

Retrofit and Microfit Action in Faith Communities

2011 -2013 Case Studies from Greening Sacred Spaces



Beth Emeth Bais Yehuda Synagogue, Toronto



Melrose United Church, Hamilton



Islington United Church, Toronto



Erin Mills United Church, Halton-Peel



Faith & the
Common
Good

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We thank our sponsor for funding this project



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Islington United Church – Winner 2013 Greening Sacred Space Award
Etobicoke, Ontario



Community Overview:

Our Mission: To be an open, friendly and caring church where people of all ages are invited to discover, explore and develop their spirituality in Christ's name. Islington United Church began 160 years ago. Their neo-Gothic sanctuary was constructed in the late 1940s.

Retrofit and Solar Story:

Why have we elected to undertake these actions? Three key reasons:

The Spiritual Dimension

A New Creed of The United Church of Canada calls on us to “live with respect in Creation.” The Bible makes many references to the natural world - the teeming seas, the fruitfulness of the land, and the rivers and garden. Genesis 2:5 has a reference to humankind’s relationship with the Earth which has often been translated into English as “to till it” but the original text is more correctly translated as “to keep it”.

The Responsible Dimension

We are all intricately connected. The time has long since come to find creative solutions to protect our environment - solutions that take the future seriously and promote living in harmony with nature.

The Practical Dimension

We show we care about creation, by taking action.

Actions:

We formed a Green Team with 6 members, hired an engineer to conduct an Ashrae Level Audit, did a lighting retrofit (installed LED in the sanctuary and CFLs and T8’s everywhere else), and tracked our energy consumption (5 years of monthly gas, hydro

and water). We insulated our flat roof (solar), the baseboards, radiators and electrical receptacles and after that, we introduced some conservation measures; as a result, our hydro consumption has decreased by 14% over past 2 years.

In Oct. 2011, we held a Solar Open House to celebrate the installation of 10 kw solar panels on our roof. About 100 people attended, including local municipal, provincial and federal politicians.

Key to Success: We constantly kept our entire congregation informed about what we were doing.

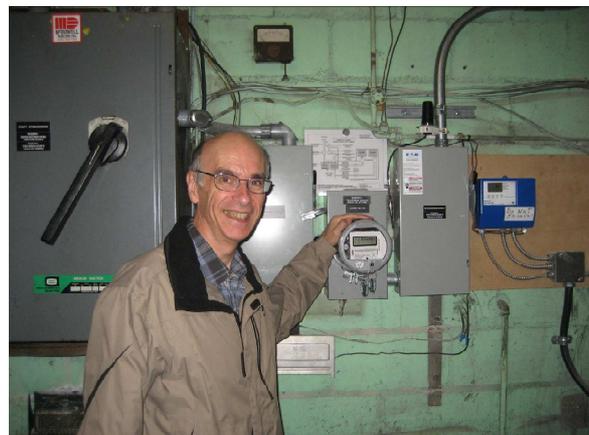
Lessons Learned:

A successful project requires the following:

1. Solid Proposition
2. Committed Green Team
3. Good Supplier

Memorable Moment:

Oct. 2011 - “After hook-up, we saw solar production on monitor - knew it was real.”- *Dennis Bradley, Green Team Member*



| Solar Project Payback Summary |
|--|
| Type: Solar PV, South facing roof mounted |
| Installer: Solar Grid with Intervolt Electric |
| Financing: Islington United Trust Fund Loan |
| Installed Cost: \$80,000 |
| Estimated Annual Revenue: \$13,000 |
| Expected Payoff Period: 8 to 10 years |

Beth Emeth Bais Yehuda Synagogue - Winner 2013 Greening Sacred Space Award Toronto



Community Overview:

Our Mission: To foster a full and joyous way of life proudly rooted in a heritage of traditional Conservative Judaism, and committed to Jewish values, education, spiritual well-being, community and leadership activities that support Israel.

Brief History: With 150 determined people and \$500 in the bank, merging twice with other synagogues Beth Emeth now has 1300 congregational families.

