

WARRIOR CANINE CONNECTION—INNOVATING BUILDING RENOVATION WITH AUTODESK

In April 2016, the Autodesk Federal Solutions Team began working with Warrior Canine Connections (WCC), a non-profit organization that enlists soldiers recovering from PTSD and Traumatic Brain Injuries (TBIs) in a therapeutic mission of learning to train service dogs for fellow veterans.

WCC's goal was to renovate a 1920's barn into a modern training facility. Their challenge was to take an existing structure, reimagine the space and determine the best plan forward to meet their functional needs for the space. With the help of the Autodesk team and the Autodesk Solutions portfolio, WCC will be empowered with smart models of their structures that will help the design team make strategic decisions on building repairs, inform renovations decisions, and help optimize building operations.

→ CAPTURE

To begin, the Autodesk Federal Solutions Team started scanning the structures with a FARO Focus 3D x330 Laser Scanner.

Used an Unmanned Aircraft System (UAS) to get full perspective view of the facilities on site and to create a 3D, photogrammetric model from photos shot by the UAS.

Scanning the two buildings using laser scanners and high-definition images via UAS took 3 days, whereas hand and paper measurements would have taken weeks.



→ COMPUTE

Laser scans offer the team verified, down to the millimeter, smart measurements with countless data points offering an unprecedented Level of Detail (LoD) when constructing the models.

After inputting laser scan and UAS data into Revit, a specialist identifies point cloud information in order to build the smart digital model.

Developing the Building Information Model (BIM) is a key piece for designers, engineers, building owners, and project stakeholders to make smart decisions for success.

→ CREATE

For existing facilities, 3D laser scanning and building models within Autodesk Revit and ReCap software allows owners and stakeholders to create BIM models of existing buildings.

Revit models also allow architects and engineers to collaborate on how to enhance the building cost savings with Lightning Analysis, Heating and Cooling Analysis, and more.

Once the data is put into more advanced tools like ReCap, designers and engineers are able to work on design and restructuring of the building.

CONCLUSION

A smart BIM model delivers value to Federal Building Owners with information to optimize renovation planning to facilities operations. By creating BIM models of existing buildings using reality capture workflows and designing new facilities using BIM, WCC is empowered to make informed decisions before construction begins, that will help save time and money throughout the buildings' lifecycle.

Special thanks to CADD Microsystems for leading the Compute stage of project development and to Warrior Canine Connection and the Association of General Contractors who made the project possible.