HVAC – Enhanced Ventilation in Schools

J.L.Richards
ENGINEERS · ARCHITECTS · PLANNERS

JLR delivers **energy-efficient solutions** that **enhance** air quality and protect the wellbeing of **building occupants** while **maintaining a comfortable** indoor environment.

JLR completes over 50 projects per year for nine district school boards across Ontario. We understand schools and their needs. We also understand the stresses on the facilities management teams to operate schools with modest budgets and still provide a safe and healthy environment for our children to learn and grow.

JLR has extensive experience providing solutions to improve overall air quality. We design and engineer pragmatic, cost-effective solutions that consider the client's requirements in durability, reliability, maintainability, and ease of operations.

JLR's approach to improving air quality is threefold:

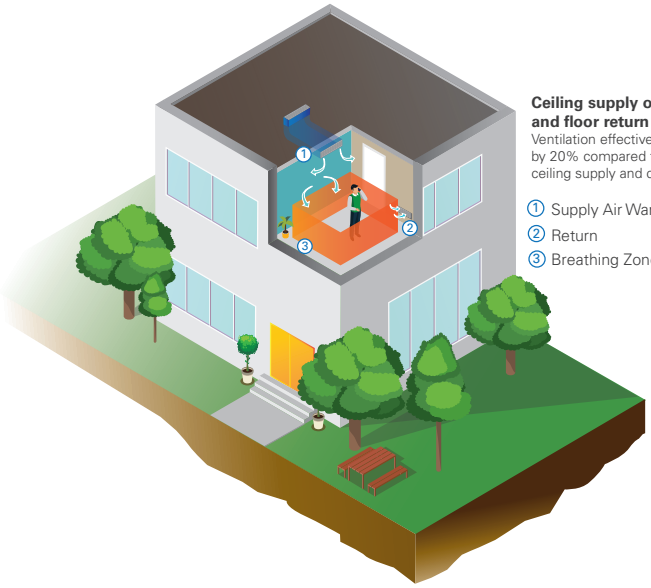
1. Increase outdoor air ventilation rates.
2. Improve the air distribution in the occupied space (better ventilation effectiveness).
3. Improve filtration.

Schools

JLR's experienced multidisciplinary team goes beyond mechanical systems and can include the design of behavioural changes such as improved handwashing stations, signage, and occupant traffic patterns.

Our solutions go beyond the immediate and pressing need to prevent the transmission of respiratory illnesses. We aim to improve indoor air quality. Our systems continue to improve productivity and academic results, while reducing absenteeism.

JLR has implemented many projects during the school year while facilities remained open. Our multidisciplinary team understands the critical importance of maintaining school function. JLR's methodology includes close communication, careful phasing, and clear designation of travel and work zones to maximize the level of safety and minimize disruptions for students, teachers, and staff.



Ceiling supply of warm air and floor return
Ventilation effectiveness improves by 20% compared to conventional ceiling supply and ceiling return

① Supply Air Warm
② Return
③ Breathing Zone – Radius 6'

Optimized Systems and Solutions

Our designs are pragmatic and durable. We can provide effective solutions that reduce operating costs, are simple to maintain, and save energy. For instance, the addition of heat recovery devices as part of our solutions to provide more outside air for a client's facility, resulted in lower operational costs and an improvement in the air quality.

At JLR, we look for the most appropriate energy optimization and sustainable options for the application being considered, adding value and balance against longterm operational costs against capital expenditures. Following a detailed evaluation process, our engineers summarize the analysis results and estimated lifecycle costs and provide an overall recommendation for adopting viable, sustainable solutions.

Our focus is always on robust systems and solutions that actually work. We also pursue demonstrable financial payback in annual operation–these are the interventions with the most measurable impact from both an economic and an environmental perspective. Many of these can provide payback within three years.

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Architecture
Civil Engineering
Electrical Engineering
Energy Systems Engineering
Environmental Engineering
Mechanical Engineering
Planning
Project Management
Structural Engineering

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