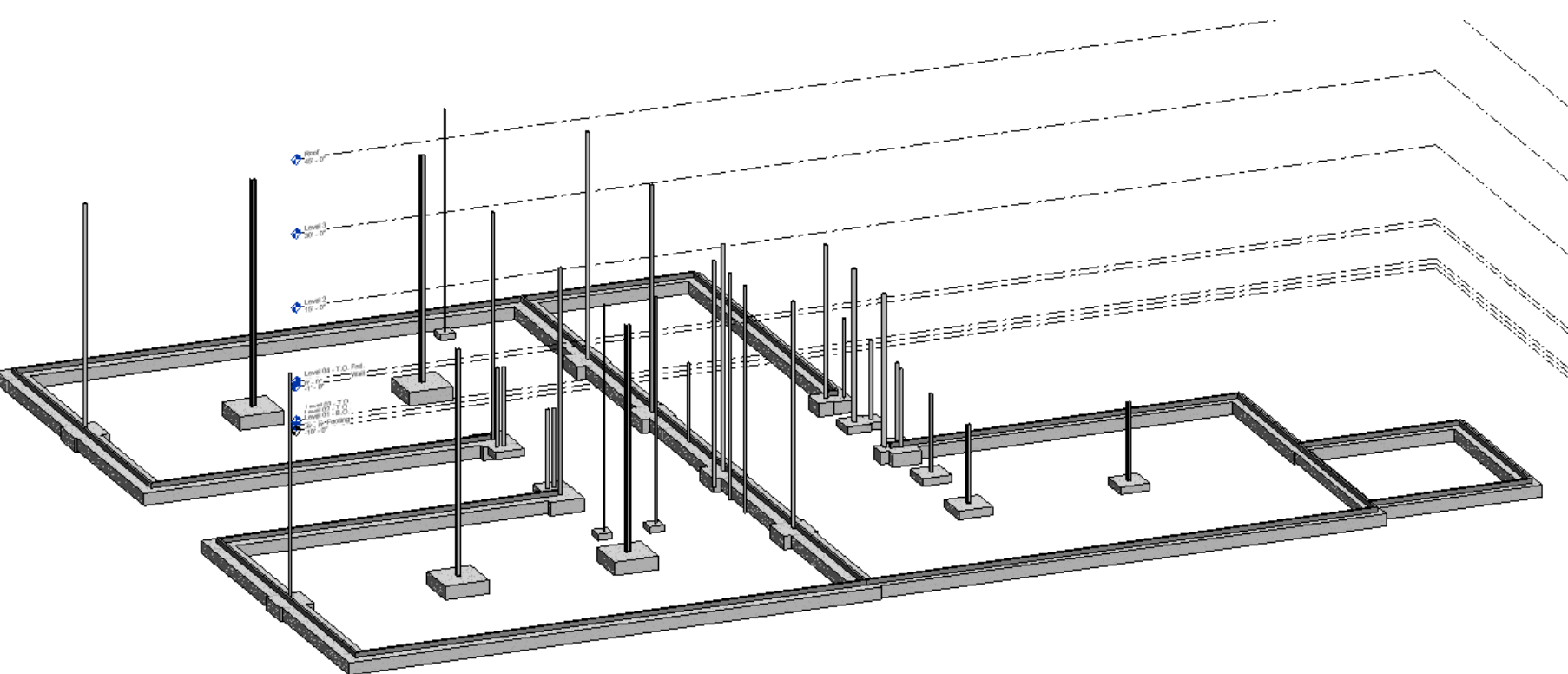


By Carter Melick

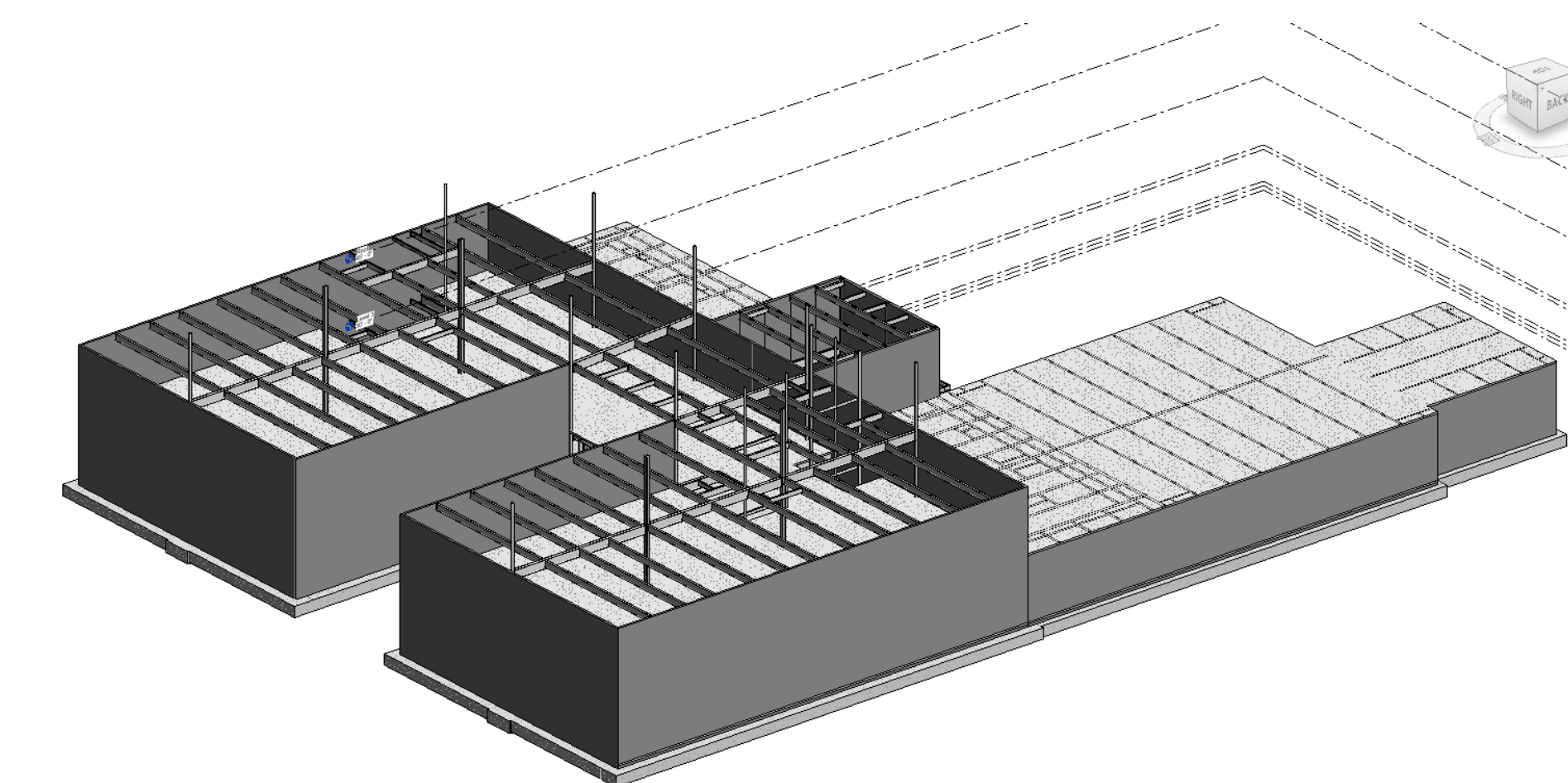
Learning within the construction industry is challenging due to the complexity, size and variety of construction projects. This project aims to tackle these challenges through the use of 3D modeling and VR technologies. The project focuses on the teaching of structural steel framing with an emphasis on the stages/phases of construction. The first steps involved taking structural steel plans and using them to create a 3D model in Revit. The model is broken up into stages from foundation to roof framing to highlight the stages of construction. Once each model stage was finalized, it was imported into a 3D program called Cavnus that allows for both VR and AR functionality. Each stage of the model was placed into the space with an accompanying PDF of the plans used to create the model. Some details from the plans were also placed in the space in PDF next to where the detail was modeled. Lastly, a welcome board with directions for the space and tips for moving around the space. This space is now ready to host classes where students are able to explore and ask questions about steel framed construction from their computer.



