Solar Nova Scotia

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www.SolarNS.ca

Corporate Members

ABRI Sustainable Design & Consulting
Andy O'Brien Solar Home Design
Advanced Heating Solutions
Annapolis Valley Home Builders Association
Appleseed Energy
Atlantic Solar Systems
BDR Research Ltd.
Bfreehomes
Cansolair Inc.
CEF Consultants Ltd.
Clean Nova Scotia
Creative Solar
Crowell Construction Inc.
Doctor Solar
Don Roscoe, Solar Designer/Builder
EnCom Group
FreeFuelForever
Green Power Labs
Halifax Heating Residential
Harris Atlantic
Independent Power Systems
Island Earth Solar
Kassner Goodspeed Architects Ltd.
MaManna Energy
Nodding Marine
NovaPro Builders Limited
Nova Sun Power
Pelican Engineering
Solterre Design
Stoneridge Properties
Sun Ross Energy Systems Limited
Sustainable Housing and Education Consultants
Thermo Dynamics Ltd.
As of March 6, 2010

Historic Building Energy Issues – Attics and Roofs

Article three in energy series on historic buildings.
By Bill Hockey – Architectural Conservation Services

Heat loss through a roof or attic can be up to 30% of the total loss for a building, half of which is air leakage through various features in the ceilings. While the main purpose of a roof is to keep precipitation out of the building its second function, which is perhaps as critical, is to vent moisture to the exterior.

(Continued on following page)

Corporate Profiles

The Solar Nova Scotia Newsletter is introducing a new feature in this issue; publishing the profiles of corporate members who have submitted them. In this way readers of the Newsletter can become better acquainted with our corporate members, their project work, and the goods and services that they provide. In this issue we are profiling Green Power Labs on page three.

Energy Efficiency in Nova Scotia

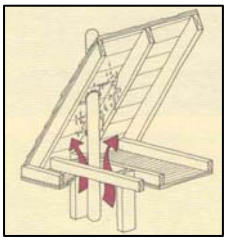
By Aaron Smith

Over the last few decades energy efficiency in Nova Scotia has been promoted by the both the electricity utility and provincial government. Various branches of the government handled the task until almost four years ago when Conserve Nova Scotia (Conserve NS) was created as an agency of the provincial government to administer energy efficiency programs. Since this time general Government funds have been used by the group to support the various initiatives to reduce energy use for both residential and commercial users. Example programs include the EnerGuide and Solar Heating rebate programs.

As a result of Nova Scotia Utility and Review Board (UARB) hearings over the proceeding two years, it was decided that both Nova Scotians and the electricity utility can save money by through the use of ratepayer-funding energy efficiency programs. Therefore the consumers that use more energy put more money into the pot as they should have the greater potential to receive money in return. These fees were then collected and the electricity utility began administering efficiency programs until the government made a decision regarding who would run the programs.

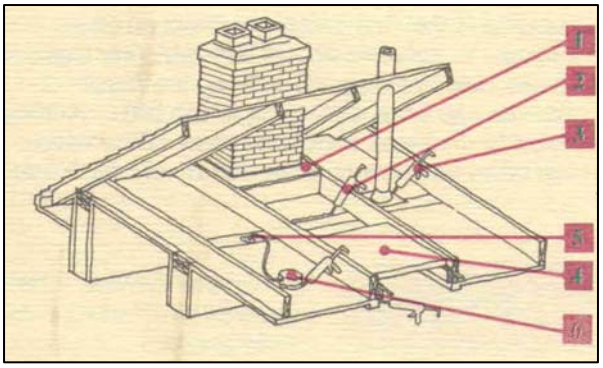
(Continued on page 3)

Attics and Roofs (Continued)



If this second function is blocked, moisture vapour accumulates, condensation occurs, and rot and moisture related damage is guaranteed. It is essential to ensure that there is an effective air barrier between the tempered space and the cold outside space, and that this cold outside space is vented to the exterior. Numerous articles written on the problems of attic condensation would not have been necessary if people had applied good building envelope science principles in the first place.

