UNIVERSITY OF TORONTO
FACILITIES & SERVICES

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

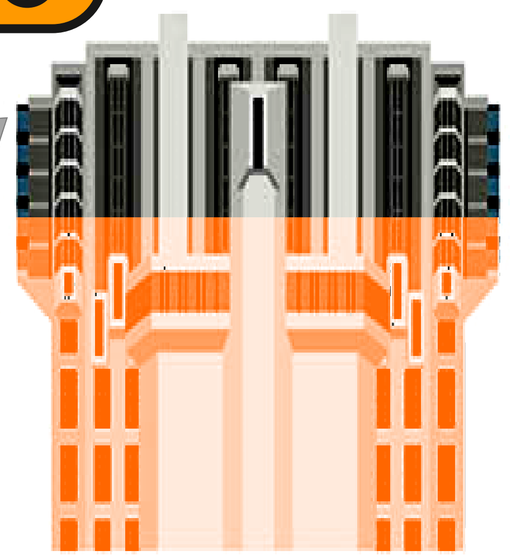
Project Stats at a Glance

TOTAL BUILDING ANNUAL ENERGY USE BEFORE (2013 BASE YEAR)
98,200 GJ

TOTAL BUILDING ANNUAL ENERGY USE AFTER
64,416 GJ

BUILDING HVAC USAGE BEFORE

BUILDING HVAC USAGE AFTER (44% REDUCTION)



CURRENT AND CUTTING-EDGE TECHNOLOGY EMPLOYED

CUSTOMIZED OCCUPANCY SENSORS (PROVIDES REAL-TIME OCCUPANCY LEVELS)

NEW BAS (BUILDING AUTOMATION SYSTEM)

VSDS (VARIABLE SPEED DRIVES)

WIRELESS ROOM LEVEL THERMOSTATIC CONTROL SYSTEM

$1 million
PROJECT ANNUAL SAVINGS TO ROBARTS
VERIFIED BY M&V PROGRAM AND SUB-METERS

1.65 YEARS
SIMPLE PROJECT PAYBACK

TOTAL PROJECT COST:
$2.2M

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

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 eCO_2
TOTAL GHG AVOIDANCE FOR THIS PROJECT
BASED ON ANNUAL ELECTRICITY AND THERMAL ENERGY SAVED

GHG EMISSIONS FROM 438 TONS OF WASTE SENT TO LANDFILL