



# Flat-oval duct helps give Canadian school's air quality an 'A'

If school comfort could be graded, then the classrooms at K.B. Woodward Elementary school in Surrey, British Columbia's school district would receive an "A" for improved indoor air quality.

New vertical unit ventilator systems installed in the classrooms with flat-oval ducted distribution systems provide heating and cooling in the 60-year-old school.

Each classroom has its own dedicated vertical unit ventilator that can provide up to 100 percent outdoor air directly into the classroom. The units deliver constant air quality, occupant comfort and humidity control. The filtration efficiency exceeds a minimum efficiency reporting value of eight as recommended by American Society of Heating, Refrigeration and Air-Conditioning Engineers standard 52.2 and in keeping with the school board's desire for improved air quality.

Each classroom operates independently using demand-controlled ventilation. This type of control system uses carbon dioxide sensors. It is a combination of two technologies: CO2 sensors that monitor levels in



Installed flat-oval ductwork is shown in one of the school's classrooms.

the air inside the classroom, and a unit ventilator that uses data from the sensors to regulate the amount

The 1-inch-thick material created some challenges for Crosstown Metal Industries Ltd., said Pat Barlee, the project's manager. Barlee said that he has done several schools using the K-Flex insulation attached inside the flat-oval duct and has come up with a creative way of attaching the insulation.

“Also in these renovations of older schools with low headroom, being able to use flat-oval duct allows for the finished installation to blend in with the ceiling area,” he said.

*This article and its images were supplied by Ecco Manufacturing of British Columbia.*



A close-up of the K-Flex elastomeric installation inside the duct.

of ventilation air admitted. The carbon dioxide sensors continually monitor the air in the classroom and quickly adjust the fresh air to ensure adequate air quality.

In addition, the engineer required that the classroom noise level be kept low as not to interfere with the students' hearing. He called

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for K-Flex closed-cell gray insulation. This non-fiber liner resists mold growth and is Greenguard Institute certified.