

Case Study - Sun City

Hot Water - Water to water heat pump solution



Sun City is large resort in the North West Province of South Africa. The resort includes four hotels, two of which are five star hotels.

These are the world famous Lost City, Sun City Main Hotel, Sun City Cabanas, Cascades hotel and the self-catering Sun City Vacation Club.

Facts & Figures

120 000 litres of hot water needed to be heated to 58°C. A water-to-water heat pump solution was installed in the place of the Lost City.

Need

Sun International wanted to reduce its impact on the national grid and work towards Eskom's aim of reducing demand by 10%. The group also wanted to maintain aesthetics and avoid any noise pollution.

Sun International wanted to improve its Heritage® score by participating in an ESCo project.

Solution

Solahart designed a unique solution for The Palace of The Lost City. The system is designed to recover the energy losses that occur from hot water usage and the ring main circulation. Water to water heat pump technology was utilized. The solution uses water from the surrounding lakes as an energy source.

The water from these lakes is diverted and pumped through the heat pump and the available energy is then extracted and transferred into hot water storage.

Installed 3 x 80kW output units with an average COP (Coefficient of Performance) of 4,95. The total demand reduction is 194kW.