MAKING THE GRADE WITH COMFORT IN THE CLASSROOM

Commercial Packaged Rooftop Heat Pump and Air Conditioners
Expect More From Trane:

- Reliable Performance
- Durable Systems
- Fresh Air that Supports Healthy Environments
- Quiet Operation
- Comfort Control in the Classroom
- High Efficiency = Real Annual Utility Budget Savings
- First-Rate Warranties

Designers are challenged more than ever today to rethink the heating, cooling and ventilation systems in schools for both new facilities and renovations.

Trane meets these challenges by helping create high-performance classrooms and sustainable school buildings that are fiscally and environmentally responsible — and significantly improve the quality and delivery of education.

ENERGY MANAGEMENT

In most U.S. school districts, utilities are the second largest budget item after personnel related items, according to the Department of Energy (DOE). In the U.S., this totals more than $6 billion spent on energy by schools nationwide.

Unfortunately, about 25 percent of the energy used in a typical school is wasted because of inefficient building systems and operations. This amounts to $1.5 billion annually in the U.S. – money that could be used to hire approximately 30,000 new teachers. Improving the efficiency of a heating, ventilation and air conditioning (HVAC) system is one of the easiest ways for schools to increase building energy efficiency, reduce costs and improve the learning environment.
ENERGY CONSERVATION AND CLASSROOM ACOUSTICS

Research has shown that noise and reverberation (the persistence of sound after the source itself stops) adversely affect normally developing young children more than they affect typical adults. It is difficult for a typical child below the age of 13 to hear what is being said in a classroom if there is substantial background noise, which can come from internal sources such as the HVAC system, computers, electrical appliances and the children themselves — or external sources such as highway and airport traffic.

The challenge is to design classrooms that meet children’s unique learning needs for sound (as well as listening, comfort and seating).

With the help of Trane’s commercial solutions, school systems across the U.S. are achieving these acoustical demands.

CREATING THE RIGHT LEARNING ENVIRONMENT

Because it is often the predominant noise source in a classroom, the HVAC system must be taken into consideration during the initial building design phase. The Acoustical Society of America (ASA) says excessive mechanical noise can be substantially reduced at little or no extra cost if the system is designed properly.

Using Trane’s Acoustics Program (TAP™), creating classrooms that meet the American National Standards Institute (ANSI) and ASA (ANSI/ASA12.60-2002) acoustical standards is easier and more cost-effective. This acoustical analysis software makes it easy to accurately predict and compare system sound levels by dynamically re-calculating as you explore different component options.

As a long-time partner and advisor to the education market, Trane’s HVAC products, controls, systems and services are designed to meet current and future demands of today’s school systems.

By the Numbers: Green Buildings

Trane Commercial Packaged Rooftop units can help schools create sustainable, high performing schools that meet the Leadership in Energy and Environmental Design (LEED) Green Building Rating System™ requirements.

5%  
Average increase in test scores for students who attend green schools.

30,000  
The number of teachers that could be hired with a 25% energy efficiency increase in school systems.

$1.5 billion  
25% of the energy wasted in a typical school due to inefficient building systems.

$6 billion  
The average amount U.S. schools spend on utilities annually with 75% efficiency.

FEATURES YOU CAN DEPEND ON WITH TRANE COMMERCIAL PACKAGED ROOFTOP UNITS

*Designed for classrooms, XL16c™ is the solution for increasing energy demands*

**VARIABLE-SPEED BLOWER MOTOR**
Variable Speed Blower with Trane’s exclusive Comfort-R feature, operates at lower, more efficient speeds than conventional motors.

**ULTRA-QUIET DUCTED FAN**
High efficiency motor and outdoor fan work flawlessly together for ultra-quiet performance.

**COMPOSITE VORTICA™ BLOWER**
Advanced system uses less energy to produce more airflow with minimal sound. Slides out for easy service.

**ALL-ALUMINUM SPINE FIN™ COIL**
Thousands of tiny aluminum fins provide a larger surface area, resulting in enhanced airflow and heat transfer. Less likely to clog or corrode than traditional copper/aluminum coil – even under the harshest conditions.

**DURABLE WEATHER-BEATER TOP**
Contoured and reinforced to shrug off the elements year after year.

**LOUVERS AND CORNER GUARDS**
Automotive-grade, UV-resistant composite components deliver added protection and safety.

**CLIMATUFF® TWO-STAGE COMPRESSOR**
Two stages of heating and cooling provide exceptional comfort, cost savings and quiet operation.

**STAINLESS STEEL HEAT EXCHANGERS AND BURNERS**
Featuring a new tubular design for reliable performance and peace of mind.

**APPLIANCE-GRADE FINISH**
All-steel cabinet with a baked-on, powder-painted coating for smooth, safe edges and years of protection.
BUILT-IN QUALITY
Trane’s commercial packaged units are designed with quality in mind. Our tried-and-true components minimize failures and downtime that can result in costly service calls.

DURABILITY
Our products aren’t just precision engineered – they’re built to last. We design our packaged units using only the highest quality, most durable materials.

