

How to Care for God's Creation and have a Church Building

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BEST PRACTICES

For A More Environmentally Friendly Church

AT YOUR CHURCH



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- fix leaks
- turn off lights
- compact fluorescent lamps (CFL)
- LED exit signs



Whole Building



FIX LEAKS



TURN OFF LIGHTS



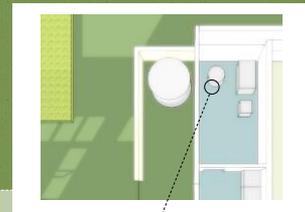
SWITCH TO CFLs



LED EXIT SIGNS

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- energy audit & maintenance contract
- water heater insulation
- programmable thermostat
- energy efficient equipment



Mechanical Room



ENERGY AUDIT



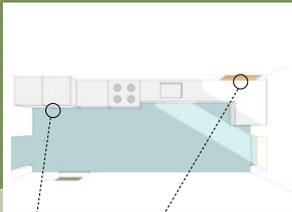
WATER HEATER INSULATION



PROGRAMMABLE THERMOSTAT

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- Energy Star appliances
- reusable dishware and towels
- community garden & composting



Kitchen



ENERGY STAR APPLIANCES



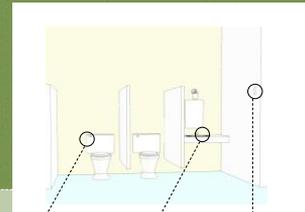
REUSABLE DISHWARE



COMPOSTING & GARDEN

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- earth-friendly paper products
- dual flush toilets
- low-flow faucet aerators
- occupancy sensors



Toilet Rooms



SUSTAINABLE PAPER PRODUCTS



DUAL FLUSH TOILETS



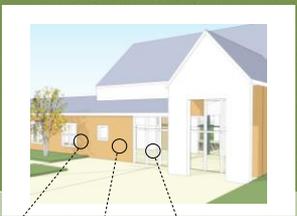
FAUCET AERATOR



OCCUPANCY SENSORS

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- caulk & weather strip
- insulate
- repair or replace windows



Weatherization

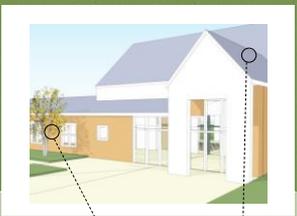



Climate Specific Windows		Climate Specific Windows	
Climate Zone	U-Value	Climate Zone	U-Value
1	0.35	2	0.32
3	0.31	4	0.2

SEAL INSULATE WINDOWS

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- climate specific windows
- shade trees or canopy
- reflective roof



Sun Control

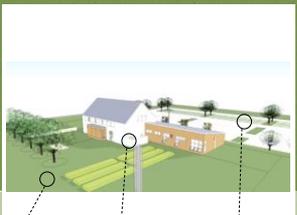




CLIMATE SPECIFIC WINDOWS SHADE TREES REFLECTIVE ROOF

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- drought resistant plants
- rainwater collection
- pervious paving



Storm Water Management

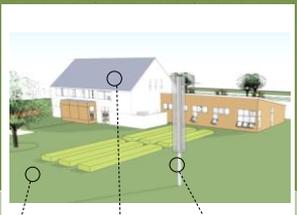




DROUGHT RESISTANT PLANTS RAINWATER COLLECTION PERVIOUS PAVING

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- ground source heat
- solar power
- wind energy
- green power



Renewable Energy





GROUND SOURCE HEAT PUMP PHOTOVOLTAIC ROOF WIND TURBINE

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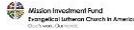
- energy savings
- building reliability
- occupant comfort and health
- benefits vulnerable communities

The National Council of Churches estimates that if each of the nation's congregation buildings cut energy use by 25%, they would save nearly \$500 million to spend on other priorities.

RETURN ON INVESTMENT



Photo by Michael Ring, ELCA

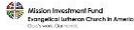



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There are several options for going solar and each provide different benefits and cost structures.

