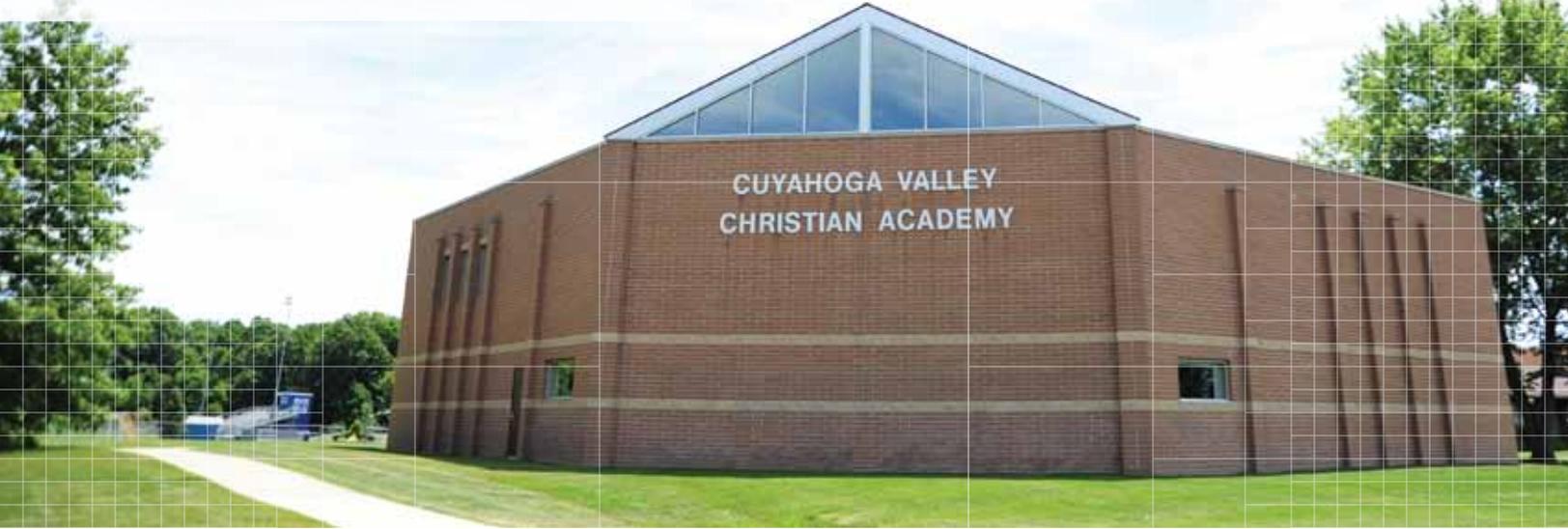


# Case Study

CUYAHOGA VALLEY CHRISTIAN ACADEMY (CVCA)  
CUYAHOGA FALLS, OHIO



## Making The Grade With Improved Air Quality And Energy-Saving Retrofits

**L**ike many school buildings constructed forty years ago and expanded over time, the Cuyahoga Valley Christian Academy's building was an underachiever. A comprehensive site analysis by WTI, a subsidiary of Tremco Incorporated, identified multiple areas for improvement, including:

- Indoor air quality
- Moisture intrusion
- Air infiltration
- Energy consumption

With an eye on a healthy learning environment and energy improvements, WTI was engaged to improve the building's performance by addressing the building envelope, lighting and HVAC system deficiencies.

### Stopping Air Leaks Improves Comfort, Eliminates Moisture, Saves Energy

Significant air infiltration due to the building's age, original construction and three additions using various materials was identified and remediated throughout the building by Canam, a subsidiary of Tremco Roofing. The junction between the roof deck and the walls was the primary leak area, with additional leaks at doors, windows, the gym elevation and supplemental room heaters. Weather-stripping and sealing these areas alone resulted in a 17% reduction of air leakage and corresponding cost savings as well as significantly improving the comfort of all occupants. Harmful moisture migration, a threat to the structural integrity of the building and to occupant health, was also addressed by this remediation. Tremco's Zerodraft products were used to seal all gaps.



Building Life. Managed.®



## Taking HVAC Control For Improved CO<sub>2</sub> Levels And Energy Savings

With 50 separately controlled room furnaces and insufficient ventilation systems, effectively managing the facility's HVAC system and air quality was not possible. The WTI solution included installing unit controllers for all existing HVAC systems and equipment, then linking them all to a user-friendly control panel that integrates HVAC and lighting controls. Fresh air dampers with related controls were also installed to facilitate demand-controlled ventilation, in addition to CO<sub>2</sub> sensors. The result? A 90% reduction in CO<sub>2</sub> levels, improved learning environment and energy savings.



## Let There Be Light, And Savings Too



“Our teachers and students have given us many positive comments on the lighting and are very pleased with the look and operation. Also, with more efficient lighting, sensors and the simple fact that we don't have lights that stay on when people leave them on, we will save money.

We are tracking dollar cost and kilowatt hours month by month to measure those savings.”

– Kevin Gross, CVCA Facilities Manager

The lighting improvements alone are estimated to save \$22,000 a year. These upgrades include retrofits of existing lamps and ballasts, the addition of occupancy sensors, new fixtures and dual switching in all classrooms, as well as occupancy sensors in the gymnasium. In the auditorium, old fixtures were replaced with new fluorescent dimmable fixtures, and dimming equipment software was updated.

## Understanding Schools

“Our experience with WTI was very positive,” said Jim Gaul, chief financial officer. “Not only was the work performed in a professional manner, but the folks were very good to deal with. The WTI team went out of their way not to interrupt or disrupt any events, even working evenings and right up to Christmas and around the holidays. We appreciated them working above and beyond.”



**To learn more about WTI's integrated retrofit capabilities, call 1-800-892-1872.**