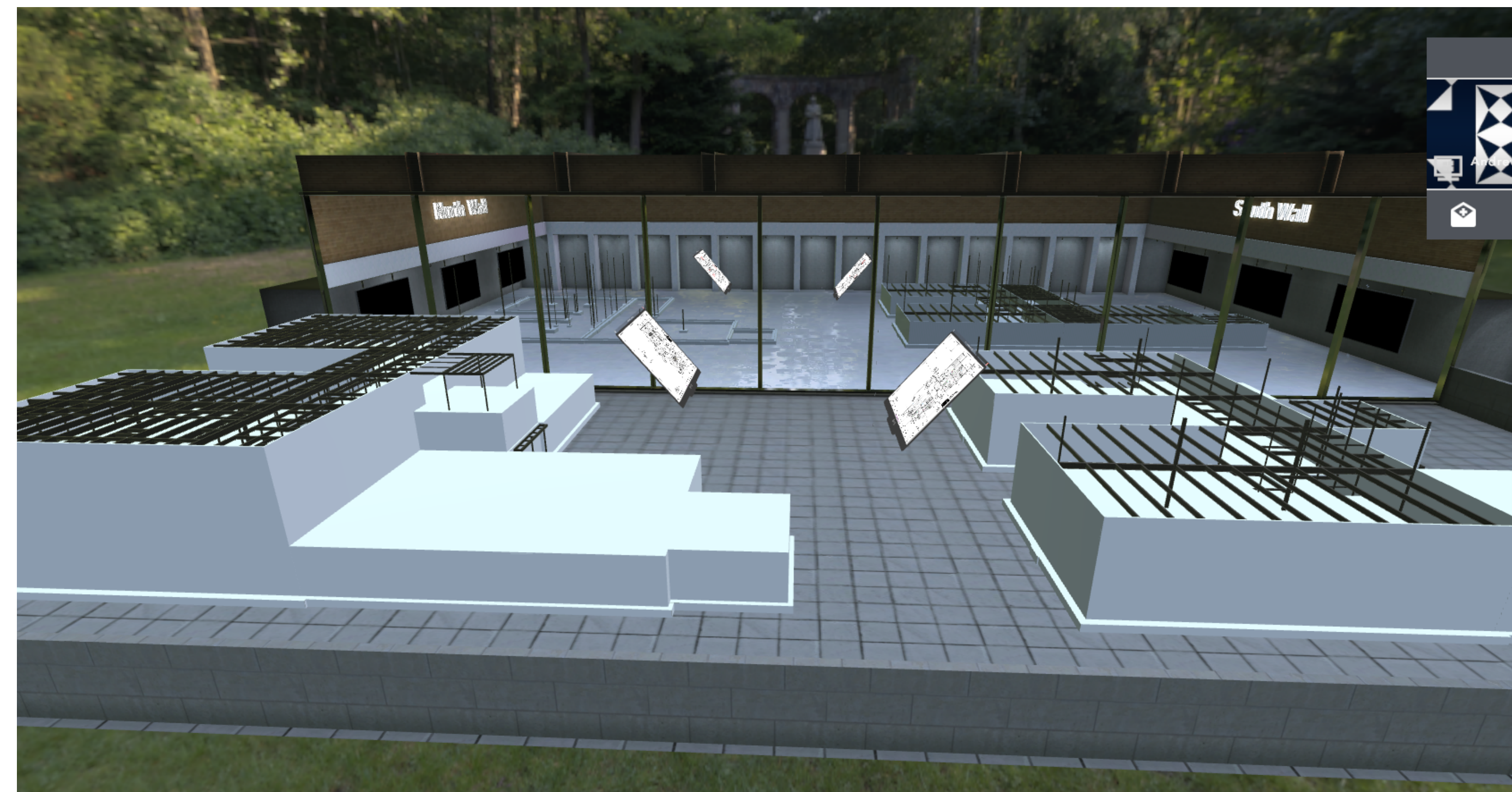
Creation of Revit Model



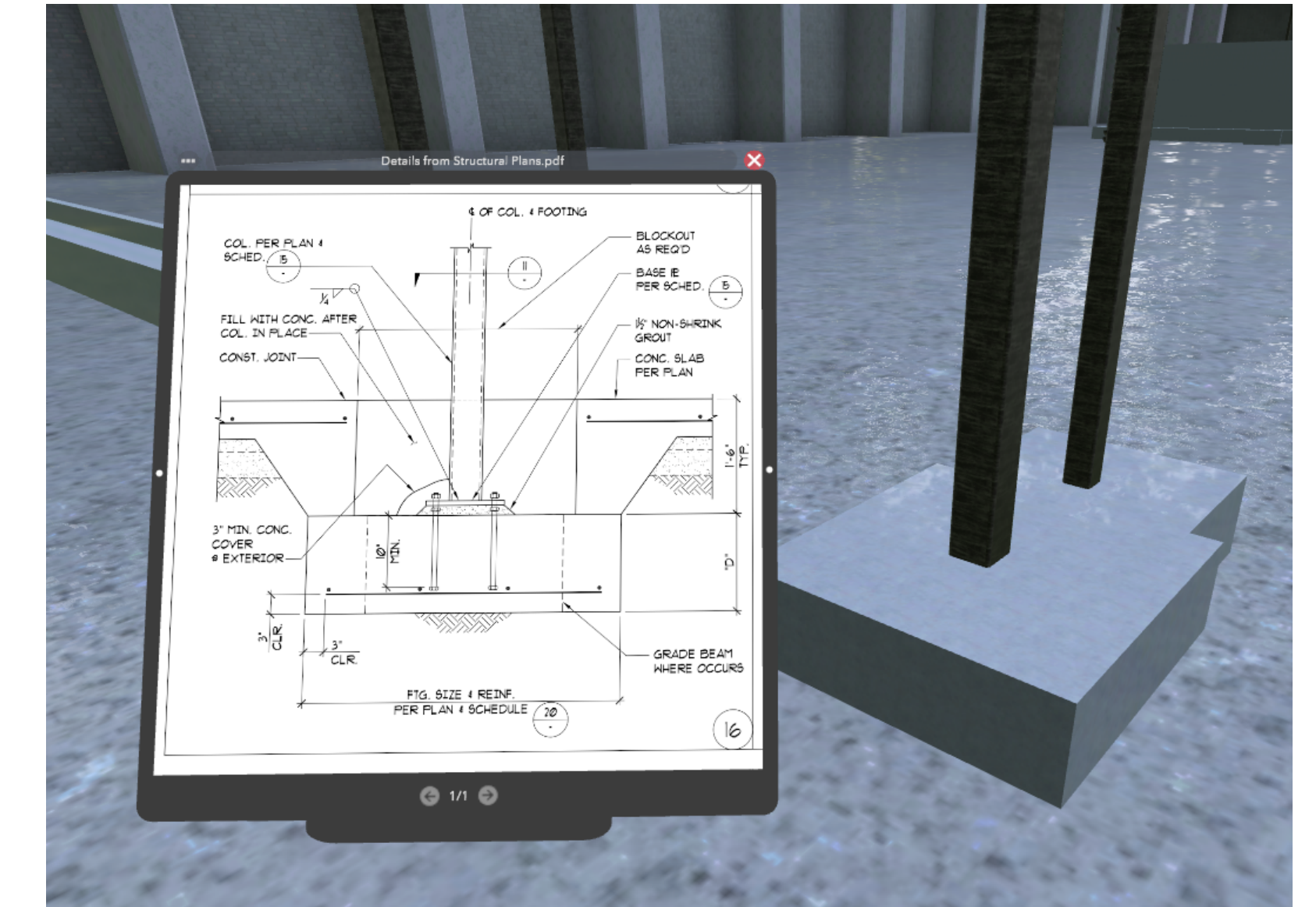
