

Case Study

How a Governor's Mansion Became Officially Efficient

Customer	Governor's Mansion
Location	USA
Industry	Government
Sales Representative	Calloway Engineered Systems
AERCO Product Installed	Innovation 1060



What the Client Needed

The Governor's Mansion is a three floor, 30-room, Greek Revival-style home built in 1967 that covers 24,000 square feet and stands on 18 acres. The mansion's space and domestic water heating were provided by a combination system consisting of a two natural gas-fired steam boilers that fed heat exchangers for space heating, a swimming pool, and a U-tube heat exchanger inside a 500-gallon storage tank for domestic water heating. While one centralized steam system was meeting all the building's needs, it was far from efficient. The plant had to operate continuously to meet domestic hot water needs rather than shut down when the heating season ended. Due to cycling and steam distribution piping losses, leaking steam traps and more, the steam boiler operated at a meager 50-60% efficiency.

AERCO's Solution

The state Building Authority hired an engineering firm to upgrade the building's heating system. The firm recommended decentralizing the domestic hot water from the space heating system to reduce natural gas consumption. They also recommended the AERCO Innovation 1060 MBH condensing gas-fired water heater for the installation. Here's why the tankless, 96% efficient Innovation 1060 got the vote:

- The Innovation can match load over a widely varying profile—anywhere from 1 GPM up to 25 GPM at an 80°F temperature rise.
- The unit's all-stainless-steel fire-tube heat exchanger construction guarantees longevity, and an industry-leading 10-year warranty.
- The Innovation's small footprint, low mass and ability to fit through a standard doorway meant an easy swap-out installation with no service interruption. Everything—the unit, a 200-gallon storage tank and piping—took the same space as a single, previous boiler.
- The 200-gallon tank was installed for high peak loads, when the governor hosted official functions at the mansion. The original 500-gallon tank was removed, freeing up considerable space in the boiler room.

Return on Investment

The improvement in building operating efficiency was evident within the first month of operation—when the mansion's July gas bill was a mere 15% of what it had been the previous July.