Robarts Library Energy Reduction Project — Occupancy Sensor Driven HVAC Control System

**Project Stats at a Glance**

| TOTAL BUILDING ANNUAL ENERGY USE BEFORE | 98,200 GJ |
| TOTAL BUILDING ANNUAL ENERGY USE AFTER | 64,416 GJ |

**Current and Cutting-Edge Technology Employed**

- **Customized Occupancy Sensors** (provides real-time occupancy levels)
- **New BAS** (Building Automation System)
- **Wireless Room Level Thermostatic Control System**
- **VSDs** (variable speed drives)

**PROJECT ANNUAL SAVINGS TO ROBARTS**
$1 million

**1.65 YEARS SIMPLE PROJECT PAYBACK**

**TOTAL PROJECT COST: $2.2M**

**INCENTIVES RECEIVED** (27%)
- TOTAL INCENTIVES RECEIVED (27%)
- INCENTIVES RECEIVED FROM TORONTO HYDRO & ENBRIDGE REPRESENTS 27% PERCENT OF TOTAL PROJECT COST ($595,500)

**TOTAL PROJECT COST: $2.2M**

**NET PROJECT COST: $1.6M**

**33,784 GJ TOTAL BUILDING ANNUAL ENERGY SAVED PER YEAR**
- COMPARED TO THE BASE YEAR
- BASED ON METERED DATA

**1,221 tonnes eCO₂ TOTAL GHG AVOIDANCE FOR THIS PROJECT**
- BASED ON ANNUAL ELECTRICITY AND THERMAL ENERGY SAVED

**438 TONS OF WASTE SENT TO LANDFILL**
- GHG EMISSIONS FROM