

Stetson University: Pi Beta Phi and six more sorority houses

TRICOIL air handlers replaced the air conditioning in seven occupied chapter houses in DeLand, Florida, and the controls record shows them still holding humidity years later.

DeLand, FL

Stetson University sorority row

7 houses

One TRICOIL air handler per chapter house

\$230,000

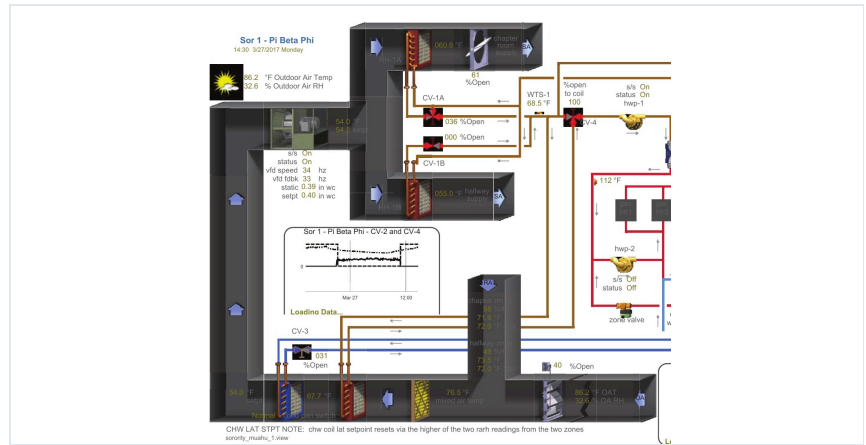
Contract value

2012–2013

Air conditioning replacement



A chapter house TRICOIL air handler in its equipment room.



Pi Beta Phi's building automation screen, March 27, 2017, 2:30 pm, four years after start-up.

THE CHALLENGE

A sorority house swings from nearly empty to a packed chapter meeting in an hour, with residents upstairs around the clock. In Central Florida's humidity, a conventional system sized for the crowd runs at part load most of the time, which is exactly when it stops removing moisture and the house turns cool and clammy. The fix had to go into seven occupied houses.

THE SOLUTION

For Strategic Facilities Development, Inc., Sensible Equipment Company engineered a Daikin air handler for each house with a TRICOIL precool coil, a chilled water coil and two zone reheat coils: one for the chapter room, and one for the ventilation air serving the two-floor bedroom wing. The bedrooms are heated and cooled by individual fan coil units, while the TRICOIL ventilation air is dried to a dew point low enough to control humidity in every bedroom. A field-piped water loop with an inline pump carries heat from the precool coil to whichever zone needs reheat. Because the fan runs on a variable speed drive, the precool and reheat coils were selected at 70% airflow, where the unit spends most of its hours. The chilled water coil's leaving-air set point resets from the higher of the two zone humidity readings, and gas water heaters provide winter heat.

THE RESULT

Typical house unit at design · 3,400 cfm	
TRICOIL precool coil	2.2 tons cooling
TRICOIL reheat, no new energy	7.6 kW heating
Chilled water coil	9.3 tons
Pi Beta Phi, operating · March 27, 2017, 2:30 pm	
Air through the precool coil	76.5°F → 67.7°F
Leaving the chilled water coil	54.0°F
Chapter room supply, reheated by TRICOIL	60.6°F
Chapter room	71.9°F · 58% RH
Bedroom wing hallways	73.5°F · 49% RH

Design capacities are from the project coil schedule. Operating values are read from the building automation screen, with the supply fan at 34 Hz (part load).

Why it carries over. Dormitories, barracks and other student and military housing face the same pattern: people around the clock, big swings in occupancy, and Florida humidity. TRICOIL zone reheat fits new air handlers and replacements in occupied buildings.