FRESH AIR
Properly conditioned indoor air goes beyond comfort – it also encompasses the health and safety of the occupants who live, work and play in an environment.

PERFORMANCE
Trane’s commercial packaged units deliver exceptional energy efficiency and cooling capacity. Engineered for superior performance, the variable-speed indoor blower and Comfort-R™ airflow system provide a greater level of comfort. And features like the powerful-yet-quite Vortica™ blower, along with the durable all-aluminum Spine Fin™ outdoor coil, make it a smart investment for the long term.

RELIABILITY
We test products in our Seasonal Extreme Environmental Test (SEET) facility, exposing them to an array of torture tests before we put them into production – so you can feel confident they’ll provide consistent comfort for years to come.

QUIET OPERATION
One of the quietest units at every tonnage, with sound levels as low as 70 dB. The commercial packaged unit high efficiency motor and outdoor fan work together for an incredibly quiet performance thanks to its ultra-quiet, state-of-the-art ducted fan. For exceptionally quiet needs, an optional Acousti-Curb is also available.

SERVICE YOU CAN TRUST
Our commercial systems customers are supported by more than 7,600 of the best trained sales engineers and service technicians in the industry. Our commitment to partner with customers throughout the life of their building is backed up by 2,000 factory authorized service professionals to ensure that each customer’s Trane system achieves maximum operating and energy efficiency.

WARRANTIES
Your investment in a Trane packaged commercial unit is well protected with light commercial warranties and extended warranties on the compressor, coil and all functional parts inside your unit. Trane offers a standard 5 year warranty on the compressor heat exchanger and a standard 1 year warranty on functional parts. An optional extended warranty on parts and labor is also available.

Optional Features:
- Adapter Curb
- Outside Air Dampers
- Economizers (Downflow/Horizontal)
- 2” Filter Rack (1” or 2” filters available)
- Hinged Filter Door Accessory
- LP Kits
- Extreme Mounting Kits
- Low Ambient Kits
- Quick Start Kits (single phase only)
Creating Green Buildings

Green building design, construction and renovation methods offer a host of benefits including sustainable site development, water savings, energy efficiency, environmentally responsible materials, and optimal indoor environment quality.

Using an average of 33 percent less energy than conventionally designed schools, green schools not only pay lower utility bills than conventional buildings, but also have the potential to help lower market-wide energy costs by reducing demand, according to the U.S. Green Building Council.

Trane helps create these green buildings by designing environmentally responsible products, systems and services that work to save energy and meet increasing energy demands. Green building strategies also work to significantly reduce indoor environment-related illnesses. These illnesses are much more than a nuisance and typically result in sick days, lower teacher and staff productivity, lower student motivation, slower learning, and lower test scores.

A recent study for Washington State estimated a 5 percent increase in test scores for students who attend green schools. Additionally, a recent Turner Construction survey of green buildings found 70 percent of school districts with green schools reported reduced student absenteeism and improved student performance.

When many schools already face budget crises, how can they afford to implement green elements? Surprisingly, green building costs are not much higher than standard...
building costs and the extra expenses are usually offset by future energy savings.

HOWELL, NEW JERSEY

One example is Ramtown Road Elementary School in Howell, N.J. A high efficiency HVAC system was installed that was 60 percent more efficient than the state building codes require. The school received a $200,000 Clean Air Fund rebate for renewable energy, plus the projected energy savings over 20 years is expected to reach $1.25 million.

The lesson: Green construction is a not a budget-draining exercise with no measurable results. Teachers and students who walk the halls of today’s green schools perform at higher levels than the majority of their peers who teach and learn in sub par environments.

THE BOTTOM LINE ON SCHOOL ENERGY USE

With the U.S. student population expected to increase by an estimated 1.4 million annually, the U.S. General Accounting Office projects it will cost $73 billion to add new facilities and another $112 billion to bring existing K-12 public schools to proper standards. Now is the time for school board administrators to consider the benefits of a properly designed and maintained HVAC and control system, including improved student performance, classroom comfort, energy efficiency and facility life cycle costs.

As energy costs continue to rise, school administrators will be pressured to establish high performance or “sustainable” school buildings that incorporate energy conservation and environmentally sound principles in their design.

Fiscally and environmentally responsible Trane HVAC solutions are available to meet the growing needs of school districts dedicated to improving their learning environments for students and teachers.

What school administrators are saying about us:

“We’ve had increased attendance from children that frequently missed school due to asthma or other respiratory problems. It’s a better environment for people who spend most of their waking moments in this building. It’s the right thing to do.”

John Kallocay, Assistant Superintendent for Administrative Support Services, Hermitage Elementary School, Virginia Beach City Public Schools

“The air is cleaner and the environment is fresher. There is no doubt in my mind that the new controls and mechanical systems are saving us money.”

Dana McGrew, Shelby (Michigan) Public Schools Superintendent

“We were impressed with the team Trane assembled….We always felt a part of the team, giving us more control over the outcome. The level of detail delivered in the condensed time we had was amazing.”

Dave Overlin, Winfield (Colorado) School District Executive Director of Facilities