

Solar Thermal Research Lab (STRL)

http://www.solarme.uwaterloo.ca/about_strl.html

Location

ERC 3009

General Lab: ERC 3009

Surface Optics Lab: ERC 3004

Rooftop test platform

Management

Director:

- Michael Collins (mike.collins@uwaterloo.ca; x33655)

Tour operator:

- Michael Collins
- John Wright (jlwright@mecheng1.uwaterloo.ca; x36849)

Users

- Graduate Students (mechanical engineering)
- Undergraduate Students (nanotechnology)
- Industrial Contracts:
 - Exova (National test facility)
 - Renewability
 - Brooklyn Concretes

Research

- Windows Shading Research
- PV/Solar Thermal Hybrid Systems
- Solar Optical Property Measurement Techniques
- Fundamental Numerical & Experimental Studies of Solar & Building Related Heat Transfer Processes
- Greywater Heat Recovery
- Heat Pump Assisted Solar Systems

Selected Projects

- Window shading models for building energy simulation (ASHRAE)
- Solar Building Research Network (SBRN)

Equipment

- Optical Testing:
 - UV/VIS/NIR Spectrophotometer
 - Fourier Transform Infrared Reflectometer (FTIR)
 - Gier Dunkle DB-100 Infrared Reflectometer
 - Gier Dunkle MS-251 Solar Reflectometer
 - Broad Area Illumination - Integrating Sphere

- Main Lab:
 - Heat Pump Test Rig
 - Greywater Test Rig

Supporting Partners

- NSERC (Discovery, Strategic, RTI, Network)
- CFI
- ORF
- ERA
- NRCAN (CANMET)
- other small contracts

Access Rights

- Open to university faculty/student
 - Fees depends on usage
 - (\$50/test for optic testing)
- Open to public/industry for a fee
 - \$150/test for optic testing
 - May add hourly rate for technicians
- Process:
 - Email/call Prof. Mike Collins about projects details (reply time depends on project & availability)
- Training:
 - Industry - no training needed (technicians)
 - students - 1.5 hr to train