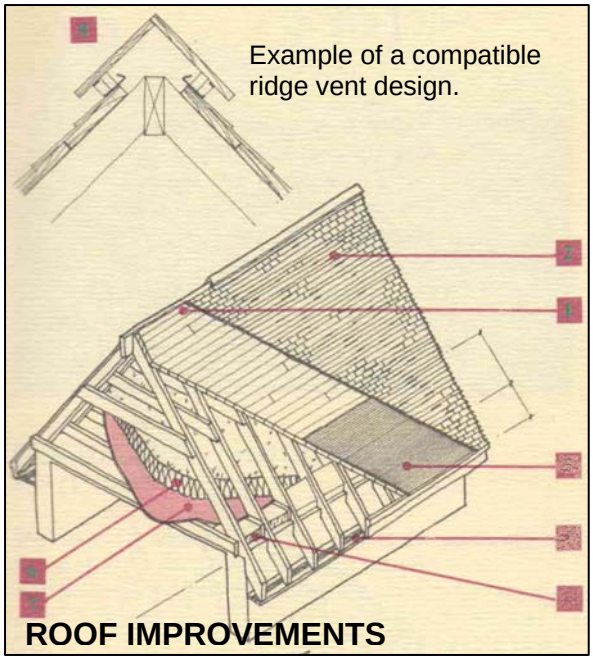
Once one has ensured that the roofing doesn't leak and the structure is sound, the most important thing one can do before insulating is to install an effective air seal. This can be placed on the ceiling below if the finishes are being replaced. If this is not possible, in the attic space on the joists with at least 2/3 of the insulation installed on its cold side. If this cannot be done, sealing could be attempted using a combination of sealants, gaskets and foam. Penetrations include the following:



CHIMNEY (1) – Install metal firestop between framing and masonry. Seal at masonry with high temperature sealant. Seal to framing with acceptable sealant. Seal vapour barrier if applicable.
CEILING/TOP PLATE JUNCTION (2) – Install blocking to close open cavities. Seal as required.
PLUMBING STACK (3) – Provide flexible seal to accommodate thermal movement of stack and seal to framing or vapour barrier.
ATTIC HATCH (4) – Ensure proper fit with weather striping and provide positive closure hardware.
WIRING/TOP PLATE PENETRATION (5) – Seal around each wire at framing penetration.
LIGHT FIXTURES (6) – Electrical boxes to code, seal and insulate.

Buildings that use the attic spaces, such as 1½ storey houses with pony walls, are a particular problem as it is virtually impossible to install a continuous seal. A two cm² hole in a vapour/air barrier will transmit 30 litres of water into a building envelope during the heating season.

Ventilation of the cold space must be carefully considered, because the vents must be installed in the eaves and at/near the ridge. Inappropriate installations can lead to ice dams and water penetration caused by heat loss. Vents can be a strong design element in the gables of a building, but difficult to do in a hipped roof.



1. Remove deteriorated wood and replace with new sound dimensional lumber of the same dimensions.
2. New roofing compatible with building appearance.
3. New eave protection installed from edge of eave to minimum 750 mm from inside of exterior wall.
4. New continuous soffit vent with metal insect screen and wire mesh rodent guard.
5. Insulation and weather barrier at eave. Ensure air movement is maintained under roof sheathing.
6. Blown cellulose or batt insulation installed over air/vapour barrier.
7. New polyethylene air/vapour barrier, sealed at edges and seams with sealant or tape. If installed over existing insulation ensure additional insulation is installed on top of it so that 2/3 of the insulation is on the cold side of the vapour barrier.
8. New Continuous ridge vent.
9. If using cedar shingles or shakes on the roof install over a spacer such as *Cedar Breather* or wood lattice installed on top of building paper on the sheathing to maintain an air space that will keep the material dry, extend its life and reduce ice damming.

If you have specific questions about energy issues in attics and roofs of historic buildings, please write bill@archconserve.ca for a response.

Energy Efficiency in Nova Scotia Continued)

A subsequent report commissioned by Conserve NS from Dr David Wheeler of Dalhousie University suggested that these programs would be best administered by an independent 'third party' agency. Some of the rational for this decision are that it would have a secure source of funding (it can not be subjected to government cuts) and that it would avoid any potential conflict of interest that may be present if the programs were run by the electricity utility.

Last Fall the Government followed suit and passed legislation to create an independent agency to run these programs - Efficiency Nova Scotia Inc. (ENS). ENS is an independent not-for-profit corporation and will initially receive funds from fees placed on our power bills. The fee currently amounts to a $2 per month fee for the average Nova Scotia household power bill. Conserve NS will cease to exist when ENS gets up and running and is expected to take over programs from both the Conserve NS and NSPI portfolio. As ENS is not government funded, it is projected to save the provincial government $20M on this year's budget. Its initial focus will be on reducing electricity usage but it is expected to eventually be expanded to cover other fuel sources such as oil and natural gas.

Solar Tours

Currently we have not scheduled our solar tours; however, we can let you know when the next one is if you do the following:

Write to info@SolarNS.ca to get on our mailing list and get up-to-date information as the tours are finalized.

