



Wilkes County Courthouse worked with Daikin's Service Team to evaluate cost savings and efficiency of a 20-year old chiller versus new air-cooled chiller.

CASE STUDY

Government

Name

Wilkes County Courthouse

Location

Wilkesboro, NC, USA

Issue

Determine best practices and a solution to reduce energy and service costs, and increase system efficiency

Solution

Daikin Applied Service

(1) Daikin Trailblazer® air-cooled chiller

Daikin Building Controls

Daikin Applied Service Team's Cost Analysis Extends Relationship, Slashes Customer Costs

Tucked at the foot of the Blue Ridge Mountains, the modern Wilkes County Courthouse in Wilkesboro, North Carolina, is a long-standing Daikin Applied service customer. For nearly 20 years, the courthouse had been reliably cooled with a Daikin ALS170A screw compressor chiller, but the unit was beginning to show signs of aging.

Analysis-based approach informs contract extension

At the customer's request, Steve Heidorn, Daikin's district service manager, and Brett Harrell, service sales representative, set out to develop a new service proposal for the county. In doing so, it quickly became apparent that the operational costs for the existing chiller would rise significantly in the coming years.

"The chiller was nearing the end of its useful life, which would drive service demand up, but we realized an opportunity to help the customer cut costs and increase efficiency by installing a new chiller versus continuing to service the existing one," said Harrell.

"We calculated annual savings of about \$6,800 in energy costs with the installation of a new chiller at the courthouse."

Steve Heidorn, District Service Manager

For 20 years, the existing chiller had maintained critical cooling functions to provide a comfortable setting inside the courthouse, despite North Carolina's humid climate. As summer approached, it became clear that due to the age of the existing chiller, it was not able to meet the cooling load of the building in order to sufficiently maintain indoor air quality and

keep the courtrooms and judges' chambers at the desired temperature.

As the Daikin service team finalized a new seven year service proposal, its analysis confirmed a rise in service requirements would be necessary to maintain the existing screw chiller due to the age of the chiller. To provide the customer with options on how to proceed, the service team completed a separate analysis related to costs savings for the courthouse, if it instead purchased a new, more-efficient chiller.

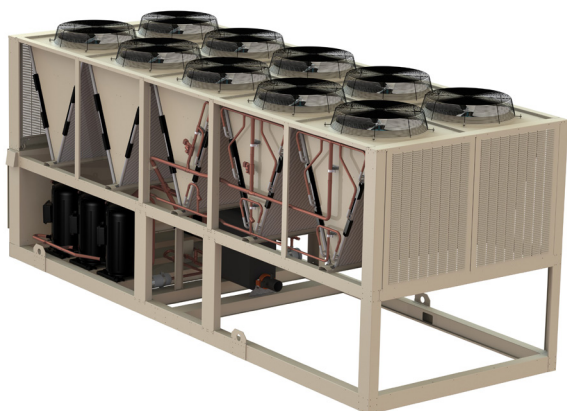
"We calculated annual savings of about \$6,800 in energy costs with the installation of a new chiller at the courthouse," said Heidorn. "Over the seven years of the new service agreement, the courthouse could save almost \$48,000 in energy costs alone."



The existing chiller is removed to make way for a new Daikin Trailblazer air-cooled chiller that could save \$48,000 in energy costs over seven years.

Cost-savings drive decision making for the customer

This cost savings potential was the determining factor in the courthouse facility team's decision to purchase a new chiller.



The closely matched, high efficiency, and low maintenance Daikin Trailblazer chiller was the clear choice for replacing the existing chiller.

A Daikin Trailblazer air-cooled scroll chiller was selected as an optimal replacement because the unit closely matched the older unit with respect to electrical, piping and dimensional characteristics, in addition to the cost and energy savings Daikin's initial analysis showed. Further, the new chiller would help the courthouse achieve the desired temperature settings inside the building more efficiently and reliably. The combination of high efficiency, low maintenance, and the rock-solid reputation of the Trailblazer product made it the clear choice for replacement.

While attempting to configure the new Daikin chiller to operate with the existing building automation control (BAS) system, the service team hit a roadblock. Although a BACnet™ state-of-the-art integration card was provided with the new chiller, the existing BAS control system was unable to communicate via the standard BACnet chiller communication protocol. The BAS manufacturer then proposed a five-figure upgrade to the control system in order to fully integrate the new chiller information into their BAS system. The courthouse saw this as less than ideal and they asked Daikin Applied to find an alternative solution.

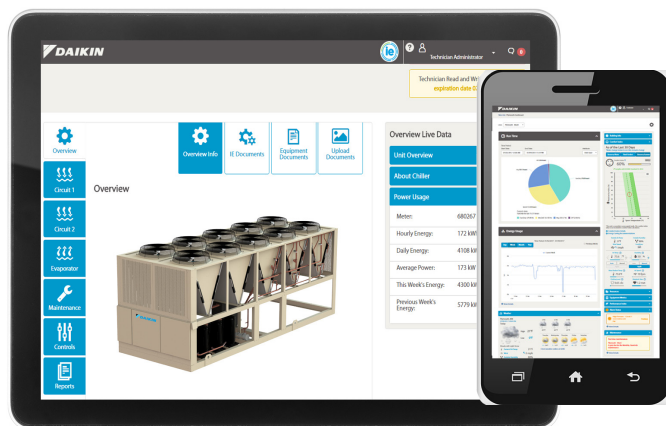
"We recommended our Daikin Building Controls solution be added to the new chiller to provide the service team with an alternative way to remotely access, control, and manage the unit's settings via a cloud-based connection. In addition, Daikin Building Controls eliminated the need to fully integrate the new chiller into the BAS control system," said Harrell.

Streamlining service and maintenance through the cloud

Cloud-based Daikin Building Controls is the only control platform that connects directly to an HVAC unit to monitor energy consumption,

providing unprecedented visibility at the equipment level. A great example of innovative, smart technology in the HVAC industry, it gives owners a deeper, more accurate performance measurement while enabling direct access to over 240 data points on the Daikin Trailblazer chiller in real time. The installation of Intelligent Equipment saved the customer thousands of dollars and solved the compatibility issue.

"By adding Daikin Building Controls, we truly elevated how effectively the chiller can be managed and maintained," said Heidorn. "The control solution gives the Daikin service team and the facilities managers at the courthouse a much deeper understanding of how this unit is performing. Adding Daikin Building Controls helped extend the efficiencies and cost savings of the chiller."



Daikin Building Controls were added to the chiller for unprecedented visibility into equipment performance, energy savings, and maintenance.

The new controls-enabled Trailblazer will also help keep service costs down for Wilkes County Courthouse in the longer term because diagnostic checks and other functions can be remotely managed. If the chiller does experience a service issue, it can be diagnosed remotely and the cause determined, prior to sending a technician to the facility to fix the issue. This visibility into the unit's operation reduces unnecessary truck rolls and optimizes service dispatch efficiency.

While the contract with Wilkes County is comprehensive and Daikin will continue to service the system, the on-site maintenance team also has instant and remote access to the Daikin Building Controls dashboard. From any device with internet access, the team is able to log-in with a unique username and password to check the system status.

The Daikin Applied team took a solutions-based approach, keeping the customer's best interest in mind, and this ultimately helped the services team extend its ongoing relationship with Wilkes County. The courthouse now features a new, more efficient Trailblazer chiller enabled with Intelligent Equipment, that will keep the building cool and comfortable for many years to come, no matter which season is passing through the Blue Ridge Mountains of North Carolina.