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Solar Nova Scotia

<http://SolarNS.ca/>



ENERhouse 2003

corporate members

*Annapolis Valley Home
Builders Association*

BDR Research Ltd.

CEF Consultants Ltd.

Compact Appliances Ltd.

Crowell Construction Inc.

Data-Home Technologies

*Enerplan Energy Services
Limited*

*Kassner Goodspeed
Architects*

*Robert Fraser, Solar
Renovator*

*Livingston Engineering
Associates*

*Don Roscoe, Solar
Designer/Builder*

NovaSol Inc.

S.H.E. Consultants

*Stoneridge Properties
Limited*

SOLTERRE Design

*Sun Ross Energy Systems
Limited*

Thermo Dynamics Ltd.

Insulation, air quality, budget, moisture, heating systems, health and R2000 are all part of ENERhouse 2003, a housing and energy conference scheduled for January 30 and 31 at the Westin Hotel in Halifax.

The two day conference will focus on issues important for builders, renovation contractors, building inspectors, architects, home designers, contractors, and building material suppliers. It is also open to the general public.

ENERhouse is presented every two years by the Nova Scotia Department of Natural Resources and the Nova Scotia Home Builders Association. This year's sponsors are Nova Scotia Power, Natural Resources Canada, the R-2000 program, the Daily News and the Nova Scotia Department of Energy.

A brief summary of the program follows. For more information, check the web page for the Nova Scotia Home Builders Association at <http://www.nshba.ns.ca/>

January 30, 2003

7:30 - 8:30 Registration

8:30 - 8:45 Welcome and opening remarks

**8:45 - 10:00 Joe's Best Basement
Insulation and Advanced
Framing Systems**

**Joe Lstiburek, Ph. D. P.Eng.,
Principal, Building Science
Corporation**

10:00 - 10:30 Refreshment break
and official opening of exhibits

10:30 - 11:15 Garages: Impact on
Interior Air

**Quality. Is your car really
outside?**

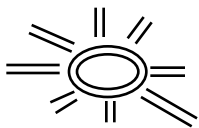
**Don Fugler, Research Division,
Canada Mortgage and Housing**

**11:15 - 12:00 EnerGuide for New
Houses**

**Come to
Solar Nova
Scotia's
AGM**

**7:30 pm
Thursday January 30,
2003**

**Board Room A222
'A' Building
Sexton Campus,
Dalhousie University**



Sylvain Quilliam, *Natural Resources Canada*

12:00 - 1:30 Luncheon: Keynote Speaker

The Honourable Gordon Balsler, *Minister of Energy, Province of Nova Scotia*

1:30 - 3:00 Energy Efficient Housing on a Tight Budget ..Lessons For Builders!

Betsy Pettit, A.I.A., *President, Building Science Corporation*

3:00 - 3:30 Refreshment break and exhibits

3:30 - 4:15 The Research Circus

Meet the incredible variety of research acts from CMHC: Tom the contortionist; Madame SRC and the disappearing energy bill; Bozo the Clown; Shawna and her house of mystery, and Snuffy the elephant.

Don Fugler, *Research Division, Canada Mortgage and Housing*

4:15 - 5:00 The New R-2000 Technical Standards

Terry Watters, *SHE Consultants and Dennis Naugler*, *Hawk-Eye Design & Inspection Services*

6:30 - 9:00 R-2000 Builder Update Workshop

Tex McLeod, *The McLeod Associates*, and **Gord Cooke**, *Air Solutions*

9:00 -10:00 R-2000 Builder Reception, Sponsored by R-2000 Nova Scotia

January 31, 2003

8:30 -10:00 Economic Cost of Climate Change, Reducing Greenhouse Gas Emissions. "Why are buildings so important?"

