



## Introduction

The JW Marriott Starr Pass Resort & Spa in Tucson, AZ, is where style meets comfort. With spacious rooms and modern decor, this luxury hotel has become one of the best locations for relaxation. The hotel offers 540 spacious guest-rooms and 35 suites. It is also a perfect location for business or social events, with sophisticated venues that can host up to 3,300 guests. Keeping guests comfortable is the JW Marriott's main priority and providing the proper equipment to enhance comfort is ours.

The team at McCook Boiler Pump, a P-K trusted representative, was contacted to perform the replacement of outdated and highly inefficient systems.

## Challenges

At the time, inefficient heating hot water boilers were operating separately from the domestic hot water system. Over-sized storage tanks were contributing to additional energy losses. Both loops were operating 365 days per year due to a requirement of hot water re-heat on the hydronic side of the system. The system was also failing to utilize current technological advancement effectively. The main goals of the project were to eliminate 6,000 gallons of stored hot water and ensure that the new system could meet compliance with corporate initiatives for performance and Legionella mitigation.



**McCOOK**  
BOILER & PUMP

# Patterson-Kelley Solution

During the replacement project, the team installed Patterson-Kelley condensing boilers in three different zones. The boilers help supply hot water to three different sets of P-K DURATION® III, with the purpose of producing instantaneous domestic hot water to all three DHW zones throughout the resort. The DURATION® III is designed to offer low cost of ownership through simplicity, high efficiency, durability and ease of installation. Each unit is a fully packaged, water-to-water indirect domestic hot water system, engineered to complement any condensing source. With this new system installed, they were able to eliminate all the storage tanks.

The condensing boilers installed include a SONIC® SC4000, two MACH® C1050, and two MACH® C1500. The P-K SONIC® is a stainless-steel condensing boiler that operates at 97% efficiency. While the P-K MACH® is an aluminum condensing boiler with a unique alloy that resists corrosive condensate. Both units are equipped with the NURO® Touch-Screen Control system which provides full cascading capabilities to ensure peak efficiency.



## Efficiency

The new system is expected to achieve fuel savings of 50%, which will yield a total cost payback in less than 5 years. The instantaneous generation of domestic hot water will help the management team at the JW Marriott resort reduce their costs for Legionella mitigation. The McCook Boiler & Pump team offered solid representation with overall project support, comprehensive project management, and thorough engineering analytics and design services.

