



# Precedent™ 17 Plus rooftop unit

*A solution for green schools*



# The textbook rooftop unit for K-12 schools

The facts are in: The creation of green schools offers proven benefits beyond the obvious environmental advantages. High performance schools cost less to operate. Upgrading systems for energy efficiency presents a prime opportunity to introduce new HVAC technologies that influence student and teacher health and productivity.

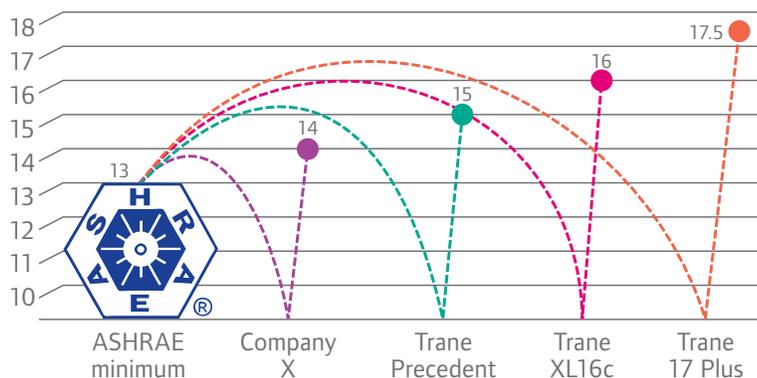
## Follow the new rules

A growing number of states are implementing policies for green schools and regulations for Indoor Air Quality (IAQ). At Trane, we did our homework and came up with the industry's most practical solution: The new Precedent™ 17 Plus packaged rooftop unit is the ideal choice for schools today.

## Energy efficiency: Precedent schools the competition

At 17.5 SEER, this ENERGY STAR® rated Precedent is one of the most energy-efficient packaged rooftop units in the industry. It is up to 17 percent more efficient than the competition, and exceeds federal minimum requirements by over 30 percent.

### SEER



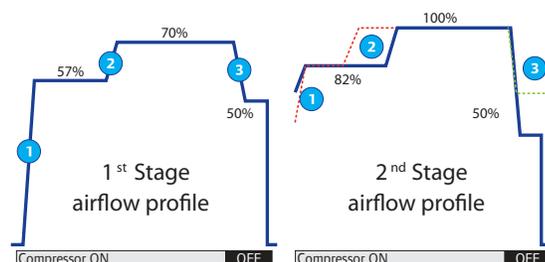
Precedent 17 Plus is one of the most energy-efficient rooftop units available. It exceeds ASHRAE minimum requirements by over 30 percent.

Of course, improved energy efficiency translates directly to reduced energy cost. Precedent 17 Plus gives school districts the opportunity to save money. By reducing monthly heating and cooling costs, Precedent 17 Plus provides a fast return on investment (ROI), and promises long-term savings that bring relief to financially-stressed operating budgets.

## Indoor Air Quality: Precedent cleans up in every category

Published studies link poor Indoor Air Quality (IAQ) to asthma and other illnesses.<sup>1</sup> Schools striving to provide a healthy learning environment for students can look to Precedent 17 Plus for advanced technologies that help manage many environmental health hazards—including dust, excessive moisture and chemical vapors.

The Precedent 17 Plus rooftop unit is available with an enhanced indoor fan cycle and variable capacity compressor capabilities. This includes a factory-installed and programmed Electronically Commutated Motor (ECM) that varies system supply airflow for superior humidity control, comfort, energy efficiency and sound levels at part load conditions. It also provides higher efficiency and significant cost savings during continuous fan operation.

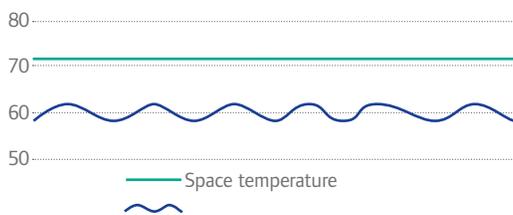


Precedent 17 Plus standard airflow and compressor profile



The variable capacity compressor in the Precedent 17 Plus rooftop unit provides accurate temperature and humidity control in the space. When the compressor unloads based on space demand, energy consumption is reduced and system efficiency increases.

