

Problem:

Outdated hotel water heating plant is oversized and inefficient. A new, alternate means of water heating is needed to lower the owner's utility costs.

Solution:

Provide a more efficient and reliable domestic hot water heating plant complete with energy management system from Heat Transfer Sales.

Project:

**Major Crabtree-Valley
Area Hotel**

Location:

Raleigh, NC

Products Utilized:

- Raypak Atmospheric Indoor Water Heaters
- Raypak Storage Tanks
- TACO inline pumps

Reference Info:

www.raypak.com

HOTEL BENEFITS FROM NEW UPGRADED DOMESTIC HOT WATER HEATING PLANT WITH ENERGY MANAGEMENT SYSTEM

When it came time for a major Crabtree-Valley area hotel in Raleigh, NC to undergo a remodel and renovation, a new domestic water heating plant was also in the plans. That's when their director of engineering, contacted Heat Transfer Sales of the Carolinas, Inc (HTS) for assistance. From past experiences, he knew HTS would provide both customer service and knowledgeable sales people.

The 376-room hotel had an existing boiler heating plant consisting of two large 4000 MBH input steel tube boilers and an instantaneous water heater that was installed for an addition. The boilers indirectly heated two 1500 & 1800 gallon storage tanks by circulating hot boiler water through tube bundles inside the tanks. The hotel originally had a central laundry that was a large portion of the domestic water heating load. The majority of this laundry load was now being farmed out to other sources. With that being the case, there was a need to downsize the overall BTUH input capacity of the water heating plant.

After the current domestic water heating load was calculated, HTS proposed to have two new Raypak (2500 MBH input each) water heaters with two 534 gallon storage tanks installed. This was a considerable less amount of BTUH input and storage capacity but still allowed for future expansion if needed. The new heaters were more efficient than the old boilers and would heat the water directly. The

owner would also benefit from less standby heat losses due to the fact that the Raypak copper-finned tube water heaters
(Continued on next page)

“During a follow up call from our gas utility customer representative, he noted that our gas consumption had dropped and inquired to the reason why.”

- Hotel Director
of Engineering



Two Raypak WH-2500 water heaters provide hot water to the guests rooms and kitchen area in the 376-room hotel.

CASE STUDY

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Since 1971, HTS has been setting the standard for hydronic HVAC and engineered plumbing suppliers. HTS offers the HVAC experience and professionalism of degreed sales associates. Engineering graduates staff every sales office helping you evaluate system requirements and select the best equipment for your job.

HTS can assist you with your water heating & engineered plumbing accessories

HTS stocks Raypak water heaters, storage tanks, and replacement/repair parts in our Greensboro warehouse. HTS also stocks a large selection of bronze domestic water recirculation & water heating pumps that can range in application from a small residential house to a large commercial facility.


Heat Transfer Sales
of the Carolinas, INC.
The driving force in forced circulation.

hold significantly less water than the existing steel tube boilers. In addition to providing higher efficiency water heaters, HTS also proposed an energy management system designed to learn the usage patterns of the domestic hot water and lower the setpoint water temperature during off-peak demand periods. (See *Tech Topic below*) This control system would provide an additional energy savings as a bonus to the more efficient water heaters.



Two Raypak 534 gallon storage tanks are maintained at various temperatures depending on demand history.

The controls would also help reduce the ON/OFF cycling of the water heaters.

After the units were installed and operating, the owner noticed a “noticeable difference in gas costs.” The owner also mentioned “During a follow-up call from our gas utility customer representative, he stated that our gas consumption had dropped and inquired to the reason why.” He also stated that there was a “definite improvement on their profit/loss statements” and added that “to this date, there have been no maintenance issues with the Raypak water heating products.”

Over the last 25 years, HTS has supplied thousands of Raypak boilers and water heaters to hotels, nursing homes, colleges, schools and other commercial buildings throughout North & South Carolina.

TECH TOPIC: DOMESTIC WATER ENERGY MANAGEMENT SYSTEM PROVIDES INTELLIGENT, DEMAND-BASED SOLUTION

The RayTemp electronic control is an energy management system designed for use in domestic hot water systems with single or multiple stage heaters. Utilizing a PID control algorithm, the Raytemp minimizes operating costs by learning the usage patterns of the installation and lowering the water temperature setpoint where demand history permits. The result is that the water will only be heated to the peak demand temperature when the demand requires it!

