

Hilton Washington Hotel Boiler Conversion/Upgrade

FIRST PLACE

ASHRAE Excellence in Engineering Award
Chapter Level

Project Highlights and Results

- 12-Story hotel with conference center, parking garage, health center, outdoor pool, tennis courts, restaurant
- Elara Energy Audit and Engineering Analysis identified opportunities to improve HVAC performance and reduce energy consumption
- Due to size, location, and physical constraints of existing boilers in the building's basement, boiler conversion from medium to low pressure, burner upgrades and DA tank modifications were recommended in lieu of replacement
- Conversion required re-educating/refreshing code language to obtain approvals from local authorities
- Superior energy savings and significantly reduced operating costs due to elimination of stationary engineers needed to man the high-pressure steam plant 24/7/365

Project Background

Owner:	Clearview Hotel Capital, LLC
Location:	Washington, DC
Team/Team Lead:	Don McLauchlan, Jay Parikh, Chad Von Holten
Elara Role:	MEP Engineer
Type:	Conversion and Upgrade
Construction Cost:	\$1,860,000

Project Overview

Building Type:	High-Rise Hotel
Building Attributes:	12-Stories, 1,119 rooms, conference spaces, parking garage, kitchen, restaurant, bar, health center, outdoor pool, tennis courts; 1,000,000 SF
Initial Construction:	1964
MEPPFIT Systems:	Medium Pressure Steam Plant, Medium/Low pressure steam distribution, Chiller/Cooling Tower, WSHPs, AHUs, DDC

Innovation

- Reduced operating steam pressure from 25 to 11 psi and state-of-the-art low NOx burners, a VFD for the combustion air fan, and new digital flame safeguard and combustion control system contributes to a highly efficient boiler plant and significant energy savings.
- Code language related to operation of a low pressure (<15 psig) steam plant is subject to interpretation and required Elara's careful and thorough review; persistent follow-up with local code officials; and successful agreement of project objective to help eliminate continued presence of stationary engineers (24/7/365) once the project was completed.
- Installation of energy efficient burners and burner controls improved overall operation, maintenance, and reliability; reduced energy consumption which resulted in securing \$56,000 in gas incentives.
- New burner exhaust gas analyzer's continuous display and data trending capability allows for the avoidance older environmental testing methods related to boiler emissions and their associated costs.

