



## Atlantic City Schools Win Big With Scholar II™ Heat Pumps

### System Comes In Under Budget Less Than \$14 Per Square Foot

ATLANTIC CITY, NJ—Even in this gambling mecca, new school construction coming in *under* budget is against the odds.

But the Atlantic City School District was able to accomplish this feat with two new state-of-the-art schools. Was it luck? Or was it Marvair's Scholar II heat pumps?

According to construction manager Bill Francesconi of Joseph Jingoli and Sons Construction in Lawrenceville, New Jersey, "the Atlantic City School District had been trying to build its New York Avenue and Sovereign Avenue schools for several years, but the mechanical budget set at \$15 per square foot in 1993 when the projects' planning began kept stalling the projects." The heating system was a key element in the overall cost of the schools.

Francesconi worked with an architect and engineer for each school, reviewing their concept estimates on different types of systems. Finally, Francesconi met with Paul Agey of A&W Technical Sales, in search of a solution to the budget problem. They hit a winning combination of design, function, and

costs with the Scholar II™ heat pump from Marvair. "The Scholar II heat pump was the answer," said Agey. "It fit the budget and was a viable alternative to a water source heat pump originally specified."

Francesconi added, "The final installed cost of the Scholar II units came to less than \$14.00 per square foot in a market that typically runs \$24 to \$26 per square foot."



*The Marvair Scholar II heat pump, which allowed the school system to keep construction costs under \$14 per square foot, also serves as a showcase for student art.*

*Herman Laing is the Atlantic City School Principal.*



## A Winning Edge

Much of the initial cost savings can be attributed to the Scholar II unit's stand-alone design, which eliminates the need for a costly heating plant/mechanical room and chiller, as well as lots of piping and ductwork. Francesconi is quick to point out that "the Scholar II is not your ordinary, run-of-the-mill heat pump. "The condenser, evaporator, and all energy efficient components are a complete self-contained package," he said. This facilitates quick, easy installation, and the Scholar II's small footprint frees up square footage that can be used for classrooms instead.

Since the Scholar II units are independently operated, ongoing maintenance savings are realized as well. "Regular maintenance of a Scholar II unit is simple," Francesconi said. "It needs only periodic air filter changes easily accessed from the front of the unit – and can be conducted by the school's custodian." By contrast, large water cooling/heating systems require more costly, highly trained maintenance technicians – even for routine maintenance.

**“it’s nice not having half of the building too cold or too hot. Each teacher has some control over the temperature in his/her classroom.”**

Another benefit is the room-to-room control. "If a unit were to have problems, only that classroom would be without air or heat, not the whole school," said Francesconi. Barry Caldwell, Assistant Superintendent in charge of Operations for the Atlantic City Schools added that "it's nice not having half of the building too cold or too hot. Each teacher has some control over the temperature in his/her classroom."



*The Scholar II is available in a 2-ton to 5-ton capacity and has the footprint about the size of a student's desk.*



*The Scholar II improves the learning environment with whisper quiet operation, low humidity, and maximum cfm air delivery.*

## Environment and Air Quality Win Out

In addition to meeting budgetary requirements, Scholar II heat pumps also met ASHRAE's guidelines

for outside air ventilation, and provided both Atlantic City schools a total environmentally controlled building. The GreenWheel® total energy recovery ventilator (ERV), a Marvair exclusive, was key in meeting these guidelines. The Green Wheel ERV removes heat and humidity from

incoming summer air before it enters the classroom. This reduces the air conditioning load by up to one ton of cooling per classroom in the New Jersey summer climate. During the winter, heat is added to the incoming air stream, reducing the heating load. The results are a smaller, more efficient system, lower operating costs, and a comfortable classroom.

The GreenWheel ERV's integral powered exhaust of the ventilation

air met New Jersey's building code requirements for an exhaust fan and was again more cost effective.

Other systems require a separate exhaust fan, an additional hole in the exterior wall, and control of the fan to operate simultaneously with the intake fan – all at additional costs.

Because of the proximity to the ocean, humidity control to prevent toxic mold growth in the classroom was also a high priority. The Scholar II heat pump's optional

factory installed hot gas reheat system was the answer. It automatically dehumidifies the classroom at a minimum of energy cost – especially important in areas with high electric costs.

