

# ENDEAVOR ELEMENTARY SCHOOL

## WEST CHESTER, OHIO

### KEY PARAMETERS

- Type of Facility – New Construction
- Function – K-12 Education
- Area – 1-story elementary school
- Project Completed – 2007

**Challenge:** Reduce ventilation. As the school neared completion just prior to the 2007/2008 school year, Endeavor was looking at the possibility of using a heat recovery ventilation system in order to save money on operating costs. It was going to be costly to condition outside air at the 15 cfm per person minimum requirement. Dynamic Air Quality Solutions was able to calculate lower cfm requirements using its AirQ™ program. The AirQ program utilizes the ASHRAE Standard 62 IAQ Procedure and the Ventilation Rate Procedure, a prescriptive method of determining outside air requirements by concentrating on controlling the contaminants of concern within a space.



**Solution:** The school used Dynamic 1" V-Bank air cleaners, factory-installed (Lexington, KY) in Trane M-Series Climate Changers.

**Results:** The result was a reduction in the outside air requirement of almost 60% which translated to roughly \$30,000 on the HVAC equipment capital investment.

The air was tested a month after the school opened to confirm air quality. An Aircuity Optima™ monitor was used to measure indoor particulate counts in several size ranges, CO, humidity and total VOCs. Indoor data was then compared to outdoor conditions where tests confirmed that indoor air was as clean or cleaner than it would have been, had outside air been brought in at 15 cfm per person. The indoor air samples scored 100 out of 100 on the Aircuity Air Cleanliness Index.

Months after the school had opened, the director of buildings and grounds for the school district concluded that the air inside the school was excellent and that the school had seen reduced operating costs, as planned. The same equipment was recommended for two other school projects in the district.

### TEAM

- Owner – Lakota School District
- Architects – Fanning Howey
- Engineers – Fanning Howey
- Construction Manager – Turner Construction
- In-house Facility Manager – Bob Fischer, Director of Building & Grounds

### MECHANICAL SYSTEMS

- HVAC – Trane
- Ventilation – Trane
- BAS – Trane Tracer ES™

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