

# Quantapoint Case Study

## Quantapoint and Pfaffmann & Associates Preserve the Meadowcroft Rockshelter

### *Helping to Protect a National Archeological Treasure*

#### **Situation**

Considered a Pennsylvania Commonwealth Treasure, the Meadowcroft Rockshelter is a significant archaeological site that has been featured in The Washington Post, National Geographic, The Discovery Channel and many others. It is a rock overhang under which the first Americans encamped to protect them from the elements. It provides archaeologists with a rare glimpse into the lives of the first people to arrive in the New World.

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*Rob Pfaffmann  
Founder, Pfaffmann and Associates*

David Scofield, Director of the Meadowcroft Museum for Rural Life of which the Meadowcroft Rockshelter is a part, and his staff recognized that the excavation site was at risk of deterioration due to its constant exposure to weather and debris year-round. A “lean-to” cover is currently the only protection for the site. To this end, Scofield and his team are proposing a free-standing cover be added to the archaeological site with the option to add an interactive interpretative center in the future.

#### **Challenge**

Scofield knew that securing funding for construction would be a significant challenge. He realized that drawings and a model would be very helpful in seeking funding as it would enable donors to visualize the end result. Scofield selected Pfaffmann & Associates, an architectural firm based in Pittsburgh, Pa., to come up with a concept for a roof to cover the excavation site.



*Quantapoint 2D Laser Scan (Not a Picture)  
Each Point is a Measurement*

According to Rob Pfaffmann, founder of Pfaffmann & Associates, “One of the biggest challenges for us was surveying an area that included a rocky cliff side of varying elevations, existing staircases and tree limbs, but we needed accurate dimensions to create architectural drawings and 3D models.”

## **Solution**

To develop accurate base level drawings of the entire facade, Pfaffmann called upon Quantapoint Inc., the leading provider of as-built documentation using integrated laser scanning. Quantapoint rapidly collects, registers and verifies billions of highly accurate measurements to provide a consistent and up-to-date “digitized structure” of laser documentation™ that includes dimensions, elevations, obstructions and other information – without invasive manual measurement, purchasing costly hardware or time-consuming drawing re-creation or remodeling.

## **Results**

Quantapoint used the digitized structure to create detailed and accurate 2D drawings for the Meadowcroft Rockshelter. Quantapoint also delivered 3D laser models that provided an interactive 3D view of the area that could be accessed using Quantapoint’s PRISM 3D software. 3D CAD models could be displayed with and clashed against the 3D laser models in PRISM 3D, which enabled Pfaffmann and Associates to test the viability of its design concept.



*Quantapoint 3D Laser Model (Not CAD)  
Reality on Your Desktop*

“We were able to create a model of a roof structure through laser scanning that conformed to the shape of the cliff and that butted up against it without actually attaching to it,” commented Eric Hoffman, founder and Chief Executive Officer of Quantapoint. “The information was so detailed that the Pfaffmann team was able to offer additional design options and plan effectively for how the new structure would impact the existing area. They were able to see where any obstructions would be and reduce future construction errors.”

Added Pfaffmann, “By using Quantapoint, Pfaffmann and Associates was able to reduce uncertainty, reduce rework and enable the project owners to get the sign-off they needed to begin the construction process.”

Also, using the computer modeling capabilities afforded by the combination of the architectural design and the laser scanning precision, the Meadowcroft Rockshelter staff are planning to create a virtual tour of the site as it may have looked 15,000 years ago. Visitors will be able to see large sections of rock that have fallen from the original rockshelter replaced in their simulated natural position.

One of Scofield's next challenges is to present the proposed designs to potential donors. Scofield believes that the level of detail and accuracy of the drawings and models will help him gain support for funding and construction. In short, Scofield and Pfaffmann couldn't be more pleased with Quantapoint and Quantapoint is proud to play a part in helping to protect a national archeological treasure.