

Special Projects Case Study

Cooper Oates Team Finds Creative Cooling Solution for Branch Hardware Store

Background

ACE Hardware is the largest non-grocery American retail cooperative specializing in paint supplies, BBQs, lawn and garden, hand and power tools. As the most popular hardware store in the United States with 4,445 locations nationwide as of June 2023, it's essential to have a comfortable, cool climate inside ACE Hardware's large retail spaces- especially as home improvement projects become ever more popular in the summer months.

Issue

In summer of 2021, the building manager of ACE Hardware in Turlock, California became aware of an uncomfortably warm environment inside the store. Worried of losing customers due to the heat, ACE Hardware rented portable cooling units to help their struggling HVAC system- which were very expensive yet not remotely effective enough to serve as a long-term solution for the 40,000 square foot store in the summer. Something else needed to be done.

The corporate ACE Hardware construction manager in Lenexa, KS, well aware of the cooling issue with the Turlock store, decided to move forward with replacing the air handler and went to Trane for pricing and availability. For installation of the new units, the manager got in contact with Spaeth, Inc., ACE Hardware's usual go-to HVAC contractor in their midwest region. Spaeth, Inc., knowing the branch in Turlock, CA was out of their service area, kindly recommended Cooper Oates as a suitable contractor for the unit replacement.



A section of the new Trane Split System 80-Ton Condenser 44,000 CFM Air Handling Unit being lifted via crane through the roof opening.

Added Challenges

Previously, finding a mechanical contractor willing and able to take on this job was quite difficult. The project was made particularly challenging because the building was built around the air handler on the structural platform. Other local mechanical contractors had stated that the air handler couldn't fit through the door openings nor the narrow passageway between the mechanical room and warehouse, proving replacement would be no simple process. Therefore, replacing the unit required a creative workaround to the structural constraints.

Solution

When our Special Projects team went to the site, they came up with a plan to cut the roof open without affecting the roof's structure for access to remove and replace the 44,000 CFM air handler. Part of our team's scope was to cut the



Quick Facts

Name: ACE Hardware




Location: Turlock, California

Building Size: 40,000 square feet

New Units: Trane Split System 80-Ton Condenser 44,000 CFM Air Handling Unit, cooling only

Time Frame: Time frame was dictated by the availability and delivery of equipment. We planned with the customer to do the work during the seasonal transition in the spring when there is a low demand of heating or cooling.

Outcome Benefits:

-  Units are up to date with 2023 energy standards
-  Lower energy usage for cooling the building, meaning lower cost for tenant
-  Comfortable customers mean drawing more business to the ACE Hardware, Turlock location.

*This job used customer provided equipment.



existing air handler into pieces small enough to fit through the allowable roof, as the opening had to be limited in size to avoid cutting any structural members. The new air handler had to be ordered in sections small enough to fit through the roof's opening- an uncommon constraint. In addition, Cooper Oates provided structural engineering plan sheet calculations and mechanical engineering to draw M Sheet and title 24 for permit purposes.

Due to supply chain challenges and a very wet winter, we had to wait for equipment arrival and delay opening up the roof until there was a guaranteed week of dry weather. Up until this point and due to the delay, our team continued to service the existing air handler to keep it working well enough to cool the store before the replacement.

Work Performed

Prior to the new air handler arriving on site, our Special Projects crew expanded the structural steel platform where the air handler was to be set, fabricated in-house by our team, and added a new catwalk for future service access. On replacement day, the roof was cut open by a carpenter to allow the air handler sections to fit through.

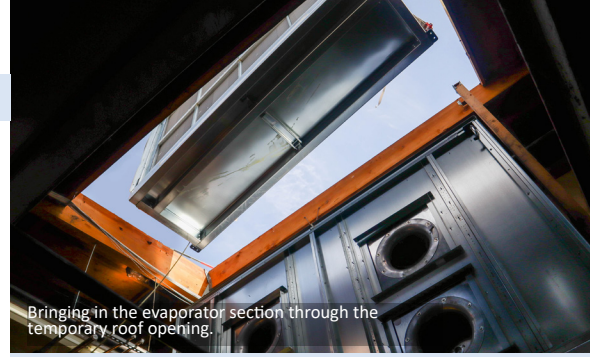


Replacing the condensing unit

Next, our team cut the old air handler into sections ready for removal and cleaned up old debris on the platform for a safe working environment. We then facilitated the removal of the old air handler in sections via crane through the roof opening, and proceeded to bring in the new unit afterwards in the same fashion. Lastly, we replaced the condensing unit located on the ground outside of the building. After setting the units, we reconnected the Carrier iVu controls to the newly installed units and reconnected the electrical to the air handler and condensing unit.

Outcome

The Cooper Oates Special Projects team was successful in solving ACE Hardware's challenging cooling issue, due to creative thinking and teamwork. Since the new equipment meets 2023 energy standards, ACE Hardware will save money due to decreased energy usage, and have a smaller carbon footprint due to the new unit's efficiency and positive environmental impact.



Bringing in the evaporator section through the temporary roof opening.



Our History

For over half a century, Cooper Oates has proudly served businesses and commercial properties throughout the Sacramento Valley and Northern California. From our beginnings as an air conditioning installer, to our current capability as a full-service mechanical provider, we have placed your facility's comfort and your business's profitability front and center.

Our team of experts has extensive experience designing, installing, monitoring, and servicing a broad range of mechanical projects including:

- Office Buildings
- Industrial / Conditioned Warehouses
- Hospitals / Clinics / Labs / Medical Offices
- Educational Facilities
- Server / Datacenter / Clean Rooms
- Restaurants / Commercial Kitchens
- Manufacturing / Distribution Centers