



Advanced Heating and Hot Water Systems

**CASE STUDY:**

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**CASE STUDY: RIVIERA BEACH RESORT ON CAPE COD IN BASS RIVER, MASS.**

## **State-of-the-Art Heating Equipment Keeps Resort Guests in Hot Water for Only 55¢ a Day**

***96%-efficient Phoenix Water Heater is the latest addition to resort's high-efficiency heating and domestic hot water system, featuring the latest technology to meet fluctuating demand cost-effectively.***

Imagine you are the plant manager for a 125-room resort with two very old boilers that badly need to be replaced. The job may well involve building riggers, taking out a doorway, and opening up the floor in several guest rooms to lower new, replacement boilers into the basement with a crane – in short, a potentially massive project for a building of this size.



Riviera Beach Resort general manager John Gilligan with his facility's new Phoenix Gas Fired Water Heater: "I'm enormously pleased with the energy efficiency of the new Phoenix, as well as all of the other HTP equipment we've installed over the years."

That was the scenario facing John E. Gilligan, III, vice president and general manager for the Riviera Beach Resort

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## Case Study: Riviera Beach Resort, *continued*

on Cape Cod in Bass River, Mass. Open six months of the year, April through October, Riviera Beach is a family-oriented resort, boasting 500 feet of private sandy beach along with three pools, a restaurant and a lounge.

**Facing the Inevitable:** It was January 2007 when Gilligan decided the time was right to replace the two boilers, with inputs of 400,000 BTU and 550,000 BTU, respectively. Originally, the units provided domestic hot water and baseboard heat during the two “shoulder” seasons each year (April and May, September and October). But for the past five years, they were used strictly for domestic hot water during the height of the resort season, which runs from June through August.

“They were old – one was installed 40 years ago,” says Gilligan. “They were costing a lot, and they weren’t in good condition. They were running all-out 24/7 for half the year, and there was no way to modulate them to meet the fluctuations in demand.”



Riviera Beach Resort general manager John Gilligan (right) with Heat Transfer technical training manager John Sawyer: “John took the time and energy to educate me on high-efficiency products,” says Gilligan.

Looking for energy savings, a quality product, and an installation that did not entail a massive construction project, Gilligan turned once again to HTP and its then-Regional Sales Manager [now Technical Training Manager] John Sawyer. The two had worked together on a number of heating equipment replacement projects over the previous five years.

“Right at the outset, John took the time and energy to educate me on high-efficiency products, their capabilities, and what I could expect as a return,” says Gilligan. “He went above and beyond the call.”

As a result, by 2007, Gilligan was a seasoned user of HTP appliances, having made several purchases to replace outdated heating equipment at Riviera Beach:

- In 2002, he purchased a Munchkin 199M with a 120-gallon storage tank, which replaced a 400,000 BTU boiler used to heat domestic hot water. “I did a lot of research during the off-season,” he recalls, “including attending a presentation by John on the Munchkin. The control board’s ability to show a malfunction to aid in diagnosing a problem was very convincing.”

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### Case Study: Riviera Beach Resort, *continued*

- The following winter, Gilligan made his second HTP purchase when he replaced another 400,000 BTU boiler with a Voyager Storage Type Stainless Steel Water Heater, Model SSV199-45S (199,000 BTU with 45 gallons of internal storage), and an 80-gallon SuperStor Ultra storage tank. Together, they provide 16 guest rooms with domestic hot water.
- In January 2005, Gilligan purchased a Munchkin 399M and two 120-gallon storage tanks to upgrade a setup that serves 40 guest rooms, a 50-seat lounge, and a 100-seat restaurant with a dishwasher requiring 180°F rinse water.
- In January 2006, Gilligan eliminated a third 400,000 BTU boiler that served 10 guest rooms by equipping the Voyager SSV199-45S with a second SuperStor 80-gallon storage tank.



A Voyager Stainless Steel Water Heater, with an input of 199,000 BTU and 45 gallons of internal storage (background), is coupled with an 80-gallon SuperStor Ultra storage tank (foreground) to provide hot water to 16 guest rooms.

Given this history, Gilligan had no hesitation in jettisoning the next two antiquated boilers and replacing them with one of the newest HTP products: a Phoenix Gas Fired Water Heater with 119 gallons of built-in storage. In addition, Gilligan equipped the Phoenix with a separate 119-gallon storage tank.

The sealed-combustion, direct-vented Phoenix delivers domestic hot water – and even space heating when connected to an air handler – at a combustion efficiency of 96%. “Our unit raises 240 gallons of 55°F water to 140°F in 45 minutes,” says Gilligan.

Opting for the Phoenix enabled the resort to avoid the nightmare scenario of opening up floors in several guest rooms to drop replacement equipment into the facility. The new water heater was compact enough that “the installers just walked in the basement door with it and did the installation without a glitch. Overnight, we went from two boilers and a million BTUs, to a single water heater with a supplemental storage tank that did the job more effectively.”

More importantly, guest complaints about “no hot water” went from daily occurrence to nonevent, even during the busy season. Featuring all stainless steel construction and a spark ignition

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## **Case Study: Riviera Beach Resort, *continued***

system, the fully modulating, ultra-low NOx Phoenix burner is “load-matching,” modulating its firing up or down to meet fluctuating demand. As the call for hot water rises, the unit’s fan accelerates; as demand decreases, so does fan speed.

As a result, the Phoenix is not only able to meet high-volume demand the resort encounters during the peak season, but it also cuts back proportionately when demand is no longer there. That saves substantial amounts of energy. This is in sharp contrast to a conventional burner, which always fires to the maximum, regardless of demand. The load-matching capability of the Phoenix also dramatically reduces on/off cycling, resulting in longer component life and overall reliability.

**Pennies a Day:** When the resort closed after the 2007 summer season, Gilligan put pen to paper to calculate just how much all this hot water was costing the Riviera Beach Resort. From the time the new Phoenix unit was installed in May until the resort’s closing in October, the facility consumed approximately 1,567 cubic feet of natural gas, at a cost of \$1,723.70. The building sold a total of 3,127 guest rooms during that six-month period, so Gilligan was able to supply hot water to each of those rooms for approximately 55 cents per night (1,724/3,127). “That is amazing,” he says.

“I’m enormously pleased with the energy efficiency of the new Phoenix, as well as all of the other HTP equipment we’ve installed over the years. Many of our rooms are rented by entire families, yet I spend well under a dollar a day to give them all the water they need for showers and baths. It’s very economical for me.”

**ABOUT HTP:** Founded in 1974, HTP is a designer and manufacturer of advanced heating and hot water systems. Product categories include: modulating condensing commercial and residential high-efficiency boilers, indirect water heaters, high-efficiency gas-fired water heaters, solar hot water systems, and oil-fired and electric water heaters.

**For more information,** visit HTP at [www.htproducts.com](http://www.htproducts.com). Or call toll-free: 800-323-9651 (508-763-8071 if calling from Massachusetts).

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**Case Study: Riviera Beach Resort, *continued***

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