



BUILDING N – NORTH CAMPUS MAJOR ENERGY EFFICIENCY RENOVATION



Building N is a 3-storey building housing the applied technology classrooms as well as design, computer and machine laboratories. The building also houses the main campus shipping and receiving areas as well as a data centre.

The renewal project fully replaces the building envelope with an ultra-high performance skin; including triple glazing, R30 effective walls, engineered transitions for superior air control, and many other enhancements. The renewal also revamps the heating and cooling systems to further reduce building energy consumption. The measures are expected to reduce building energy consumption by 30%.

PROJECT HIGHLIGHTS

- 30%** Reduction in Energy Use
- 75%** Heat Recovery Efficiency
- 43%** Reduction in GHG Emissions

Project Team

Architect	B+H Architects
Construction Manager	BIRD Construction.
Mechanical Engineer	Morrison Hershfield
Electrical Engineer	Morrison Hershfield
Energy Engineer	Morrison Hershfield



ENERGY EFFICIENCY



- **Triple Glazed, high performance windows** – The new high-performance glazing system will be a high-performance vision glass; consisting of triple glazing, double low-E coatings, warm-edge spacers and argon fill. The glazing framing system is a capless system to enhance thermal performance.

- **Highly Insulated Wall Assemblies** – The new walls will have an effective thermal performance of R30.

- **Enthalpy Heat Recovery Ventilation** – The ventilation system will be fitted with enthalpy energy recovery wheels, to recover heat and humidity from exhaust air – improving the HVAC system efficiency by pre-treating intake air with recovered energy.

- **Digital Controls** – all systems will be retrofitted with state-of-the-art digital control infrastructure & protocols. A revamped Building Automation System will help manage building system for optimized performance and system integration.

- **Occupancy Controls** – Occupancy sensors are installed in all spaces to turn the lights on, or off, based on actual occupancy. The ventilation system will be operated by CO2 sensors; providing demand supply ventilation when spaces are occupied.

COMMUNITY OUTREACH

A multi-disciplinary team of students were engaged to design improvements for Building N in parallel with the consulting team. The student team benefitted from regular meetings with the architects and engineers to present their ideas and designs and obtain “industry” feedback – including reminders of real life constraints like schedules and budgets!

