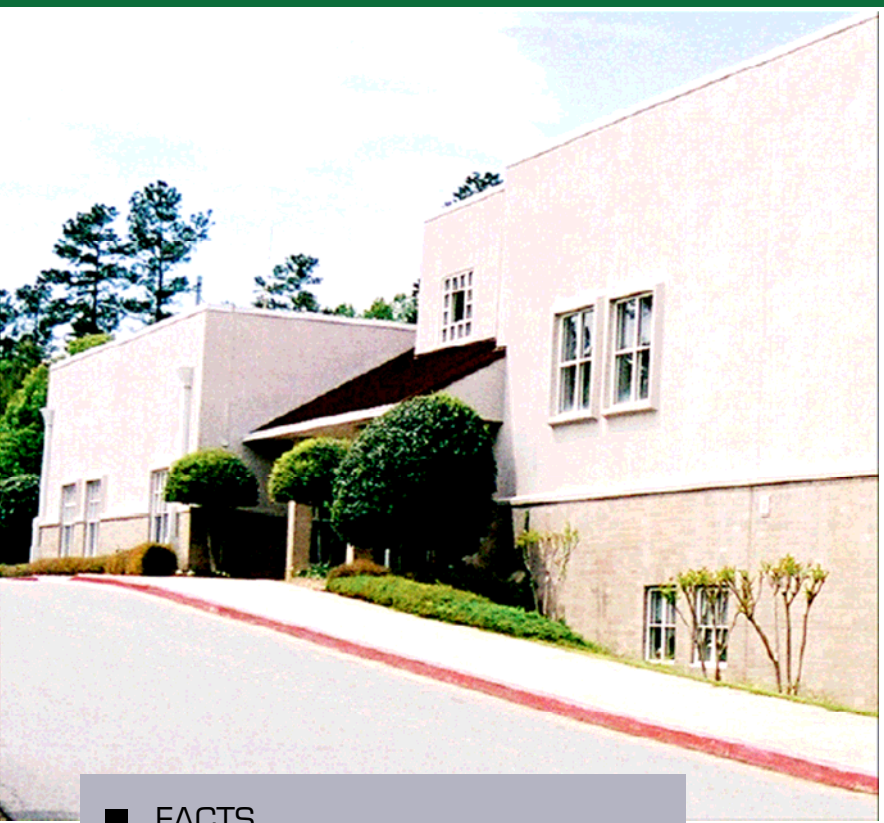
PROJECT REFERENCE

New Hybrid Cooling and Dehumidification System Delivers Comfort to Classrooms



This new technology gives schools a cost effective way to meet the ventilation code requirements, control space humidity, improve indoor air quality, and reduce energy costs.

FACTS

Customer:
Georgia Elementary School, USA

Need:
Clean and low-humidity air in all classrooms

Solution:
Natural gas-fired integrated active Desiccant Rooftop System developed by SEMCO

SEMCO INCORPORATED
A Fläkt Woods Company

“We have experienced excellent Indoor Air Quality at all times.”

Students and teachers in one section of a Georgia elementary school are breathing clean, low-humidity air in their classrooms, thanks to an innovative natural gas-fired hybrid cooling and de-humidification system developed by SEMCO.

The 25-ton Integrated Active Desiccant Rooftop (IADR) system, also known as the SEMCO Revolution system, was installed as a retrofit at an elementary school outside Atlanta. It replaced one of the larger air-handling units in an area of the school experiencing serious indoor air quality problems.

This 10,000-sq.-ft. area includes eight classrooms, four teacher rooms, two hallways, two restrooms, and a storage room. All were previously cooled by a 30-ton conventional packaged variable air volume (VAV) system. For years, school staff complained about humidity issues in the building. SEMCO provided a better solution.

Members of the school district’s maintenance staff and SEMCO laboratory personnel installed the Revolution system during a single weekend, using a custom curb adapter and the existing gas and electrical connections. The IADR is compact enough to be installed as a direct replacement for a conventional rooftop unit, re-using the same roof penetration and utility connections, ductwork, VAV boxes, and space sensors.

Each of the 19 zones in the study area was fitted with a variable volume/variable temperature (VVT) box. Each box contains a DDC box controller and airflow monitor that communicates with both the space thermostat and the main control logic board installed inside the IADR system mounted on the roof. Return air enters the IADR system by way of a ceiling plenum on each floor of the two-story school.

The Revolution is the first packaged rooftop unit that can maintain both temperature and humidity, independently, while delivering any outdoor air percentage desired and any sensible heat ratio (SHR) required by the space. It operates as a total conditioning system, handling all the outdoor air, space cooling and heating needs as well as controlling space humidity. It can also be applied as an effective dedicated (100%) outdoor air system.

After a full year of operation, school officials pronounce the IADR system a success:
“It’s working great,” says the school district’s HVAC Supervisor/Energy Manager. “We have experienced excellent IAQ and comfort conditions at all times. Most importantly, the teachers are very happy with the new system. It enables schools to provide a cost-effective way to meet the ventilation code requirements, control space humidity, and minimize operating costs.”

SEMCO
SEMCO is a unique indoor environment products manufacturer serving the key disciplines of air distribution, noise abatement, temperature, and humidity control in the commercial and industrial building markets. SEMCO was acquired by Fläkt Woods in 2007.

Fläkt Woods Group
Fläkt Woods is a global company providing solutions for ventilation and air treatment for buildings as well as fan solutions for Industry and Infrastructure applications.

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