



FAULT DETECTION FOR OUTDOOR EQUIPMENT

CLIENT OVERVIEW

CopperTree was commissioned to collaborate with an energy efficiency partner to conduct an in-depth analysis of a premium office building located in the United States. The building spans an impressive 207,000 square feet and is equipped with eight Air Handling Units and two Roof Top Units. In addition, the building features two fluid coolers, which serve as the secondary cooling source, providing free cooling during mid-season or winter. Heating for the building is provided by two boilers.

BENEFITS



By following the solution proposed by CopperTree's Kaizen software and our Engineer, the building can achieve a yearly energy savings of 48,000 kWh as well as yearly cost savings of \$4,000. As an added benefit, the building's yearly GHG emissions can be reduced by up to 21 metric tons of CO₂e.



THE PROJECT

A high-ending office building in the United States is implementing CopperTree's Kaizen system to assist with their daily building operations. They are leveraging Kaizen as the most powerful tool to provide high quality indoor thermal comfort, as well to reduce energy consumption.

THE CHALLENGE

Notably, the equipment schedules for this building vary based on the functionality of the different zones. For instance, most AHUs operate between 4:00 AM and 5:30 PM from Monday to Friday, and from 6:30 AM to 2:30 PM on Saturdays. However, one AHU operates from 3:00 AM to 10:00 PM every day. The rooftop units, on the other hand, operate from 4:30 AM to 5:30 PM, Monday to Friday.

THE SOLUTION

To ensure the accuracy of the equipment schedules, our Building Application Engineer developed a range of schedules that have been applied to the various AHUs and Roof Top Units. By doing so, we have been able to generate both energy and cost savings. These savings can be broken down into two distinct categories. Firstly, we have identified potential savings through reduced fan power consumption. Secondly, we have also identified the potential for thermal energy savings, which relate to the heating and cooling supply of the building.