School’s old boilers headed to Breakers

Two antique boilers from Potter Burns School will become part of Newport mansion historical exhibit

PAWTUCKET – A piece of the city’s educational history is now a part of regional lore after the Pawtucket School Committee donated two 98-year-old boilers from Potter Burns Elementary School to The Breakers, and they will be on display as part of a tour at the Newport mansion.

John Rodman, director of museum experience with The Preservation Society of Newport County, explained that it was a years-long effort to find boilers that were authentic to the late-1800s and would be the exact model that would have been seen in the boiler room in 1896.

Property Director Curt Jenga was “casting about to find boilers of the exact type that were used at The Breakers in 1896,” as the the original boilers had long since been replaced and disposed of, Rodman explained.

“When we were thinking about this tour, it’s hard to have a tour of boiler room without boilers,” Rodman explained. “We wanted the exact right boilers one way or another.” Through a convergence of companies – Colliers International, Torrado Architects, and Emery

Environmental – each organization played a critical role in connecting Jenga with the Pawtucket School Department and Pawtucket School Committee.

“We are very, very grateful to the city, the School Department, and School Committee for letting us take possession of these boilers,” Rodman said. “They are historically important and it’s a credit to the incredible durability of these boilers that they were still in service as late as September 2016 at Potter Burns.”
The Preservation Society of Newport County last week introduced the new “Beneath The Breakers Tour,” offering guests a never-before-seen look into the working side of the Vanderbilt family’s summer home and what it took to bring the mansion to life.

The tour follows an 18-month, $1.2 million project to preserve and restore the historic underground boiler room.

The original skylights had been covered over, and ground water was seeping through the roof and walls of the basketball court-sized underground chamber. The entire structure was excavated and waterproofed to prevent further deterioration, and the skylights were uncovered.

School Committee Chairperson Gerard “Jay” Charbonneau said that with the major renovations ongoing at Potter Burns, the boilers were among the pieces of aging technology and equipment being removed. He said it “really paints the picture of some of the school buildings.”

“This was so old that the historical commission thought it was of value to be placed at The Breakers,” Charbonneau added of the school’s aging boilers.

“While we’re thrilled to support that historical society and all of the great work that they do, we’re equally as thrilled that the voters here have seen fit to give us this funding to improve the schools,” Charbonneau said, referencing the voters’ approval of school construction bonds in both the 2014 and 2016 elections.

“When you’re taking a boiler that’s of value to The Breakers, the good and bad shows what our students and staff were dealing with for a heating source for the last several years,” he said. However, with construction ongoing at Potter Burns and expected to be completed by the start of the 2017-18 school year, new equipment is being brought in to make the building more energy efficient.

Rodman noted that finding the right boilers was about more than just the exterior look.

“The specific kind of boiler, it’s the model of the boiler that’s the issue. The pathways inside the boiler, all of the duct work, the individual parts, they are unique to a model and a type, it’s not just that it looked right from the outside,” he said. “This was the design that was used in The Breakers, that’s why it was so important to find the exact model.”

Derek Osterman, a project manager with Colliers International, said that the 1919 H.B. Smith boilers at Potter Burns were in operation until September 2016. After the schools agreed to provide the boilers to the preservation society, the boilers were taken out of operation, cleaned of hazardous materials, disassembled, and readied for pick up a few months ago, Osterman said.

Rodman laughed and said that “we had a pretty good party,” when they found out that the boilers would be donated from Pawtucket. “We were thrilled. At the lynchpin of a boiler room tour are the boilers. It’s hard to say ‘Here you are in the boiler room, everything’s authentic except the boilers,’ but now you’re looking at the same as Cornelius Vanderbilt and Richard Hunt specified.”

The boilers were disassembled in Pawtucket and reassembled in Newport. However, they came to The Breakers in individual pieces after being dismantled and the individual pieces had to be lowered one at a time through an open sky light in the boiler room, where they were then reassembled. The entire process of assembling the boilers with the assistance of a crane took a full day, Rodman said.

After a boiler explosion in 1892 caused a fire that burned down the first Breakers, Vanderbilt was determined to make the second effort “as fireproof as possible,” by putting the boiler room out by the
street, where it is camouflaged from view by the caretaker’s cottage.

A historical component of The Breakers is its heating system, Rodman explained, as the system is completely passive with no fans or forced hot air, but is rather a pure induction heating system that uses hot water and not steam.

Hot water was pumped from the boilers down through pipes into The Breakers, where there were heat exchangers in the basement and columns that would allow hot air to rise into the house. Additionally, the rising hot air would draw in fresh air from the outside, an “ingenious design” which Rodman said heats the house and also ventilates the house.

“It’s a true engineering marvel, a remarkable piece of engineering history,” Rodman said.

“Beneath The Breakers” will take visitors through spaces at the mansion including the caretaker’s cottage, the underground boiler room that powered the mansion’s five floors, a 360-foot-long tunnel connecting the boiler room to the main house, and a basement.

Admission to the tour is $20 for Preservation Society members and $25 for non-members. Children between 6 and 17 are admitted for $10. Tour space is limited and advance reservations are required. It is an underground experience in a historic structure and visitors will pass through some enclosed spaces. The tour is not handicapped accessible and comfortable, flat shoes are recommended.

Guided tours will be offered every 30 minutes. For a detailed schedule, visit www.NewportMansions.org.

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