



SUSTAINABLE SCHOOLS

saving our energy for education

JUNE 2020



WORKING TOWARDS ENERGY TARGETS: BEAR CREEK SECONDARY SCHOOL, BARRIE, ONTARIO



Bear Creek Secondary School, Barrie, Ontario
(Simcoe County District School Board)

- Grades 9-12
- 190,663 sf
- Year built: 2001
- Students: 1,514
- Portables: 8 (2018-2019)
- Fully air-conditioned

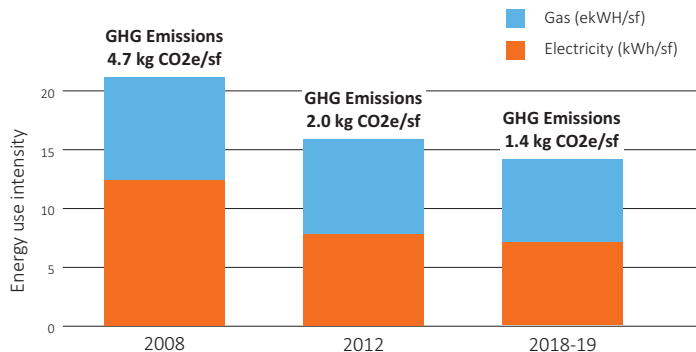


- One of Ontario's largest public school boards
- South-Central Ontario
- 87 elementary schools
- 14 secondary schools
- 9 alternative secondary schools
- 6 learning centres
- Over 6,000 employees
- Approximately 50,000 students



MEETING ENERGY TARGETS begins with getting building systems working properly. Testing is essential for uncovering opportunities and fixing long-standing issues. Simcoe County District School Board wanted to address energy costs as well as ventilation concerns at its Bear Creek Secondary School, built in 2001 on a fast-track schedule. The board undertook two phases of comprehensive HVAC and lighting testing, remediation, and retrofits. These measures, designed to meet the board's energy efficiency standard for secondary schools, improved comfort and system performance at the school and have resulted in utility cost savings of over \$40,000 per year.

Bear Creek Secondary School: Energy Intensity and GHG Emissions



Phase 1 System Testing and Remediation 2010-11

- Complete lighting retrofit to then current board standard of 0.6 W/ft² (fluorescent)
- Chiller plant testing leading to piping redesign, pump right-sizing and VFD
- Air handling unit testing to identify high static and low airflow conditions
- Duct redesign and enlargement, return fan relocations and silencer removals to alleviate static pressure losses
- VFDs for heating pumps to correct flow rates
- Additional BAS sensors with comprehensive reprogramming to demand-based control

Phase 2 Demand Control Ventilation 2017

- Engagement of caretaker through integrated building performance team meeting to review existing operating and comfort conditions and validate proposed retrofit measures
- Ventilation and heating pump testing, matching flow rates to current requirements
- VFD and zone damper installation for the 3 gyms
- VFDs for glycol pumps to enable demand-based cycling
- Installation of space CO₂ sensors
- Updated BAS reprogramming

For more information, please visit www.sustainableschools.ca or contact Katia Osokine, Program Manager, at kosokine@climatechallengenetwork.org.

Sustainable Schools is a program of the Climate Challenge Network.

Technical direction by