Donald Aitken, Ph.D., *Principal of Donald Aitken Associates*

10:00 - 10:30 Refreshment Break with exhibits

10:30 - 12:00 Moisture Mysteries

John Straube, P.Eng. Ph.D., *Professor of Building Science, University of Waterloo*

12:00 - 1:30 Luncheon: R-2000 Awards, Natural Resources Canada

1:30 - 2:30 Right sizing your heating system, Gord Cooke, *Air Solutions*

2:30 - 3:30 Healthy Homes / Healthy People

Tex McLeod, *The McLeod Associates*

3:30 - 3:45 Refreshment Break with exhibits

3:45 - 4:30 Build Canada: The Zero Cost R-2000 Upgrade

Tex McLeod, *The McLeod Associates*, and **Gord Cooke**, *Air Solutions*

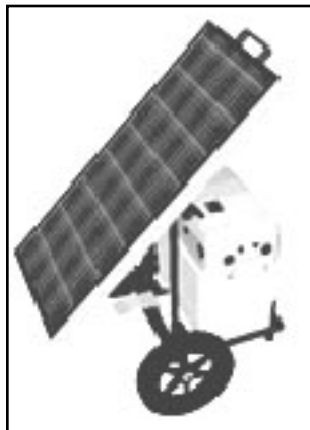
4:30 - 4:45 Conference wrap-up

While at ENERhouse come join Solar Nova Scotia at our AGM on Thursday night a few blocks away at DalTech, now known as Sexton Campus, Dalhousie University. See directions on the back page.



Solar Orange Juice

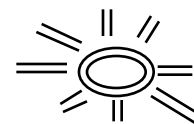
Halifax is home to a business that aims to be entirely sustainable. Andrew Angus runs solar juice, which uses a 50 watt solar panel built by Solar Dynamics, to run a juicer.



Juice is made from local organic ingredients and featuring about five recipes, which change with the season. There are no greenhouse emissions gas from this company as they get around town, to community events and the weekly farmers market by bike using a specially designed trailer to carry the solar panel, battery, juicer and ingredients.

Solar juice would like to encourage small scale local economies, organic agriculture, healthy lifestyles and alternative energy. To that end Solar Juice and Be the Change raffled off a solar PV unit called "the Harvester" before Christmas. This is the same unit they use to run the juicer. For more information on Solar Juice please see their website at <http://www.bethechange.ca/solarjuice/index.htm>

Guest speaker at Solar Nova Scotia's agm will be Aaron Barkhouse, Dalhousie University's most recent Rhodes Scholar. Come hear about his fuel cell research and his plans for Oxford!!



Can we afford to use Photovoltaics?

Presently the cost of PV technology is much more expensive than traditional electrical generation and has a very long payback period. The future, however, is very promising. In *“Photovoltaics for Buildings: Opportunities for Canada: A Discussion Paper”*, Natural Resources Canada has assessed the break-even point of electrical production costs for PV products in Canada using market data from the past 25 years. Based on annual growth rates of 20 percent (PV growth has actually been closer to 30 percent for the past six years), the break-even point for the current technology to compete with bulk electricity generation in Canada will be reached within the 2020-2030 time frame. This is based simply on lowest production cost, and does not take future major advancements of technology into account, nor the added advantage of reduced greenhouse gas production. The actual projected costs are (in constant 1997 US\$): \$0.14/kWh by 2010, \$0.08 by 2020 and \$0.047 by 2030.

A more recent trend in the evolution of PV systems is the development of Building Integrated Photovoltaics (BIPVs). Instead of mounting the PV panels on a rack on the roof of a building, the PV cells are incorporated into a building material. Currently there is much development in PV roofing, PV cladding and PV shading elements. PV roofing is installed in a manner similar to conventional roofing and is available in shingles, tiles and metal standing seam metal roof. PV cladding is available as a curtainwall element. PV shading can be effective as a window shading element, entrance canopies, or walkway shading. PV panels can be opaque, used where no light transmission is needed, or semitransparent.

Semitransparent modules can be used where light is desirable, such as in atria or skylights, but still provide some shading to reduce cooling loads and the need for interior shades.

BIPVs displace the capital cost of the traditional building material, and eliminate the need for separate support for the PV panels. Presently, PV building panels cost more than traditional materials, but the costs per installed kilowatt are decreasing as production and competition increases.

NRCan notes that until the use of BIPVs becomes more widespread, there are a number of barriers. Canadian utilities are often not familiar with small, decentralised energy production. Consequently, utility interconnection

for these autonomous power systems is a major barrier for BIPV systems deployment. Another major barrier is the absence of adequate technical standards and installation codes. Other non-technical barriers include the lack of experience among builders and electrical inspectors; lack of financing for systems with large capital costs; additional permitting, insurance and inspection fees for net-metering systems; lack of awareness of the potential and long-term benefits to system integrators and electrical safety regulators.