SOLAR PURCHASE OPTIONS





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SOLAR FINANCING ALTERNATIVES

- Solar Tax Credit Overview – 30% cost reduction!
- Donations or cash on hand
- Borrowing
 - Church members
 - 30% benefit pass through to members (CAUTION!)
 - Performance-based lease with a 3rd party, with a deposit feature
 - 3rd party solar specialty financing
 - Potential for some reduction in cost due to tax credit and other tax benefits
 - Church affiliates – Presbyterian Investment & Loan Program, Mission Investment Fund
 - Other 3rd parties
 - Mortgage refinancing or 2nd mortgage



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Financial benefits of DIRECT OWNERSHIP

- Electricity savings: solar array connected behind existing electrical meter and will directly reduce electric bill.
- State of federal incentives. In many states can receive incentive rates per kWh.
- Unfortunately non-profits are unable to take advantage of tax benefits associated with solar ownership.

The church purchases the solar panels and receives all of the electricity and state/federal incentives if applicable. You may take out a loan to spread out upfront costs over 10 or more years.

DIRECT OWNERSHIP



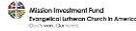
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Financial benefits of POWER PURCHASE

- No upfront costs
- Can save money on electric bill by locking in long-term, stable rate below current utility cost.
- Typically extra credits, often created in the summer months, will carry forward on your electric bill to be used during winter months.

The church pays nothing up front and purchases solar electricity at a discount through a Power Purchase Agreement.

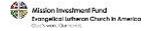
POWER PURCHASE AGREEMENT



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Comparison of Options

	Option 1 Direct Ownership	Option 2 Power Purchase
Array Size	50 panels (15 kW)	50 panels (15 kW)
Estimated Annual Output	69% of usage (19,500 kWh)	69% of usage (19,500 kWh)
Equivalent CO2 Reduction	Preserving 17 Acres of Forest	Preserving 17 Acres of Forest
Upfront Cost	Est. \$50,000	\$0
Estimated 25-year Total Savings	\$156,760	\$39,670



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Financing Option

	Option 1 Direct Ownership
Upfront Cost	Est. \$50,000
Estimated Loan Rate	2.75% (Restoring Creation Loan)
Term	Up to 10 Years
Annual Payment (for 10 years)	\$5,725
Estimated 25-year Total Savings	\$99,100



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www.elca.org/Resources/Caring-for-Creation

A link to Earthkeeping Resources and the ELCA's Social Statement on the Environment.

www.lutheransrestoringcreation.org

A grass roots movement within the ELCA, seeking to foster care for God's creation in all expressions of our church's life. Includes news, tips, and links relating to creation care efforts throughout the ELCA.

www.energystar.gov/congregations

Free information and resources, including technical support, from a division of EnergyStar specific for congregations.



www.webofcreation.org



www.energystar.gov



www.ncccejustice.org

ELCA
RESOURCES



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<http://www.mif.elca.org/building-green>

Includes short videos about green buildings (info from this presentation).

www.mif.elca.org/resourcecenter

See Forms – Building Green

A list of simple things you can do to green your congregation or home.

An extensive “self” audit form you can use to perform a first level walk-thru of your building which includes guidelines and information.

RESOURCES



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www.presbyterianmission.org/ministries/environment/

<https://www.presbyterianmission.org/ministries/environment/earth-care-congregations/>

A grass roots movement within the PCUSA, seeking to foster care for God's creation in all expressions of our church's life

<https://www.pec.org/>

Presbyterians for Earth Care (PEC) invites individuals and congregations to participate in the growing earth care movement within the PC(USA). PEC is a national eco-justice network that cares for God's creation by connecting, equipping, and inspiring Presbyterians to make creation care a central concern of the church.

PCUSA RESOURCES



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Caring For God's Creation

"God gives us and all creatures life through the water, air, food and all the other gifts that come to us from the earth. Everything we do both depends on these gifts, and has some kind of impact upon them. If these gifts are treated with contempt and abused, people, animals, and plants suffer together. If they are graciously received and cherished, people will flourish with the rest of creation. We cannot love God or our human neighbor without caring for creation. The question is not whether the church will engage with what our society calls the environment, but how."



The Rev. Mark S. Hanson Former Bishop
Evangelical Lutheran Church in America

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