

INNOVATION

# Radiating History

**R**adiography has traditionally been used to produce X-ray images that help assess everything from a person's bones to the structural integrity of steel bridge components. It's even used to check for concealed images behind valuable paintings. But this spring, the technology made history—or helped to preserve it—at the only remaining structure of the largest British-built fort in North America, the Fort Pitt Block House.

Completed in 1764 in what is now Pittsburgh, the Block House has a series of gunloops, or openings, in its facade that afforded soldiers 360-degree views. But after 250 years, the original timbers framing the gunloops showed signs of deterioration.

“[The timbers are] part of the building structure, and if their interiors deteriorate enough, they'll ultimately fail the building,” says Dirk Taylor, the engineer chosen by the Fort Pitt Society of the Daughters of the American Revolution to coordinate Block

House preservation efforts in advance of its 250th anniversary.

Reluctant to use traditional, invasive evaluation methods such as drilling, Taylor enlisted TÜV Rheinland to assess the timbers using computed radiology. A digitized version of the standard X-ray examination, it produces longer-lasting, higher-quality images while eliminating costly film and development chemicals.

“The exams revealed that there isn't really a whole lot of damage, [as we originally] thought,” says Emily Weaver, curator of the Block House. Instead, only simple repairs were needed to the surface of the beams.

“So there are gunloops in the building that are still the same gunloops that a soldier would have looked through 250 years ago,” says Weaver. “Most of the building is original, but it's really cool that wooden pieces [in particular] are still original after all of this time.” —David Robert Weible

