The Northern Light

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Taking History to New Depths

Ground-penetrating radar unearths aspects of 18th century life

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One If by Land . . .

By ALAN E. FOULDS, 32°

How do you make an 18th century Freemason's home compatible and usable today? How do you take a national landmark and upgrade it for a modern world without destroying it? One thing you do is call on a 21st century Mason. That is exactly what happened when the Paul Revere House in downtown Boston needed upgrading for use by school groups and made handicap-accessible which all needed to be done without disturbing the past.

Enter Dr. Allen Gontz, a coastal geologist and geophysicist, assistant professor at the University of Massachusetts, and a member of Brownstone Lodge No. 666, in Hershey, PA.

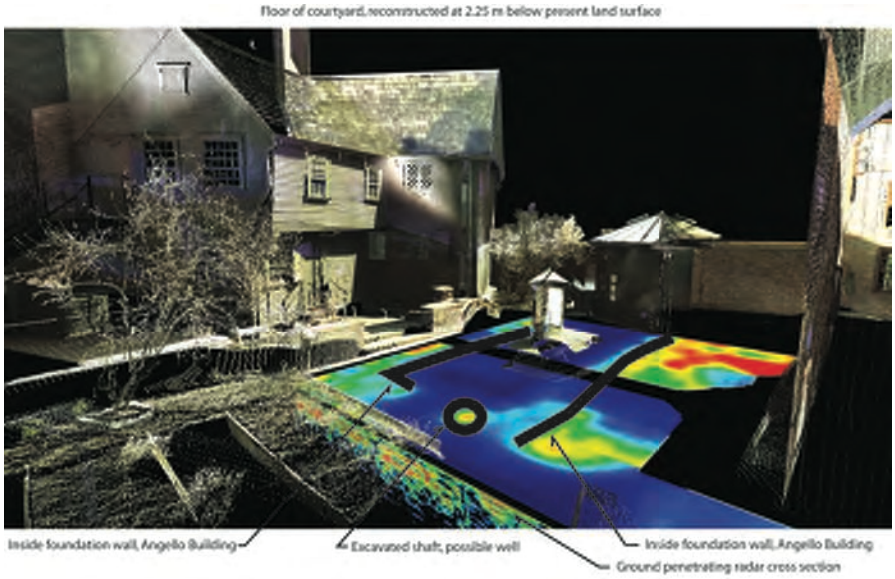
Bro. Paul Revere, who was Grand Master of the Grand Lodge of Massachusetts, participated at the very beginnings of our nation and is a hero of song and poetry. He lived in a house that exists today and is visited by thousands each year.

The Paul Revere Memorial Association, which curates the American patriot's home in the city's North End, recently purchased a building adjacent to the property. According to executive director, Nina Zannieri, Lathrop Place, as the newly acquired property is called, is not in itself historic. Built in 1835 as a two-family row house, it was used as a boarding house for years. Its value comes from its proximity to the Revere House. She says "There is a huge demand for school programs, visitor orientation, and office space." Much of that has taken place in another building under the association's care. The Pierce/Hitchborn House, built in 1711 has served well but the high traffic — and strong interest in Paul Revere — has been tough on the old structure. A new solution was needed and so a third building was purchased. The organization hopes to connect Lathrop Place with the Paul Revere House in a way that does not destroy or obscure the past.

Before any construction can take place, the association is required by city, state, and federal regulations to assure that no area with archaeological potential is disturbed. Zannieri says also that "as good historians, we want the study done." She says a nice byproduct of the project is that "we get a good sense of the property and are alerted to underground features that might be problematic."

How can such an underground study be accomplished without destroying the property? That is where Allen Gontz and his co-workers come in.

Using high-resolution ground penetrating radar equipment Bro. Gontz and his team are able to perform their archaeological work without any digging. Their non-invasive equipment sends radar signals into the ground. Readings are interpreted by noting the changes in the radar waves caused by changes in the sediment encountered. The findings are a result of the relationship of natural earth to disturbed earth. They pose the question,



Laser line scan image, courtesy Steve Wilkes of Harry R. Feldman, Inc. Ground-penetrating radar, Dr. Allen Gontz of UMass-Boston.

Dr. Allen Gontz and Paul Revere House executive director Nina Zanneri discuss the ground penetrating radar while graduate student Christopher Maio operates the equipment.

"How does it relate to its surroundings?" Gontz says "Imagine the earth as a seven-layer chocolate torte. Then imagine someone eating a section from the middle, and filling it back in with another type of cake. Every time a new type of layer is hit the system recognizes the change. If there is a disturbance in the layers — a different type of pastry, in this example — the radar would pick up on that." He also adds, "There is some art involved. There are no perfect answers." The radar may show changes, but without the interpretation of historians and experts of the time period there might not be a way to tell what has been found. For example, finding a rounded hole lined with rock — probably cobblestones — indicates the existence of a former well. The team would make that educated guess because of an awareness of well construction in the era. On the other hand, a hole with an irregular shape more likely represents a privy. He likened their work "to something you would see on one of the CSI programs — with less gruesome findings, of course."

