

Energy Assessment for York Center Church of the Brethren

New Community Project-Undoing Global Warming Program

May 2008

Stated Goals:

Reduce CO2 emission by 80% by 2050
Increase comfort in church building
Save money and use for programs

Numerical Information on energy use of YCCoB:

11,000 square feet
\$11,000-\$12,000 annual energy costs
8000 therms per year in heating
37,500 kwhr per year in electricity
40,600 miles per year average in driving
185,000 lbs of CO2 emissions per year average

York Center CoB is off to a good start in its stated goal to reduce CO2 emissions by 80% by 2050. It has a higher number than average of committed members to take on the task and has already implemented several changes including compact fluorescents, adjustment of heat, and installation of storm windows. Some members bike and walk to church or have energy efficient vehicles.

Suggested changes and installations for YCCoB:

Transportation

Create church car pool system
Create safe bike route map to church
Install bicycle racks on church grounds,
Create a small church fund or incentive for public bus riders to church
Implement a monthly “bike/walk/ carpool to church Sunday”

Food

Use and sell fair trade coffee
Promote church meals with local organic and vegetarian meals
Create map of local foods sold in the area
Create recipe book on in season meals (sell Simply in Season cookbook, Herald Press)
Develop community garden plots (see below for more information)

Heating

Bubble wrap windows in storage room
Install close-off ventilation fan in bathroom
Seal doors with ‘V’ strip weatherization material and improve door thresholds
Caulk and seal windows not used for summer ventilation
Seal storm windows in winter with removable caulk
Caulk outside rim joist where building meets foundation

Caulk by passes where wires and pipes enter exterior walls and ceiling.
Passive solar installation in Sanctuary entryway
 Clear south facing double pane windows (energy star rated)
 Terracotta tile flooring 3-6' along south windows for thermal gain
Weatherize doors leading into sanctuary
Seal all cracks found on concrete wall (inside and outside)
Bubble wrap windows in Sunday school room that is not used
Make and install accordion style curtains
General check-up of current heating system
Plant conifer wind breaks along West and Northwest building
Install exterior foam roof insulation

Electricity:

Efficient sensor lighting
Install T-8 lighting for office and entryway
LED exit lights
Install shade trellises 3-4 feet away from AC for higher performance
Purchase energy star rated refrigerator
Buy green power blocks from regional power company

Outside:

Plant conifer wind break trees on North and Northwest areas
Increase plantings of deciduous trees on south side of building
Create community garden plots for adjacent neighbors and low-income families on open property. Garden with heavy mulching and install swale systems in garden area for improved water retention
Install roof water catchment barrels for garden use
Install Rain Gardens along the lower end of the parking lot. This will absorb motor oil and residual pollutants before entering the water table.

Community Garden Project

Much of our food is grown and transported at very high energy costs and is grown with the use of chemical fertilizers and pesticides. A local organic community garden reduces this negative impact significantly while producing fresh, healthy produce, and saves needy families money.

A community garden project on the church grounds for the local neighborhood, especially for lower-income families would significantly represent a commitment towards stewardship of creation, and social concerns. The start of a community garden would involve the following steps;

1. Agreement with the congregation to initiate the project.
2. Examination and discussion concerning liability issues of families who will garden (this may involve creating a legal waver for families that participate in the garden).
3. Interviewing families in the neighborhood regarding need and desire to garden (my experience has show that culturally, most families from Latin America, Laos,etc, are very excited and long for access to land to garden).
4. Designate 2-4 work days with both neighbors and members of YCCoB to create initial garden space and have a chance to build relationships.

5. Examine need for fencing and water sources. (Collection of water from roof water catchment rain barrels and swale systems will provide much of the water needed at no cost)
6. Lay our garden plan and till soil.
7. Construct swale system on contour to prevent soil erosion and dramatically increase water retention for gardens. This will lessen the need for watering.
8. Add soil amendments such as compost and have straw bales available.
9. Mulch heavily with newspaper and straw
10. Have seeds and plant starts available to participating families.

Long term projects

A professional energy audit (perhaps free from your energy company) is recommended for the building structure.

Insulate roof with external foam insulation

Install geothermal heating and cooling system for high efficiency

Install tank-less water heaters

Install solar hot water system (currently the most cost effective solar energy use)

Please feel free to contact me if you have questions and need assistance in purchasing items for energy efficiency installations. I am also available to consult regarding a community garden project.

It has been a pleasure getting to know the YCCoB and I look forward to being in touch,

Sincerely,

Tom Benevento

Undoing Global Warming program

New Community Project - Shenandoah Valley Region

910 Collicello

Harrisonburg, VA 28022

Tel: 540-433-2363