INNOVATOR Q&A

Geothermal climate control is helping preserve the past at Newport's historic mansions

"You can bring modern technologies into old buildings and do it seamlessly," said Mike Taber, director of properties

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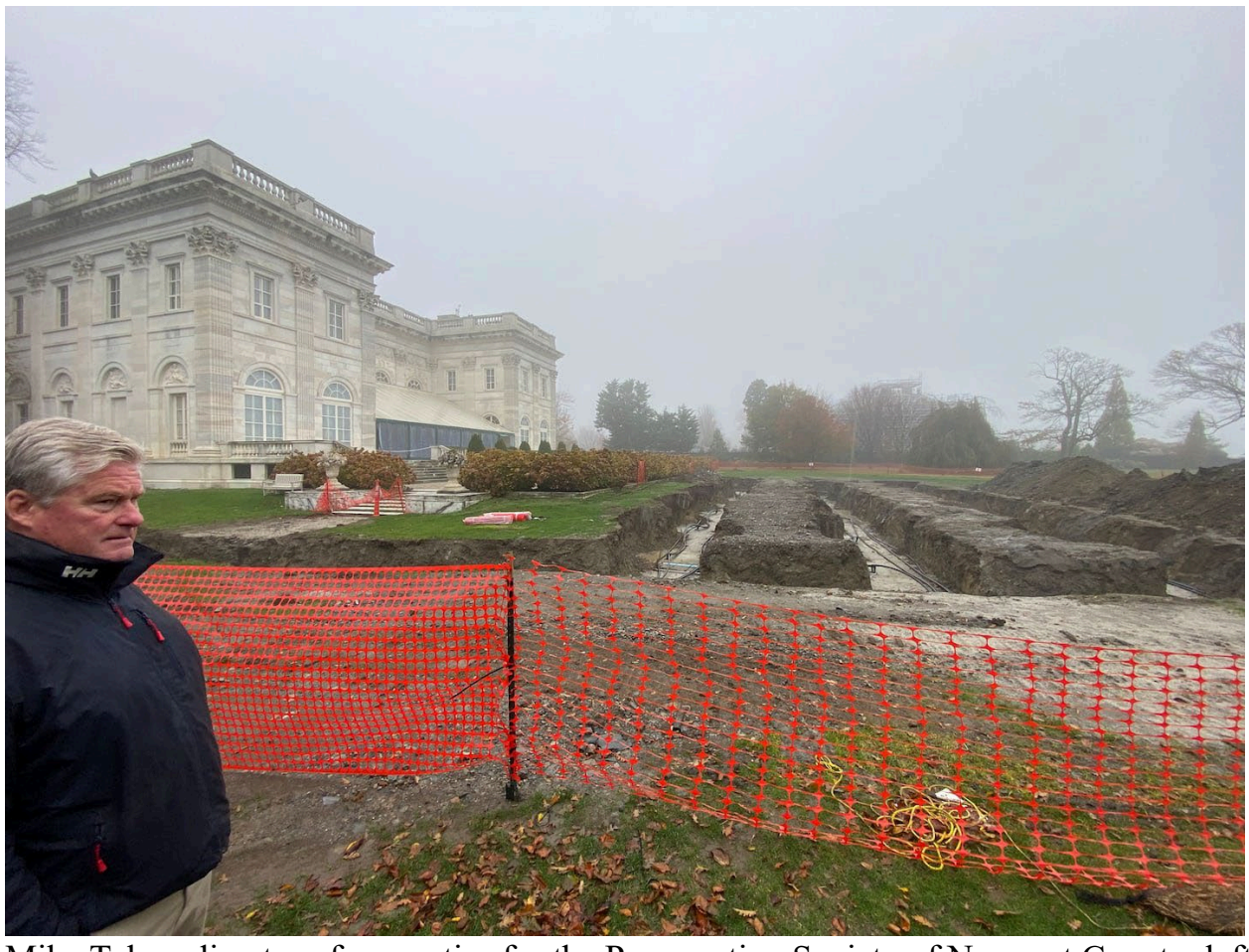

Mike Taber, director of properties for the Preservation Society of Newport County, left, stands beside trenches dug outside Marble House as part of the mansion's installation of its geothermal climate control system. CHRISTOPHER GAVIN/GLOBE STAFF

NEWPORT, R.I. – The newest addition to Marble House, the storied Vanderbilt estate, won't be nearly as visible or eye-catching as the mansion's opulent facade.