Working on the project are a host of experts ranging from staff members at the Paul Revere House, to Boston's city archaeologist, Ellen Berkland, to surveyor, Michael Feldman. Also involved is Stephen Wilkes, project manager for Harry Feldman, Inc., the firm that donated use of the radar equipment.

He says a great part of their work is that it can be accomplished without causing damage. "It is no more intrusive that running a lawn mower over the property." Nina Zannieri agrees. She says, "other than a couple of nails tapped in for use as reference points, there is no sign that they were there."

Dr. Allen Gontz has an extensive background in this field and also possesses an enthusiasm for this and other similar projects that combine science, history, and even a little detective work. He has undergraduate degrees in applied geology, environmental geology; a master's degree in geological sciences, and a PhD. in earth science. He heads up the geoSTRAT lab at the University of Massachusetts. The multi-disciplinary group, originally comprising earth and environmental sciences and anthropology, was established to work on such projects as the one at the Revere House. At the university he teaches such courses as coastal processes, landscape change, glacier geology, and recently added "Evolution of the Boston Harbor Islands" to the curriculum.

Gontz was able to integrate his class work with the project. He brought his students to the site to study the process of digging into the past without digging into the ground and afforded them the opportunity to examine some of the findings. One facet of his course is the study of coastline changes, so the house presents another teaching opportunity. The city of Boston was once much smaller than today as bays, inlets and channels have been filled to create more space. The Revere House is not near the ocean today, but at one time it sat just a couple of blocks from the shore line.

The Revere House project got underway through a confluence of fortunate events. Allen Gontz says that he became involved through "a friend of a friend of a friend." His wife, Larissa Fawkner, was director of marketing and community events with the Island Alliance, a non-profit group that supports the Boston Harbor Islands National Park. She was helping with an event headed up by the city archaeologist, Ellen Berkland, who was, in turn, helping the Paul Revere Memorial Association with the planning for its underground survey, and the connection was made.

Meanwhile the surveying firm, Harry R. Feldman, Inc., was doing work for a new downtown hotel and a high-rise office building. Its president, Michael A. Feldman, felt it was important to give something back to the city and looked for historic sites where he could offer his services free of charge. When he contacted Nina Zannieri at the Paul Revere House, the timing was perfect.

He [Gontz] likened their work "to something you would see on one of the CSI programs — with less gruesome findings, of course."

She told him of the boundary survey that was planned, so he offered his equipment and expertise.

The survey team still has some site work to complete but, for the most part, the remaining tasks involve piecing everything together. The information needs to be reviewed and interpreted. The final result will be a complete historical record of what has existed on the property though all of its incarnations.

Zannieri concludes, "The relationship with Dr. Gontz is great. He is absolutely enthusiastic about his work. He is careful of the site as it stands today and respectful of its past. His fellow team members spoke to the Paul Revere House staff of the potential teaching opportunities this affords. In short, he gets the importance of the property." She also says their presence, with their high-tech equipment and their excitement, is a reminder that this is "a special place with a special history."

made other plans. Mastone explained, "Ray said he had a boat and offered to take us out to hunt for the brig." Bates first learned of The Freemason when he found references to its demise in a local diary.

Victor Mastone continued to research the ship via libraries and the Internet. Allen Gontz loaded the tools of his trade on board and they sailed into Marblehead Harbor. Seismic reflection profiling equipment uses sound to create an image of the structure of the sediment and objects contained in the sediment. Side scan sonar is used to produce images on the sea floor. He explains, "They are much like air photos." Finally, his marine magnetometer senses objects that contain iron alloys.

Mastone said that they have not yet found the wreck, but they have not given up. He said, "We need to look at Allen's data and do more research to narrow down the possible sites." He said he is also very interested in why it was called The Freemason. TNL

. . . Two If by Sea

Another project in the works involves a Freemason looking to find a Freemason — or "The Freemason" to be precise. The Freemason was a Revolutionary War era privateer which sailed from Marblehead, MA.

On Sept. 30, 1779, while moored in the harbor, the crew decided to fire the evening gun. Apparently, a spark ignited the barrel of gunpowder, the ship exploded, and sank to the harbor floor. Bro. Gontz, together with Victor Mastone, archaeologist for the state, and Raymond H. Bates Jr., author of *Shipwrecks North of Boston,* set out to find the wreck.

Initially they hoped to secure a grant to help defray the costs of the quest, but when it did not come through, they

Start with the first word. Add to it the letters of the second word. Then add or subtract the letters of the following words. Total the remaining letters and unscramble them to find a word associated with Masonry.

MASONIC WORD MATH

(HUMANITY) + (TREMENDOUS) – (TRUST) + (STREAMS) – (MANDATORY) + (COFFEE) + (WINTER) – (CHIEF) + (STRAIN) – (SUNRISE) + (GROUNDHOG) – (MOTE) – (ANGER) + (PERCEIVE) – (THROWING) + (STORM) – (VOID) + (LAND) – (PRETEND) – (MUSCLE)

= ☐☐☐☐☐☐☐☐☐

Clue for this puzzle appears on page 14. Answer from previous issue: LIGHT