

CO₂ In Gyms Saves Big Buck For The Coquitlam School District



Background: The Coquitlam School District has been able to save \$10,000 to \$15,000 in annual energy costs for each of its schools by installing CO₂ based ventilation control in its Gymnasiums and auditoriums. The school district is nestled in the foothills of the Rocky Mountains just outside of Vancouver BC. Besides being blessed with a mild maritime climate (5400 heating degree days, 59 cooling degree-days), energy costs are three to five times less than most areas in the US (\$0.03 kWh for electricity and \$0.08/therm for natural gas). Despite the low cost of energy and mild climate, the school has seen roughly a 2-year payback (50% return on investment) on it’s CO₂ upgrade activity.

Issue: Typically the ventilation systems for gyms and auditoriums are designed to provide enough ventilation for full occupancy. In the case of Coquitlam, the gyms were only fully occupied (300 people) during weekly assemblies. Otherwise the occupancy of the gym average 30 people during typical gym classes. Most of the time gyms are highly over-ventilated as is the case for most schools.

Solution: The district first initiated a pilot project where one school gym was outfitted with a CO₂ sensor. The ventilation rate of the gym was set for 30 people, however when assemblies occurred, the resulting rise in CO₂ levels activated the ventilation system to ventilate at it’s maximum ventilation capacity of 300 people. Since that first project the district has now installed CO₂ control in 18 schools and plans to install this control strategy in 24 more schools. They are also now evaluating this approach for classroom ventilation as well. According to John McKay, Manager of Resource Conservation, “it (CO₂ control) meets the requirements for our indoor air quality program as well as reducing operating energy costs... so if we can save \$10,000 to \$15,000 per year per school in ventilation and make every body comfortable and happy, that’s exactly where we want to go.”



[Click here to download the Quicktime plug-in to view the video.](#)



[Click here to see a video of John McKay from the Coquitlam School District talk about his success with CO₂ ventilation control. \(3min\)](#)



[Click here to see the datasheet on the TR9220 CO₂ & Temperature monitor used by the Coquitlam School District. \(359KB: PDF\)](#)



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