

Case Study

AERCO Solution Delivers Gold Medal Performance for Olympic Hotel

Customer	St. John's Hotel Gangneung
Location	Gangneung, South Korea
Industry	Lodging
Sales Representative	Jieum E&C
AERCO Product Installed	BMK 3000, B+II WaterWizard



What the Client Needed

St. John's Hotel in the coastal city Gangneung, South Korea, has the honor of hosting the Olympic ice events at the 2018 XXIII Olympic Winter Games. St. John's Hotel is a large-scale hotel with a high hot water demand for amenities including 1,091 guest rooms, two outdoor pools, a lazy river, fitness center and restaurant. Hotel management and the engineering team determined that the existing, non-integrated, predesigned tank-based heating and hot water systems originally designed for the hotel would not meet their high standards of performance criteria. Most importantly, the hotel wanted a new, efficient system that would deliver energy savings.



AERCO's Solution

Bae Jun-ho, a construction site manager for Grand Blue E & C, recommended a high efficiency system featuring the Benchmark 3000 (BMK3000) gas-direct fired boilers and AERCO B+II WaterWizard tankless steam-to-water heaters. Hotel management agreed that the AERCO boilers and water heaters would help them achieve the gold medal performance they sought due to their superior reliability, long life and high efficiency.

Nine compact BMK3000 boilers were installed for space heating in the hotel. With unmatched 15:1 turndown, the BMK3000 maximizes operating efficiency and seasonal fuel savings. It precisely matches fluctuating loads to minimize boiler cycling and eliminates wasteful temperature overshoot — the operating efficiency of the BMK3000 boiler actually increases as the load decreases. As with all members of the Benchmark series, the BMK3000 consistently delivers <30ppm NOx at all firing levels, allowing it to meet the hotel's environmental performance criteria, as well.

For domestic hot water, six AERCO B+II WaterWizard high-efficiency steam-to-water heaters were installed. Featuring outstanding thermal efficiency of 90%-99%, they also have tight temperature control of $\pm 2^{\circ}\text{F}$ under constant loads and $\pm 4^{\circ}\text{F}$ control under normal load changes. This creates more than just comfort and peace of mind for hotel management – it helps reduce operating and maintenance costs across the overall system.

Return on Investment

By converting to the AERCO BMK3000 condensing boilers and the high efficiency B+II WaterWizard steam-to-water heaters, the operators of St. John's Hotel were able to improve system performance and efficiency, meet the hotel's high hot water demand despite load variations throughout the day, and save money:

- 30% reduction in installation time and costs
- 30% reduction in fuel bills
- 25% increased efficiency

AERCO is supplying hot water to five out of the six main hotels at the 2018 XXIII Olympic WinterGames in South Korea.



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