

Energy Conservation In LCC Churches **C.S.L. McNeil P.Eng.**

Saving energy in our church buildings is a God-pleasing way to save significant dollars that can be better spent on missions, outreach and preaching the Gospel.

There have been a number of significant advances in technology and technique that must be part of any church energy saving program. These are:

- **More Efficient Lighting** – Compact Fluorescents are now more cost effective than regular light bulbs and should replace them. While compact fluorescents are more expensive to buy, they last so much longer that the purchase cost over time is much the same. The real savings are in the energy used, which is about one third of conventional bulbs. Timers and motion detectors on outside lighting also make great sense and save real dollars.
- **Air Tightness** – As in a home, plugging leaks of expensively heated air to the great outdoors is often the most cost effective measure you can take. Caulking from the inside and weather stripping around doors, windows and sill plates where the concrete foundation meets the walls is easy and has an almost instant payback.
- **Windows** - All windows, including stained glass, should be double glazed in our climate and our climbing energy prices. Replacing windows for energy savings is not that cost effective. If, however, windows are being replaced, it should be with low emissivity coated, argon filled windows, which should cost no more than older conventional windows. Low cost clear plastic window covers can be used over the winter or permanently to save energy and dollars. Lucite or other clear plastic glazing on the outside of stained glass not only protects from vandalism but also acts as energy saving double-glazing.
- **Basements** – If the basement walls are not adequately insulated to the floor, significant and costly heat loss occurs. Bare concrete should be insulated to R10 at least by building a 2x4 stud wall with batts and using 10-mil poly as an air-vapour barrier.
- **Attics** – attics over heated spaces should now be insulated to at least R40 or 12 inches of batt or pored insulation. Make sure adequate ventilation is maintained and vents to the outside are not blocked. Summer heat needs to be vented from the attic to aid cooling – power vents may be a solution if this is a problem.
- **Heating, Ventilating and Air Conditioning** – Good maintenance saves energy and money. Set back thermostats are a must. If a new or replacement system is needed, consider earth energy heat pumps. They are four times as efficient as resistance electrical furnaces or baseboard heaters and Ontario Hydro called them “the most efficient heating and cooling system available”. It is by far the most environmentally effective system since most of the energy supplied by this system comes from solar energy stored in the ground. Installation costs can be higher than conventional systems but there is always a payback. For professional assistance in assessing this option at no charge, call Cam McNeil P.Eng. at 613 592-3977.

Cam McNeil headed Canada's Conservation and Renewable Energy Demonstration Program and is the designer of Earth Energy Heat pumps that NRC found to be the most energy efficient in the world. He is a Regent of Concordia University College, a LAMP pilot and a member of Christ Risen, Kanata, Ont.