Columns and Foundation Revit Model



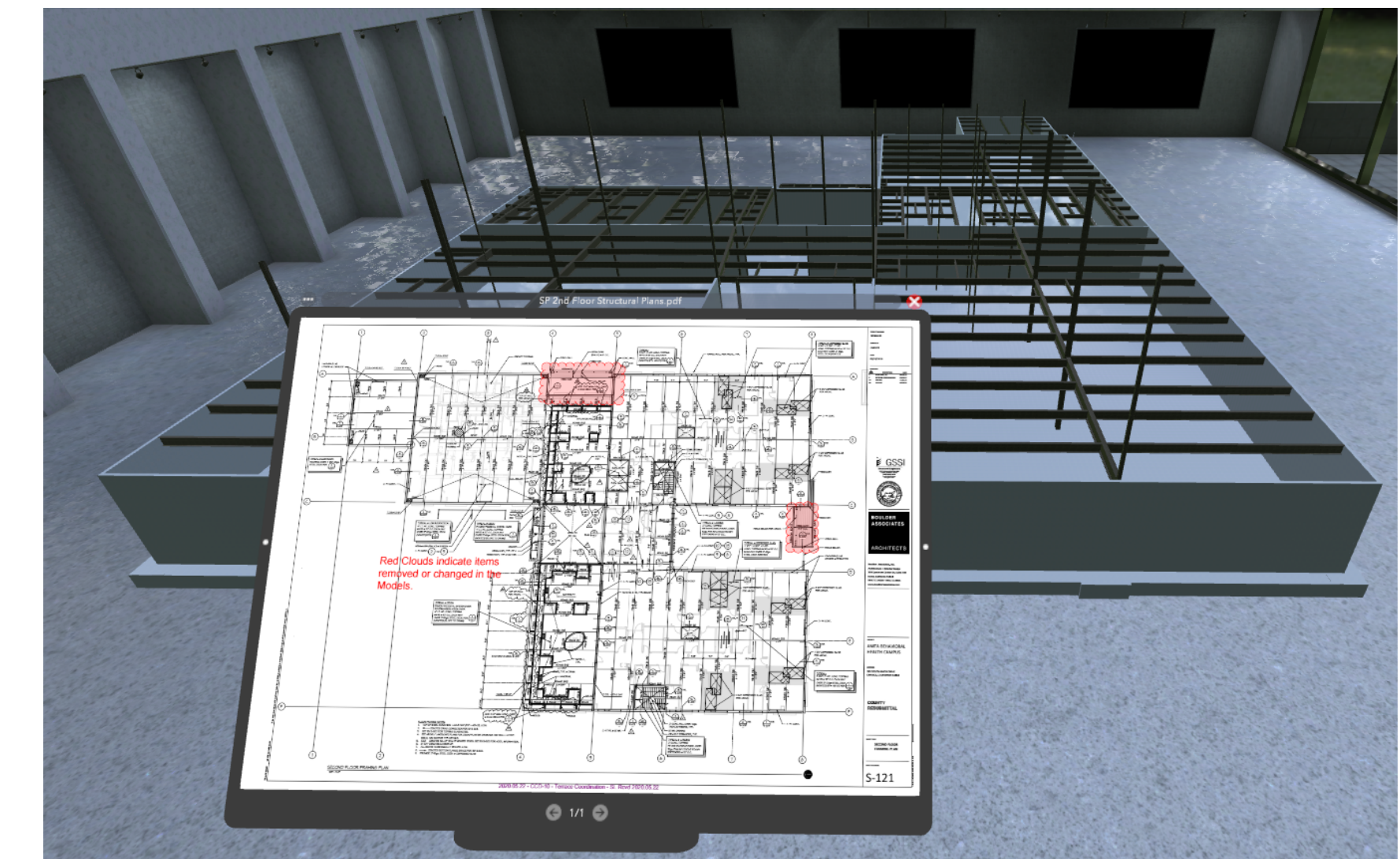
3rd Floor Framing