Low cost construction techniques were utilized to keep the unit's operating noise to a minimum and conducive to a classroom setting. The Scholar II heat pump was installed inside a small closet in many of the classrooms, achieving sound levels as low as 37 dBA with the unit running.

Caldwell summed it up: "The Scholar II heat pump was a new concept for our school district, but one that worked well from a

budgetary standpoint and continues to work well providing quality heating and cooling."

For more information on the Scholar II heat pump and other Marvair heating and cooling options for schools, visit

[www.marvair.com](http://www.marvair.com),  
email [sales@marvair.com](mailto:sales@marvair.com)  
or contact **Bob Benson**  
at 1-800-841-7854.



*Dorothy Bullock-Lopez, Atlantic City School Principal, appreciates the room-to-room comfort control of the Marvair system—as do her students.*



*The Marvair Scholar II heat pump, which allowed the school system to keep construction costs under \$14 per square foot, also serves as a showcase for student art.*

*Herman Laing, Atlantic City School Principal, appreciates the whisper quiet operation and the room-to-room comfort control of the Marvair system.*

# Marvair Scholar II

Heat Pumps and Air Conditioners.

## General Description

The Scholar II heat pumps and air conditioners are designed to provide comfortable, quiet, and efficient heating and cooling for school classrooms. The Scholar II unit is installed inside the classroom against an exterior wall. The vandal-resistant outdoor air box goes through the exterior wall. This unique design makes it ideal for both new construction and renovation projects. The Scholar II unit whispers cooling, heating, and ventilation comfort throughout the classroom with efficiencies that excel in comfort system design. The Scholar II unit can provide ventilation to meet ASHRAE 62-1999 standards.

The cabinet is constructed of corrosion resistant galvanized steel with a mark-and-scratch resistant polyester finish. The standard cabinet color is silver grey (optional colors are available for special request), with the supply and return grilles in clear brushed aluminum.

The Scholar II unit occupies little floor space and can be controlled by an internal thermostat, a standard room thermostat, or interfaced with an energy management system. The exterior louver collar assembly blends in an architecturally pleasing manner, conforming with the building exterior in color and form.



Scholar II heat pumps and air conditioners are available with voltage rating for 230/208V - 1 $\phi$  or 3 $\phi$ , or 460V - 3 $\phi$  electric supply.

The Scholar II is available as a unit ventilator. The SVI 1000 model has air delivery capacities of 800 to 1,200 cfm, and the SVI 2000 model has air delivery capacities of 1,400 to 2,000 cfm. These units can be equipped with electric heat, steam or hot water heating options, and chilled water or direct expansion coil cooling option

## Benefits

Quiet Operation: This is the result of using a thick, acoustical thermal insulation applied internally to the panels of the Scholar II unit. A quiet, indoor air mover further reduces the sound level. Finally, extra large air supply outlet and return reduce the sound of air motion in the classroom.

Fresh Air Ventilation: The Scholar II unit offers a number of configurations to address fresh air requirements.

- Manual (std) or Motorized Two-Position (opt) Damper with Pressure Relief. Up to 40% of the rated air flow, with a maximum of 450 cfm, can be outside air through the use of a manual or motorized damper.
- GreenWheel ERV (optional). The Marvair GreenWheel ERV is a total energy recovery wheel that can recover both sensible and latent heat with efficiencies of up to 75%. By transferring heat from the classroom air to the incoming air, heating and cooling costs can be kept to a minimum.
- Power Vent with Motorized Damper (optional). Up to 40% of classroom air, with a maximum of 450 cfm, can be power ventilated to assure fresh air circulation with motorized damper.

Humidity Control: Reheat dehumidification (optional) permits dehumidification of fresh air and room air without over cooling the classroom. When cooling is satisfied and the humidity controller calls for dehumidification, the heating coil is energized to add heat to the air supplied to the classroom. For optimal humidity control, reheat dehumidification should be used with the GreenWheel ERV.

Low Operating Costs: This is a highly efficient system. The Scholar II unit offers the option of supplemental electric resistance, steam, or hot water heat, thus allowing the choice of the lowest-cost heat energy source.

Ease of Service: This is a major feature of the Scholar II unit design, with full access to parts, air filters, and controls from the room side with quick access through the front panels.

## Get the Whole Story:

[www.marvair.com](http://www.marvair.com),

[sales@marvair.com](mailto:sales@marvair.com)

or contact **Bob Benson**

at **1-800-841-7854**.