

CASE STUDY

Modernizing Aging School Infrastructure with Retrofits and BMS Systems

How GDI Ainsworth improved comfort, air quality, and energy visibility across K–12 schools in the Greater Toronto Area.



Project Details

Location

Greater Toronto Area, Canada

Number of Buildings

500+ schools across multiple school boards

System Implemented

Building Management Systems (BMS), HVAC retrofits, CO₂ monitoring, Delta Controls PAS security integration, and energy dashboards via enteliWEB

Project Goal

Improve indoor comfort, air quality, energy efficiency, and safety across K–12 learning environments without disrupting school operations

Project Duration

Design completed prior to summer break; installations executed during July–August school closures

Impact at a Glance

- ✓ Completed BMS retrofits and system integrations across 500+ schools
- ✓ Upgraded aging systems, including some 20-year-old infrastructure, without disrupting students or faculty
- ✓ Improved classroom comfort and air quality through enhanced HVAC control and CO₂ monitoring
- ✓ Increased energy awareness and performance visibility through real-time dashboards
- ✓ Enhanced school safety through integrated security and lockdown management systems



Challenge

School boards across the Greater Toronto Area required widespread BMS upgrades and system retrofits across hundreds of active schools.

All work needed to be completed within a narrow summer window to avoid disrupting learning, while also addressing aging infrastructure, integrating multiple systems, and improving comfort, energy performance, and safety across diverse facilities.



Methodology

Completed detailed design work prior to school closures to enable immediate execution

Leveraged summer shutdown periods to complete large volumes of work efficiently

Standardized retrofit and integration approaches across multiple school boards



Solution

- ✓ Installed and retrofitted BMS systems across hundreds of K–12 schools
- ✓ Integrated HVAC controls to improve temperature stability and indoor air quality
- ✓ Implemented CO₂ monitoring to support student focus and cognitive performance
- ✓ Upgraded and integrated legacy systems, including infrastructure over 20 years old
- ✓ Deployed enteliWEB energy dashboards to monitor performance and promote energy awareness
- ✓ Installed Delta Controls PAS systems to support security and lockdown management
- ✓ Executed all installations during summer months to avoid disruption to school operations



The Ripple Effect

- ✓ Healthier, more comfortable learning environments that support student focus and productivity
- ✓ Improved visibility into energy use for school boards, staff, and students
- ✓ Enhanced safety through integrated security and alarm system coordination
- ✓ Scalable, standardized infrastructure capable of supporting future upgrades across districts