Revit Model



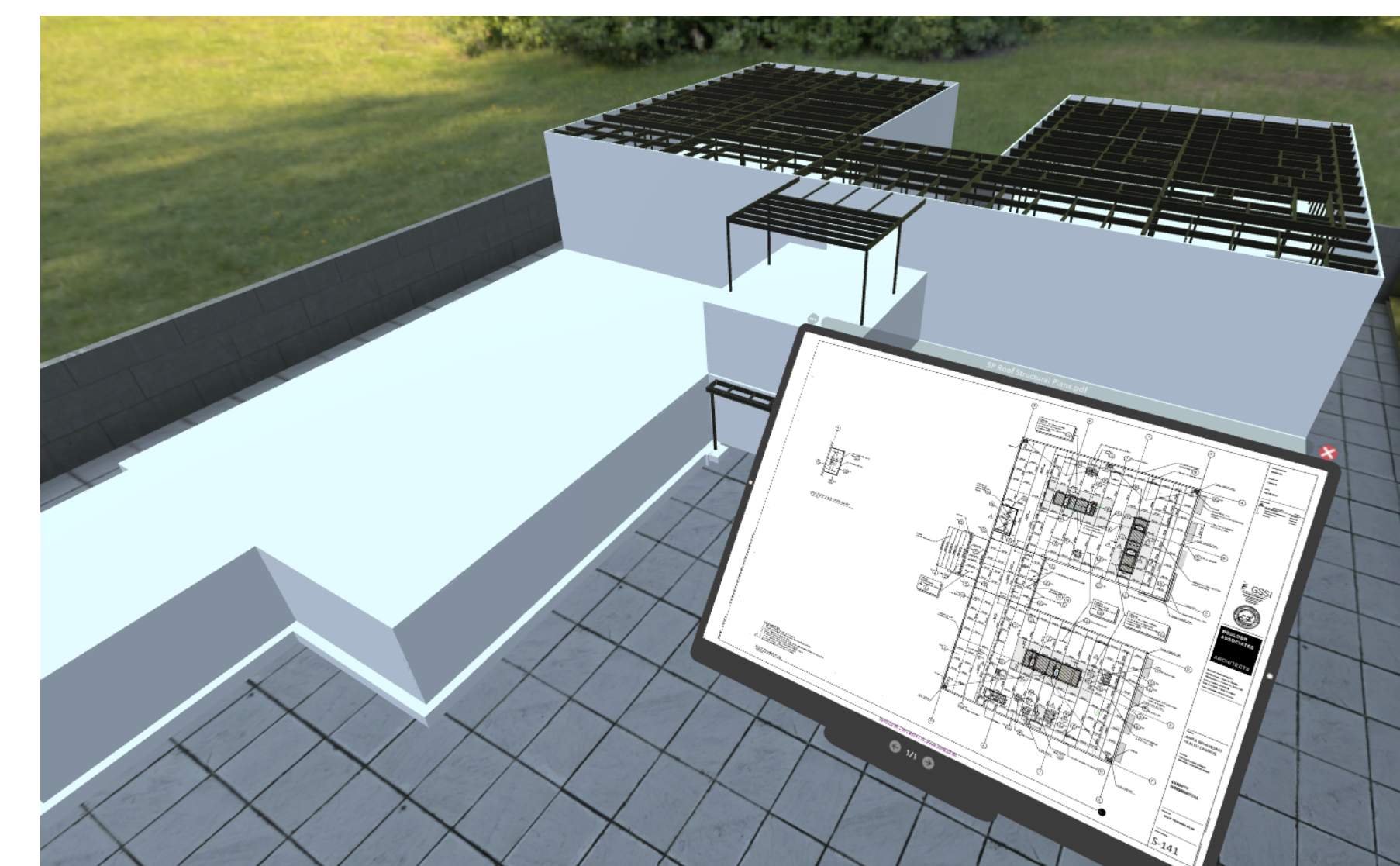
Overview of entire 3D space in Cavnus



Modeled Detail and Detail PDF in Cavnus



2nd Floor Framing Plan in Cavnus



Roof Framing Model in Cavnus