

# Case Study | Leading Property Manager

Using the Switch Platform to remotely optimize HVAC controls, increasing overall site energy efficiency by 5%



## The Customer

**Leading global property manager** with lengthy experience in owning and operating real estate assets.

**Industry:** CRE

**Geography:** International

**Employees:** 80,000+

## Site Overview

**500+** data points

**210,000+** sq. ft.

**1 multi-residence building** on 18 floors

**193** apartments

## The Opportunity

### Optimizing a water-source heat pump system

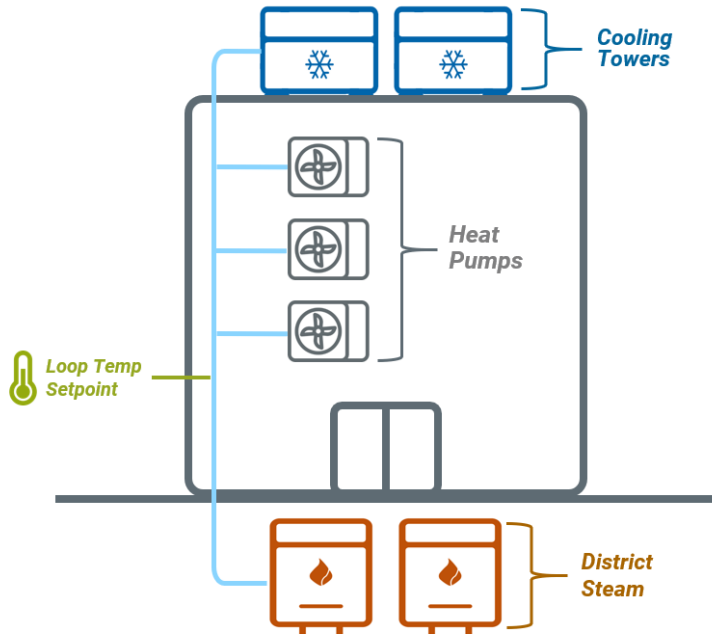
This large multi-residence building operates with a water source heat pump (WSHP) system, circulating conditioned water throughout the building and supplying terminal heat pump units in each apartment and common space.

The system is comprised of three primary components:

- **Heat Pumps** distributed throughout the building (193 total) heat and cool the apartment spaces based on each resident's temperature preferences. The heat pumps connect to a common water loop that is continuously circulated to transfer heat into or out of the building.

- **Cooling Towers** reject heat from the water loop when the building requires cooling.
- **District Steam Plant** contains heat exchangers to heat the water loop with utility-provided steam.

The entire system relies on a single **Loop Temperature Setpoint** that controls the temperature of the circulating water loop. The setpoint was originally set to a constant 65°F year-round, regardless of the season or building conditions.

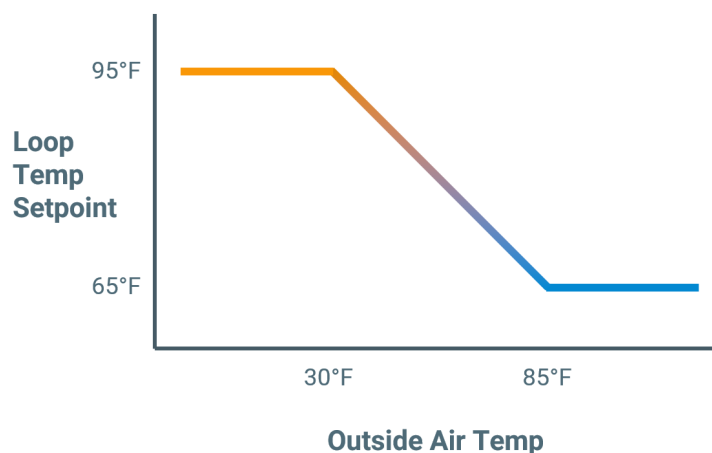


## The Solution

### Implement a no-cost control change to optimize system performance

The Switch Platform was deployed in the building and the WSHP system performance was evaluated using Fault Detection and Diagnostic (FDD) rules tailored for the system conditions. The FDD rules detected an opportunity to optimize the WSHP system controls by adjusting the Loop Temp Setpoint based on outside air conditions.

Using Switch Control, the Switch team worked with this property manager to **implement a no-cost control change to optimize the Loop Temp Setpoint**. The Loop Temp Setpoint was configured to reset from 95 – 65 degrees over an outside air temperature range of 30 – 85 degrees, respectively.



## The Results

**Switch Platform adjustment improves energy performance by 5%, significantly reducing overall site cost and footprint**

The no-cost change to the control strategy immediately improved the total building energy performance. In the winter months, the loop is now maintained at warmer temperatures optimizing the energy performance between the district steam plant and the 193 terminal heat pumps. Conversely, in the summer months the water loop is maintained at a cooler temperature to optimize the cooling tower and heat pump performance.

This improvement to heating and cooling efficiency delivers a notable decrease in overall site energy cost, while also reducing the building's carbon footprint.



**1 new control strategy implemented at no additional cost to the customer**



**5% reduction in overall site energy expenditure**



**193 apartments' heat pumps operating at optimum performance levels**

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