



*K-12 students at East Woods Elementary consistently rank high in Ohio's top academic percentile; a distinction the school district wants to retain through improving learning environments.*

## CASE STUDY

### K-12 Education

#### Name

East Woods Elementary School

#### Location

Hudson, OH, USA

#### Facility size

46,000 ft<sup>2</sup> (1962 building)

#### Issue

Need for energy-saving comfort solutions to support a productive learning environment

#### Solution

(1) 112-ton Daikin Trailblazer<sup>®</sup> air-cooled chiller  
(35) Daikin unit ventilators (UVs) with MicroTech<sup>®</sup> II controls  
Ancillary equipment

## Daikin Delivers Comfortable and Energy-saving Learning Environment

### Issue

Students flourish in comfortable learning atmospheres without distraction. Comprehensive HVAC solutions provided by Daikin created such an environment at Hudson City Schools' East Woods Elementary. The progressive, energy-aware northwest-Ohio school district serves 4,600 K-12 students and consistently ranks in top academic percentiles. Hudson City Schools sought to provide an even more productive learning environment by adding air conditioning to the original section of East Woods, built in 1962, across 35 classrooms in a two-story building.

### Solution

In 2014, Daikin conducted a technical evaluation of East Woods. "With the help of the Daikin engineering and support team, we investigated the conditions and equipment to determine we could replace the existing unit ventilators (UV) with new Daikin equipment and install a chilled water system to provide the cooling we needed," said Chuck Schilling, supervisor of facility services at Hudson City Schools.

"We were awarded the project based on their needs and our ability to provide 'best value' under a federal cooperative purchasing contract with Hudson City Schools," said Eric Swain, C.E.M., client solutions manager for Daikin in Cleveland, noting Daikin is a trusted partner and has served the school district with HVAC solutions for more than two decades.

In summer 2015, phase one of the mechanical retrofit began with a complete two-pipe changeover. Daikin provided design and installation of the primary and secondary piping system supported by a new hydraulic air/dirt separator. Daikin also supplied five inline pumps with variable frequency drives to distribute water to each UV installed in the 35 classrooms during phase two.

Phase two began in February 2016 and installations of the Daikin Trailblazer air-cooled chiller, UVs, and ancillary equipment were made in summer 2016. "The Daikin face-and-bypass UVs accommodate fluctuations in occupancy levels and environmental conditions to bring consistent and precise humidity control," said Bob Ambrose, P.E., C.E.M., regional business development manager.

"Additionally, the chiller provides industry-leading efficiency with excellent part-load performance," he notes.

Daikin's turnkey solution also included replacing the facility's boilers with two new condensing-style boilers.

Under Daikin's guidance, a custom building automation system (BAS) was installed to manage the energy and comfort output of the new chiller. To meet project deadlines, Daikin coordinated with many other trades and contractors to overcome unexpected infrastructure issues.



*Daikin Trailblazer air-cooled chiller and face/bypass unit ventilator.*



"When expectations are high and budgets are tight, you need a business partner who can provide practical solutions that leverage existing assets. The Daikin team was receptive to our ideas and constraints. They engineered a solution that fit our needs and goals for comfort, energy efficiency, and operational efficiency under extremely tight timelines," said Derek Cluse, business manager at Hudson City Schools.

"Because of the fast-track project schedule, Hudson City Schools' staff and our Service Group worked around the clock to meet the tight deadline," Swain said. The project finished on August 15, 2016, and in time to start the East Woods 2016/2017 school year.

## Outcome

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The Daikin solution provided a long-term upgrade to HVAC equipment and added air conditioning to East Woods Elementary, giving students and teachers in 35 classrooms improved indoor air comfort during the critical summer and fall seasons in the muggy Ohio climate. "With our contemporary methods, we've provided East Woods Elementary with the

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Derek Cluse  
Business Manager, Hudson City Schools

ability to easily and economically switch from heating to cooling within four hours when they need to do so," Ambrose said.

With little or no distractions from open windows or electric fans that were once necessary, students who attend East Woods Elementary are benefitting daily from the improved comfort and more productive learning environment.

"We are pleased with the end result and look forward to working with Daikin on future projects," Cluse concluded.