Retrofit Story:

Why have we elected to undertake these actions?

Three key reasons:

1. National energy cost increases
2. Global environmental imperatives
3. Objectives: to lower hydro-electricity and gas bills with practical and achievable initiatives

The Spiritual Dimension: Judaism declares and the Torah, Jewish laws, customs, traditions and respected Jewish scholars provide the evidence that there is one God who created the universe, the heavens and the whole earth. We are directed to be stewards of the earth in a co-partnership between God and mankind.

The Responsible Dimension: Judaism teaches us the intricate connection between God, the environment and man and man’s obligations to be stewards of the earth.

The Practical Dimension: We cannot be complacent but must demonstrate environmental responsibilities through our environmental actions.

Actions: The Greening Committee was formed on February 10, 2010. Energy conservation and waste reduction have been achieved by lowering the temperature of the Hot Water heaters, installing locking covers for thermostats, low flow toilets, motion sensors in washrooms, replacing window shades with screening shades and reducing waste created by Sabbath Kiddish. Other measures taken were re-caulking windows, turning off lights when room not in use, dimming lights when possible, setting computers at optimum energy savings, using low energy appliances, shutting off air conditioners when last person leaves the room, installing timers on air conditioners for Sabbath or Holidays, turning PA system off when event is over, labelling switches for correct lights to use, Please turn off lights sign on Ladies Washroom, Brides Room and Library thermostats locked to appropriate seasonal temperature, base temperatures: 69/70degrees. In 2012, we replaced old AC/heating units with high efficiency units.

Key to Success: Team collaboration and fiscal incentives from Toronto Hydro & Synagogue funding.

Lessons Learned: A successful project requires the following:

1. **Team collaboration** with House Committee, Board, Administration/Professional/Custodial Staff, Greening Committee, synagogue membership and Community Outreach
2. **Funding**

Memorable Moments:

Receiving funding from Toronto Hydro and Better Building Partnership Toronto & Winning 2013 Greening Sacred Spaces Award.

| |
|--|
| Replacement 20 ton Air Conditioning/Heating Units Payback Summary |
| <i>Type:</i> Carrier |
| <i>Installer:</i> Advantage Airtech |
| <i>Financing:</i> Toronto Hydro & synagogue funding |
| <i>Installed Cost:</i> \$50,000 |
| <i>Installed Cost after SaveOnEnergy Incentives:</i> \$25,000 |
| <i>Estimated Annual \$ Savings:</i> \$5,000 |
| <i>Expected Payoff Period:</i> 5 years |

Melrose United Church, Winner 2012 Greening Sacred Space Award, Hamilton

Community Overview:

Mission: To respond to God's call by being a people of faith who open our hearts and minds to the true power and love of Jesus Christ. To live our faith by providing within our changing community a welcoming environment which encourages people of all ages to care for and accept one another.

Melrose United Church is located in southwest Hamilton. The prominent stone building, constructed in 1929, sits on Locke Street South.

Retrofit and Solar Story:

We have been looking at our environmental footprint and 'Greening our Sacred Space' for a number of years. At our Annual General Meeting in February 2011, we discussed and approved an energy plan, which recommended replacing our aging boiler and installing new solar panels on the roof.

Boiler replacement and solar panel installation were both completed during the summer of 2011. We have found that the savings from these actions is allowing us to spend more money on our core services.

Actions:

1. Energy audit in May 2009
2. Replaced 40 fluorescent light bulbs to LED in 2011.
3. Installed solar panels in Nov 2011
4. Replaced old boiler in 2012; have reduced energy consumption by 15%
5. Installed low flow toilets, weatherproofed doors and windows and purchased new energy efficient fridge.

complex environmental enhancements to the congregation and allowed people to support those as they could. We found that this created a good environment for change which facilitated the approval of the larger projects.