In fact, it won't be seen at all, really.

"It's out of sight, out of mind," Mike Taber, director of properties for The Preservation Society of Newport County, said describing the geothermal climate control system crews are working to install.

Marble House is now the fifth among the collection of historic estates managed by the preservation society to have such a system put in place since 2015, bringing 21st-century tech to the grounds of the historic retreats.

Much of the $1.5 million installation will be buried underground, and covered by a lawn. Inside, the heat pumps and mechanics will be out of public view, hidden inside seldom-used bathrooms and closets, among other areas of the home, Taber said.

Not only will the new system save hundreds of gallons of oil a week every winter, reducing Marble House's carbon footprint, but it's also going to make things more comfortable for the mansion's many visitors. Indoors, the system will keep temperatures consistently mild, with a steady humidity level of 50 percent.

Taber noted when a similar system was put into The Breakers in 2018, it was a "game changer."

"That building … was very, very hot, very humid, and it wasn't good for the materials" inside, Taber said. "So when that came online, we had a noticeable difference in just how it felt, the reaction of the materials. The wood doesn't contract and shrink like it does during the change of seasons."

Taber spoke to the Globe about geothermal climate control, its benefits for Newport's mansions, and how the environmentally friendly technology can be put into historic properties without sacrificing history.

Q. What is geothermal climate control? How would you describe the system?

Taber: It's a ground-based, water-cooled system that is 21 individual wells, 425 feet deep. That is so we can hit a constant 55-degree temperature at that depth in the earth. Into those wells is just over four miles of water-filled, two-inch tubing, which is all co-joined and they're brought into the building to be hooked up to two heat pumps where the exchange of cooling or heating takes place.

What are the benefits?

First and foremost, it's climate control for the building itself, and by the building, I mean the woodwork, the textiles on the walls, the paintings, just all of the finishes that you do not want to have going through seasonal changes of temperature and humidity.

A bonus of that is Marble House currently, if it's a cold winter, burns about 400 to 450 gallons of oil a week. We can eliminate that, except for the very coldest days where we might have to put the oil heat on. Typically, that will probably be about three or four days a season. So it's a substantial savings and the amount of gases we're putting out into the environment from the oil being burned.

Modeled after the Petit Trianon, Marie-Antoinette's favorite structure at Versailles, Marble House was completed in 1892. DAVID LYON

Is it difficult to bring this technology into a famous historic property?

We wanted to be the leader, showing people that even in historic buildings like this, if you plan it, and you get a good contractor, and you have good engineering, you can bring modern technologies into old buildings and do it seamlessly. You don't want to walk into a space and see an air mover sitting there underneath this beautiful painting. You want everything to be hidden.

That's the challenge in getting the piping, the tubing, and the electric from, in most cases, the attic and the basement to the second, third, and first floors. It's difficult to do. Fortunately, these older buildings, if you have the right people, you can find chases running alongside fireplaces, and if you take the trim off very carefully … you can access the routes through there and put everything back in place.

And installing this system makes for a more pleasant experience for visitors?

Yeah, the bonus is the creature comfort for the staff and the visitors. You're no longer feeling like you're in an oppressive space where you don't even want to be in there.

Chateau-sur-Mer used to be what we consider a shoulder season house. By that, I mean the fall or early spring, because in the summer, it was just too hot in there [for visitors]. Now, we keep Chateau open all summer long, through the fall. It'll actually be open for the Christmas season this year, which it hasn't in several years. That's just a bonus of having nice climate control in there. It gives us the opportunity to do a lot more things with these houses.

This interview has been edited for length and clarity.

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