

O X Y G E N 8

# VENTILATION IN SCHOOLS

An essential component for keeping students and teachers safe, healthy and equipped to learn.



Through the process of exchanging stale indoor air with outdoor fresh air, VOCs, CO<sub>2</sub> and viruses are exhausted from the space. Many North American schools (K-12 and Post-Secondary) have inefficient ventilation systems, or no ventilation at all. The absence of ventilation in these buildings can lead to increased virus transmission and lowered cognitive function for both students and faculty.



**Schools ventilation systems can have a large impact on both students and staff.** With older systems, and in some cases with open windows as the solution for fresh air, building occupants are spending extended periods of time in spaces that could be harmful to their health and wellbeing.

Limited budgets and expensive solutions have been contributing factors to the retention of outdated and inefficient systems. Until recently, there have been limited practical solutions available in the market, which has traditionally favored centralized rooftop units.

Without proper ventilation, students and faculty will continue to get sick, and with excess levels of CO<sub>2</sub> in the air, cognitive performance will continue to decline.

**Did You Know** According to ASHRAE 62.1 the minimum ventilation rates for a 30 x 30 x 9 ft. classroom with 30 students is 408 cfm, which equates to 3 air changes per hour (ACH). The Harvard T.H. Chan School of Public Health identifies 6 ACH per hour as the ideal number, and 5 ACH as the minimum target .



# Make the Invisible Visible with IAQ Monitoring



IAQ Monitoring ensures schools can maintain an indoor environment that keeps students, teachers and staff healthy, comfortable and helps them succeed.



## Boost Cognitive Performance for Students and Teachers

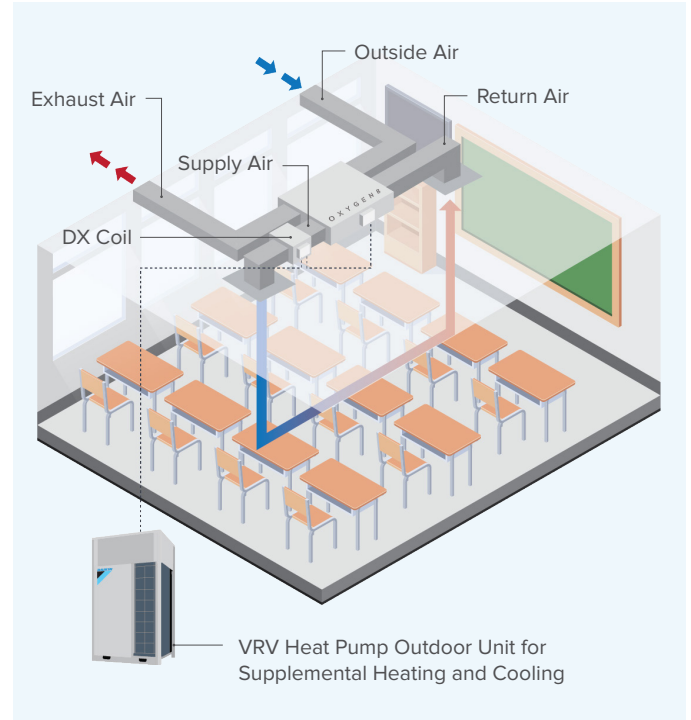
Workers' cognitive scores double in a cleaner, better ventilated indoor environment. Elevated levels of CO2 in classrooms are proven to have harmful effects on students' bodies and thinking.

## Improve Comfort in the Building

IAQ monitoring can measure conditions including airflow and air changes per hour, humidity, and temperature, which are factors that determine how we feel and perform. VRF Integration allows supplemental heating and cooling to be added to the space.

## System Integration

Riptide's cloud-based interface integrates with both Daikin VRF and Oxygen8 Units allowing school facilitators to monitor data in real time.



## Oxygen8 Solutions

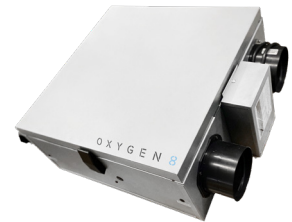
### Serena S500

#### Single Classroom

36" x 36" x 16.125"

350 – 500 cfm

Features PSC Fans, Wall Switch, Basic Controls



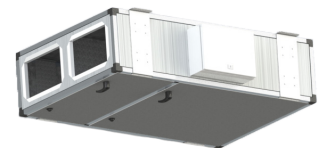
### Nova A16

#### Single Classroom

60" x 40" x 16"

400 – 775 cfm

Features Cross-flow Enthalpy Core, ECM Fans, Factory Mounted Controls & BMS Integration



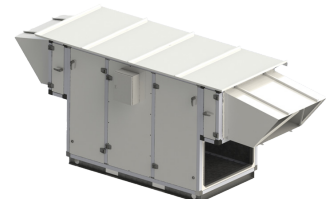
### Nova C70

#### Multiple Classrooms and Common Areas

70" x 42.5" x 20"

400 – 8100 cfm

Features Cross-flow Enthalpy Core, ECM Fans, Factory Mounted Controls & BMS Integration



Oxygen8 Nova A16 ceiling mounted ERV

**New technology is available.** Using decentralized ventilation, each energy recovery unit delivers fresh, filtered outside air directly to the classroom, while stale air is exhausted. Decentralized ventilation eliminates the need for vertical duct chases, rooftop units and bulky equipment. Low-profile ERVs can be floor, wall or ceiling mounted to fit into drop ceilings and mechanical rooms with limited space.

ERV cores have latent recovery to help maintain relative humidity between 40-60% in the cold, dry winter months. The polymer membrane cross-flow core design means there is no possibility of virus cross-over in the space.