Corporate Profile -Green Power Labs

Green Power Labs is a company of solar resource experts and engineers. As solar resource experts we provide solar resource mapping, monitoring and forecasting services.

greenpowerlabs
Solar Vision People

As solar engineers we assist clients with assessment, planning and implementation of solar technologies. We bridge the gap between solar technologies and their potential users by providing comprehensive decision support for clean energy deployment and management.

Our main areas of activity:

• Solar for Buildings: we provide comprehensive solar engineering services to architects and building owners and managers assisting them in the deployment of the complete suite of solar technologies.

• Solar for Communities: we build solar generation potential maps of communities and provide energy asset mapping and sustainable energy planning services for communities and municipalities.

• Solar for Utilities: we provide high resolution solar resource mapping, and monitoring and forecasting of solar power generation for utilities and power producers, and project feasibility consulting services to utility-scale project developers and financiers.

For details on recent Projects visit our website at www.greenpowerlabs.com

Solar Nova Scotia AGM

Monday, March 15, 2010 – 7:00 to 9:30 pm
Room 1016 Ken Howe Building, Corner of University Avenue and Seymour Street
Dalhousie University
Guest Speaker to be announced.

ecoEnergy Renewable Heat Program – for those considering taking advantage of the program, the Federal Government has posted a conclusion of the Program in March 2011. The last date for receipt of applications is October 31, 2010. Think about it. You may also qualify for a provincial rebate of $2,500 towards the cost of a solar install.

The Solar NS Friday night get together is now being held at the Lion's Head Tavern and Grill corner of Robie and Sullivan Streets with lots of free parking on site and in the area. Starting around 5:00pm, it is a great place to discuss renewable energy issues and socialize with Society members. Beer is optional!

Upcoming Solar Shelter Courses

Solar Nova Scotia is offering practical, how-to courses on designing and building Solar Shelters, including Greenhouses, Solariums, additions and especially Solar Homes. Topics include Solar Basics, Climate Control, Site Designing, Shelter Designing, Solar Construction, and Making it Happen. This course is intended for the general public and for those in design and construction. Cost of the course is $90.00 for an individual, $150.00 couples in both locations. This includes handouts. An optional textbook, the *Canadian Solar Home Design Manual* is offered at $35.00.

HALIFAX – at Bloomfield Centre, Agricola Street, Halifax, six Tuesdays 7:00 to 10:00pm starting April 6, 2010. Register with Solar NS by Phone, not E-mail (902) 852-4758.
BRIDGEWATER – Bridgewater High School, six Thursdays 6:45 to 9:45pm starting April 15, 2010. Register with Sandy Mair by phone at (902) 543-2274.
CHESTER – Forest Heights, sis Thursdays, 6:45 to 9:45pm starting April 15, 2010. Register by phone at (902) 275-3490.
TRURO – Weekend Course April 9, 10 & 11. Friday, 6:30 to 9:30pm, Saturday and Sunday 9:00am to 5:00pm. Register with Theresa Osborne at (902) 893-6710 or tosborne@nscc.ca
MIDDLETON – Weekend Course April 23, 24 & 25. Friday, 6:30 to 9:30pm, Saturday and Sunday 9:00am to 5:00pm. Register withBea.Sturney@nscc.ca

Upcoming Solar Construction Courses (Prerequisite for course "Solar Shelters Course")

This course concentrates on construction detailing and procedures with Don Roscoe. Topics include – Ground Insulation for Frost Protection, Heat Storage Slabs, Air Recirculation Systems, Making your Own Fixed Windows, Doing Sloped Glazing, Costing Materials and Labour. Course fee $60.00 (students $40.00) Detail sheets and data CD are included.

HALIFAX – April 17, 8:30am to 5:00pm; **FREDERICTON** – April 24, 8:30am to 5:00pm. Register by phone at (902) 852-4578.

See www.solarns.ca for additional information and updates, regarding locations.

solar nova scotia membership

mail to: Solar Nova Scotia, 83 Old Scotts Road, McGraths Cove, NS B3Z 3V2

name: _____

co. name: _____

address: _____

_____

postal code: _____

phone: _____

email: _____

web: _____

membership fees:

- ❑ $10.00 unwaged / retired / student
- ❑ $20.00 waged
- ❑ $200.00 corporate
- ❑ $_____ donation

Tell us what you are interested in:

- ❑ active solar
- ❑ networking
- ❑ promotion
- ❑ education
- ❑ passive solar
- ❑ technical support
- ❑ other: _____