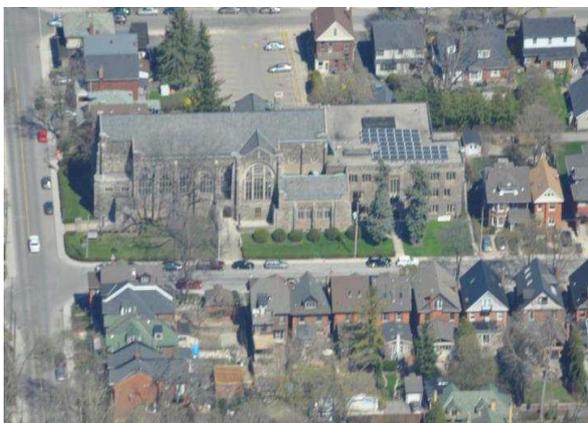
Lessons Learned:

This initiative took several years to put together and only came about by bringing the entire congregation with us. A few key people created the vision for the project, and drove the process. By getting "buy-in" from our community, they helped this to become a reality.

Memorable Moment: Well, actually, there were 2 of these. When we first turned on the solar panels ... and when we put the new, high efficiency boiler and found that we had reduced the cost of heating our building by 15%.



The new boiler at Melrose United is state of the art.



Key to Success: We created a core team to recommend and shepherd these large projects. We also communicated the less expensive and less

| New Boiler High Efficiency Unit - Payback Summary |
|---|
| <i>Type:</i> Gas Boiler |
| <i>Installer:</i> Fueltec Compustion |
| <i>Financing:</i> 3% annual loan |
| <i>Installed Cost:</i> \$ 130,000 |
| <i>Estimated Annual \$ Savings:</i> \$14,000 |
| <i>Expected Payoff Period:</i> 9 years |

Erin Mills United Church, Winner 2013 Greening Sacred Space Award, Halton-Peel

Community Overview:

Mission: To be a "Growing community of faith that offers opportunities for all persons to experience the love of God through Jesus Christ." EMUC seeks to be a community where all can 'put down their roots and let their spirits soar'.

The first United Church community in Erin Mills began in 1973, worshipping at Brookmeade Public School. In 1974, the Crossroads United Church became part of the Erin Mills Church Campus, a building that provided worship service space to several Christian Churches. In 1988, Crossroads gave 'birth' to Erin Mills United Church. The current EMUC building was constructed in 1992 to accommodate the growth of the congregation.

Retrofit and Solar Story:

Greening Sacred Spaces did a green audit; which recommended replacing lights, updating the HVAC system, improving insulation and installing new solar panels on the roof.

Actions:

1. Energy audit in 2010.
2. Lighting in Sanctuary replaced in 2010.
3. Exit signs replaced with LED bulbs in 2010.
4. Solar panels installed in Nov. 2011.
5. Low flush toilets installed in 2010 and 2011.
6. Replaced 224 bulbs; T12's to T8's throughout the building in 2013.

Key to Success: We attribute our success to our dedicated Green Team members and committed ministerial leadership; they both worked very hard to cultivate congregational support.



Lessons Learned:

It is important to have dedicated and passionate volunteers working on environmental initiatives. Keeping the congregation informed about current initiatives encouraged involvement, which was wonderful, particularly if a member had a particular expertise that she or he could lend.

There is a need to continue to cultivate new green team members. We also feel that it is very important to have a good relationship with the contractor who is doing the work.

Memorable Moment: We showed the congregation how the lighting worked on the first Sunday after installing it. It was evident by their reaction, that the congregation was delighted with the results, and very appreciative of all the hard work that had gone into the project.



| Lighting |
|--|
| Type: T 12 to T 8 Lights (224) |
| Installer: AC Contracting Electrical Systems |
| Financing: \$2800 paid by Erin Mills United Church Building Fund, other \$2800 funded by Small Business Lighting Grant(\$1500) and SaveOnEnergy program(\$1300) |
| Installed Cost: \$5600 |
| Installed Cost after SaveOnEnergy Incentives: \$2800 |
| Estimated Annual \$ Savings: \$1060 |
| Expected Payoff Period: 2.6 years |