In addition, Precedent 17 Plus features a new single zone variable air volume control cycle. This feature provides accurate temperature and humidity control by adjusting both fan and compressor stages to maintain comfort within the space.



Single zone variable air volume control cycle maintains consistent comfort

A range of available filtration options—up to MERV 13 high-efficiency filters—can be selected to reduce microscopic airborne contaminants, and to meet the requirements for LEED® EQ Credit 5.

### The affordable solution

Today the financial benefits of creating a sustainable school are about 20 times greater than the cost of going green.<sup>2</sup> Green schools are now more affordable due to the introduction of many practical innovations like Precedent 17 Plus. This exclusive rooftop unit offers an affordable price point that is easy on the capital budget, mounts on a standard roof curb, and reduces maintenance and utility costs during operation.

1, 2. Gregory Kats, Greening America's Schools, Costs and Benefits, Capital E Report: October 2006, <http://www.cap-e.com> (Accessed Feb. 2011).



- A Optional high efficiency MERV 13 filters are available to control airborne contaminants, including bio-aerosols, and to meet the requirements of LEED EQ Credit 5
- B Reduce noise distraction: Multiple fan speeds result in quieter operation
- C Optional enhanced dehumidification control alleviates humidity in problem areas
- D Foil-faced insulation allows for easy cleaning
- E Compatible with BACnet™ controls (open protocol)
- F Standard phase monitors enhance compressor reliability
- G Service calls are completed faster when Precedent 17 Plus is installed with optional ReliaTel™ controls
- H Control temperature and humidity more accurately and economically: Single zone variable air volume (VAV) bases fan and compressor speeds on internal space load requirements
- I Non-corrosive, double-sloped drain pan simplifies maintenance and reduces the potential for microbial growth
- J Demand control ventilation optimizes outdoor air needs based on space CO<sub>2</sub> levels



## Trane Precedent 17 Plus for schools

Conditions inside school buildings affect learning. Temperature, acoustics and air quality have been linked to students' and teachers' ability to perform.<sup>3</sup> Precedent™ 17 Plus controls temperature, filtration, humidity and HVAC-generated sound levels to support better academic outcomes.

### Available in 3, 4 and 5 tons

- Single zone variable air volume (VAV) matches compressor capacity and fan speed to classroom load requirements
- Optional enhanced dehumidification control alleviates humidity in problem areas
- Multiple fan speeds result in quieter part-load operation
- Non-corrosive, double-sloped drain pan simplifies maintenance and reduces the potential for microbial growth
- Foil-faced insulation allows for easy cleaning
- Optional high efficiency MERV 13 filters
- Standard phase monitors enhance compressor reliability
- Compatible with BACnet™ controls (open protocol)
- Demand control ventilation (CO<sub>2</sub>)

### Maintain peak performance

Managing indoor environmental quality is an ongoing responsibility for schools. Some states' policies require a formal maintenance plan. A proactive approach to HVAC systems

maintenance, performed by Trane professional service technicians, helps to ensure your equipment continues to deliver clean, fresh and comfortable air throughout its life.

Trane Building Services offers a continuum of service options to meet a variety of needs and price points over the lifetime of your school building.

### Trane knows schools

Trane involvement with professional and environmental organizations enables us to serve as a valuable information resource for K-12 school districts.

- National sponsor of U.S. Green Building Council's LEED® for Schools
- Platinum sponsor of USGBC's Greenbuild Conference
- Sponsor of the Acoustical Society of America's National Standard for acoustical performance in schools
- Member of the Association for the Advancement for Sustainability in Higher Education
- Active participant on technical advisory groups, including the ASHRAE committee that creates indoor air quality standards

3. Mark Snyder, Do School Facilities Affect Academic Outcomes? (Washington, D.C.: The National Clearinghouse for Educational Facilities, Nov. 2002.)

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LEED® is a registered trademark of the U.S. Green Building Council.

ENERGY STAR® is a registered trademark of the U.S. Environmental Protection



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