



NSERC SMART NET-ZERO ENERGY
BUILDINGS STRATEGIC RESEARCH NETWORK
RÉSEAU DE RECHERCHE STRATÉGIQUE DU CRSNG
SUR LES BÂTIMENTS INTELLIGENTS À CONSOMMATION
ÉNERGÉTIQUE NETTE ZÉRO

IABP

Smart Net-Zero Energy Buildings Strategic Research Network and the International Association of Building Physics PhD SUMMER SCHOOL

Net-Zero Energy Building Modelling and Design for High Performance

August 20 - 28, 2014

Concordia University, Montreal, CANADA



Street and Detailed View and of John Molsen School of Business Solar Wall, Concordia University, Canada.

Lecturers

Andreas Athienitis
Concordia University, Canada
Diane Bastien
Concordia University, Canada
Mark Bomberg
McMaster University, Canada
Jose Cananedo
CanmetEnergy, NRCAN, Canada
Yuxiang Chen
Concordia University, Canada
Cynthia Cruickshank
Carleton University, Canada
Hua Ge
Concordia University, Canada

Costa Kapsis
Concordia University, Canada
Liam O'Brien
Carleton University, Canada
Carsten Rode
Technical University of Denmark - DTU
Ted Stathopoulos
Concordia University, Canada
Fitsum Tariku
British Columbia Institute of Technology, Canada
Leon Wang
Concordia University, Canada
Radu Zmeureanu
Concordia University, Canada

General Description

This summer school is open to PhD students working in the areas of Building Physics, Building Systems and Energy Efficiency. This intensive nine day course aims to develop student's expertise in modelling, simulation and design of cost effective Net Zero Energy Buildings (NZEBS) including the integration of enabling technologies (e.g. photovoltaics, shading technologies, controls). The class size is a maximum of 30 students made up of approximately 15 Canadian SNEBRN students and 15 students visiting from outside Canada. This provides participants with the opportunity to form professional and academic linkages.

This intensive 9-day course is comprised of daily lectures that include developed examples/problems solved as well as problem solving sessions including design/simulation exercises. A major design and modelling project is due at the end of the course.

Summer School Topics Include:

- Basic Building Physics, Heat, Air and Moisture Transfer in Buildings
- The Building as an Energy System: varying model resolution for different objectives, simple to detailed energy models
- Passive design and advances in building envelope/fabric materials: advanced windows, smart coatings, insulation developments
- Active building envelopes; building-integrated solar technologies BIPV, BIPV/T
- Wind effects and natural ventilation
- Thermal storage, passive/active building-integrated thermal storage, PCM; seasonal storage, boreholes, geothermal systems
- Modelling of NZEBs as integrated energy systems
- Case Studies of NZEBs (e.g. Ecoterra House) and high performance solar buildings including considerations of indoor environment/comfort

How to Apply to Attend the Summer School:

1. You need to be a PhD student in a related discipline.
2. Download an application form:
<http://www.solarbuildings.ca/index.php/en/calendar/icalrepeat.detail/2014/08/20/99/-/net-zero-energy-building-modelling-and-design-for-high-performance-phd-summer-school-montreal-qc-august-20-28-2014>
3. Complete the form and email it to: SNEBRN@gmail.com

Registration/School Details:

1. Successful applicants will be notified by email and sent a registration link.
2. You must register after applying to the Summer School. Registration Fee: \$200 US
3. Students must bring a laptop to the school.
4. Daily food included: lunch and 2 coffee breaks/snacks.