PV Metal roofing. (photo: www.toolbase.org)

A major factor that is not considered in looking at the cost of PVs is the cost of greenhouse gases. Each kilowatt of photovoltaic micropower installed has the potential to offset: 1.58 tonnes CO₂/year when replacing coal use; 1.30 tonnes CO₂/year when replacing oil use; and 0.73 tonnes CO₂/year when replacing natural gas use. “The Nova Scotia Greenhouse Gas Accounts for the Genuine Progress Index” produced

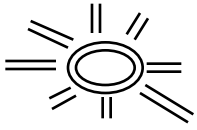
by GPI Atlantic estimates that Nova Scotia’s 1997 GHG emissions alone will cause over \$760 million of global damages due to climate change. Maybe the question should be “Can we afford to not use PVs?”



Come Join us at Maxwell’s

Every Friday night, members of Solar Nova Scotia gather at Maxwell’s Plum between 5:00 pm and 8:00 pm for friendly chat about solar and alternative energy.

The big news is that Maxwell’s is now smoke free until 9 pm. Come join us at the corner of Sackville and Grafton in downtown Halifax



Chair's Report

The last year has been busy with home tours, home shows, solar shelter courses, and participation in the Kyoto Climate Change rally.

We continue to make improvements to Solar Nova Scotia's display used at the home shows and have documented the process for doing successful home tours. The fall tour was excellent, and if you didn't attend, make sure you catch the next one.

We would like to get more involved in the weekly home magazines and our big project should be the Millenium Home Inventory. This year we want to focus on training people to help deliver parts of the solar shelter course, and getting the Millenium Home Inventory Project underway.

Finding the Solar Nova Scotia agm

First, remember that it will be held on Thursday, January 30, at 7:30 pm.

The meeting will be held in the Board Room A222 in A Building, Sexton Campus of Dalhousie University.:

- If you are coming from the Westin Hotel, turn right, North, onto Barrington St.

- You will cross Morris St and about 1/2 a city block further, you will see the Sexton Gymnasium, the round brick building beside the Barrington St. entrance

- Walk up past the main entrance to the Gymnasium and continue on the sidewalk to the right of the entrance, about 50 metres further, to access the 24 hour night entrance.

- We'll put up signs to help you from this point on.

- You will enter a ramped hallway. Turn right and proceed up the hallway, past the big stairwell, until you see an elevator on your right.

- Take the elevator to the second floor.

- Turn left off the elevator and left again down a long hallway to the end.



solar shelter courses

Solar Nova Scotia offers a practical, how-to course on designing and building solar shelter, including greenhouses, solariums, additions and especially solar homes. The course includes solar basics, climate control, site designing, shelter designing, solar construction, and making it happen.

Windsor Community Education Centre, six Wednesday evenings 7:00pm - 10:00pm starting February 5th. Register with Wendy Hudson at 792-6750.

NSCC, Leeds St Campus (formerly NSIT), six Thursday evenings 7:00pm - 10:00pm starting February 6th. Register with Solar Nova Scotia at 902-852-4758

Bridgewater High School/Chester Basin, six Tuesday evenings 7:00pm - 10:00pm starting January 28th. Register with Sandy Mair @ 543-1011 or Chad Haughn at 275-2712.

Fee is \$80 for individuals and \$140 for couples.

solar nova scotia membership form

name: _____

co. name: _____

address: _____

postal code: _____

phone: _____ email: _____

membership fees:

- \$10.00 unwaged/student
- \$20.00 waged
- \$75.00 corporate
- \$10.00 SESCO members
- \$_____ donation

Tell us what you are interested in:

- | | |
|--|---|
| <input type="checkbox"/> passive solar | <input type="checkbox"/> active solar |
| <input type="checkbox"/> technical support | <input type="checkbox"/> education |
| <input type="checkbox"/> promotion | <input type="checkbox"/> newsletter writing |
| <input type="checkbox"/> networking | <input type="checkbox"/> other: _____ |

How did you find out about Solar Nova Scotia?

- | | |
|--|---|
| <input type="checkbox"/> print advertising | <input type="checkbox"/> earth festival |
| <input type="checkbox"/> radio or tv promo | <input type="checkbox"/> solar shelter course |
| <input type="checkbox"/> phone book | <input type="checkbox"/> friend |
| <input type="checkbox"/> home show | <input type="checkbox"/> other: _____ |