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Case Study – First Baptist Church of Hamilton Park

EDUCATION / HEALTH CARE / LODGING / MANUFACTURING / OFFICE BUILDING / RETAIL / SPECIAL



39M AERO™ Air Handling Units Deliver Unique On-Site Installation Benefits

Project Objectives

Keeping their sanctuary cool while simultaneously heating classrooms and administrative offices was the year-round challenge that faced the Building and Grounds Committee of First Baptist Church of Hamilton Park, Texas. The final comfort solution would also need to utilize their central plant's original two-pipe hydronic system, embedded throughout the facility, and mechanical rooms that could only be accessed through a 3' x 7' door. Additionally, installation would have to be accomplished without interrupting the services and religious education classes held every Wednesday and Sunday.

Solution

In addition to their many operational features, Carrier's 39M AERO air handling units were selected for this project because of the ease with which they can be disassembled and reassembled on site. This design characteristic allowed the contractors to transport each section of the disassembled AERO units into the mechanical rooms through a standard commercial doorway. The facility's central chiller plant was also redesigned to provide two-pipe flow to a majority of the building and a four-pipe flow to the new AERO units.

39M AERO™ Air Handler Benefits:

- Easy disassembly and reassembly on-site.
- Innovative design and construction delivers excellent acoustic performance.
- Superior level of construction quality and design flexibility.



The modular design and configuration of Carrier's 39M AERO Air Handlers allowed them to be easily disassembled on site, transported into an extremely tight equipment room and then reassembled.



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“With all the challenges this project had — physical space constraints, an extremely tight installation window and limited access — Carrier’s AERO™ units were the right product for the job.”

Josh Kahn
Vice President
Kahn Mechanical Contractors
Dallas, Texas

Project Synopsis

Built in 1961, First Baptist Church of Hamilton Park in Richardson, Texas was one of the first buildings in the area to have central air conditioning. Like so many churches and other buildings of that vintage, its original HVAC system wasn’t keeping up with the comfort demands of today. Filled with an impassioned congregation every Wednesday and Sunday, the 17,000 sq.ft. sanctuary required cooling year-round, while the rest of the 120,000 sq.ft. facility — classrooms, meeting rooms and offices — required heating or cooling at certain times of the year.

Since the facility is a place of worship and learning, low sound levels and high indoor air quality would be factors in the final selection of the air handling units. The innovative design and construction characteristics of the AERO air handler meet these requirements by delivering superior acoustics and standard features that include HEPA filters and UV-C germicidal lamps. Additionally, all of AERO air handler’s exposed interior surfaces are constructed using AgION® antimicrobial coating, further enhancing indoor air quality.

However, it was the unique, patented construction that would prove the determining factor in the selection of the AERO units. One option to install the equipment called for cutting a hole in the sanctuary roof, but was vetoed. Josh Kahn, Vice President of Kahn Mechanical Contractors explains, “When you see how little room we had to work in, we had to explore every option. It was really AERO air handler’s unique ability for a quick disassembly and reassembly that made achieving our changeover window possible.”

The design and operational features found within each AERO unit rival those found in many custom or semi-custom AHUs. This flexibility allows the contractor or engineer to specify the best solution that meets all the performance and comfort needs of each different application. Kahn continues, “When we researched other units, we didn’t find the same level of construction quality and design flexibility that we found with Carrier. These AERO units give us so much more bang for the buck.” Easy servicing was another reason for selection of the AERO units. Their unique structural frame allows easy and safe removal of all access panels. The appliance-quality finish, with no exposed edges, also contributes to safe handling for installers and service technicians.

The success of the project at First Baptist Church of Hamilton Park was the result of Kahn Mechanical Contractors fully understanding the goals and expectations and then working closely with Carrier to ensure that AERO units were designed, manufactured and delivered as expected. Kahn concludes, “This was a very demanding project from a variety of angles so every link in the production chain had to be intact. With all the challenges this project had — physical space constraints, an extremely tight installation window and limited access — Carrier’s AERO units were the right product for the job.”

The 39M air handler’s features, performance and delivery have since led Kahn Mechanical Contractors to use the product on other space-challenged projects.

Project Summary

Location: Richardson, Texas

Project Type: System Upgrade/
Retrofit

Building Age: Built in 1961

Building Type / Size: Church

HVAC Equipment: Two Carrier
39M AERO Central Station Air
Handling Units

Building Usage: Religious
services and related activities,
administrative offices, daycare,
classrooms

Unique Features: 39M’s ease
of disassembly/reassembly on-
site provided a time-saving and
efficient installation solution for
an existing limited-space
mechanical plant

Objectives: Redesign existing
system to provide simultaneous
cooling to the sanctuary and
heating to the classrooms

Design Considerations:
Original CHW piping fully
embedded in the facility.
Original two-pipe system
required four-pipe modification
for new AHUs. Very tight
changeover schedule.

Installation Date: 2005

Major Design Drivers: Low
sound, indoor air-quality, limited
equipment room space

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