

# Newton-Wellesley Hospital Gains Efficiency Via Boiler Room Overhaul

The boiler room project is on pace to meet aggressive financial return metrics established as part of the capital expenditure project funding.

By Author



FIGURE 1.

Over the past two and a half years, the COVID-19 pandemic has pointed out the glaring need to modernize health care infrastructure across the country. All throughout the U.S., many of the existing boiler rooms in health care facilities are 50-plus years old. The sustainability pressures from inside and outside constituents drive the need to reduce carbon and deliver a far greater level of fuel economy. Many health care organizations are looking for innovative ways to be-

come totally energy independent.

This need is especially prevalent in the government health care space. Many of the Department of Veterans Affairs (VA) facilities are in desperate shape and require a total overhaul of boiler room operations. The ability to remain a functioning health care operation while going through a total overhaul of their campus infrastructure remains a challenge. This requires considerable planning and insight combined with coordination of outside partners — engineering and specifying firms, building

companies, and manufacturers of products vital to the operation of a boiler room. The ability to bring these parties together to operate as one seamless team is paramount to achieving success.

## The Project Outline

Newton-Wellesley Hospital, a full-system member of Mass General Brigham, is a 1.2 million-square-foot medical campus with multiple buildings and 272 beds located in Newton, Massachusetts. The campus infrastructure was supported

by a boiler plant that had been in operation dating back to 1968. The systems were extremely costly, fuel inefficient, and failed to deliver on the exacting sustainability requirements demanded in today's world. A thorough study of facility infrastructure indicated the need to completely replace the existing boiler system. In 2018, under the leadership of Justin Ferbert, director of facilities, engineering, and maintenance, a comprehensive, two-year, \$11 million capital expenditure project was undertaken to create a completely new boiler room that allowed for future-proofing the energy needs of the entire campus.

### The Application Challenge

Given the scope of building an entirely new boiler operation, it was paramount to keep the facility up and running throughout the duration of the two-year construction period. The boiler room footprint was completely torn down, all the way to the concrete slab. It was a significant undertaking that was done without any service disruption. The need for increased energy efficiency was paramount, coupled with the ability to allow for cogeneration capability in the future. Meeting sustainability metrics goals was a key project driver. Analytics delivering short- and long-term financial payback requirements guided the project's success.

### The Product Solution

For an interim period, multiple rental boilers were required to ensure steam was provided across the entire campus-wide environment as the new boiler room was constructed. The team at Newton-Wellesley worked closely with Wilkinson Mobile Boilers Inc. to secure rental firetube boilers (350 and 800 hp) to provide temporary steam for a period of close to a year and a half. The project required close engagement and cooperation with all of the key partners: TCI/Thompson Consultant, design engineers; Skanska, general contractors; J.C. Higgins, mechanical engineers; and Sullivan & McLaughlin, electrical contractors. After a comprehensive engineering review, combined with



Figure 2. Caption.

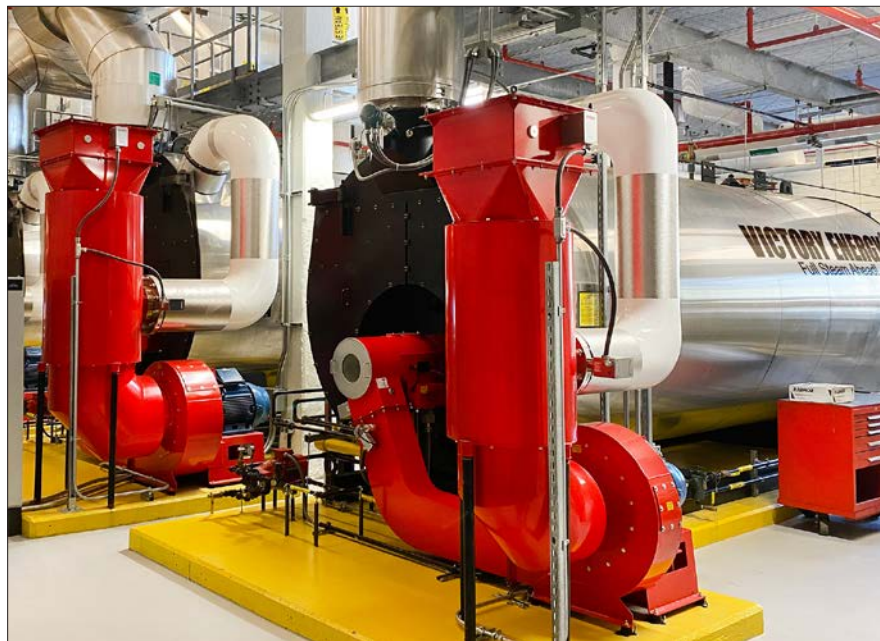


Figure 3. Caption.

overall executive hospital team oversight, Victory Energy, via New England Combustion Products Inc., was selected to provide the new boilers: three FRONTIER firetube boilers – two 600-hp units and one 350-hp unit. Key decision factors included being the best fit for the application and the ability to meet a tight delivery window. The Victory Energy FAST TRACK program enabled the boilers to be delivered in advance of standard industry lead times. The ability for the boilers to be maintained and serviced locally by the Wilkinson

Cos. was a critical component of the decision-making process.

### The Results

The boiler room project is on pace to meet aggressive financial return metrics established as part of the capital expenditure project funding. The boilers were fully tested at Victory Energy's steam test facility prior to shipment, which allowed for an expedient and cost-efficient installation and startup. TB

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