



National Capital Presbytery Earth Care Network

PERFORMING AN ENERGY AUDIT AT YOUR CHURCH

WHY WE SHOULD CARE FOR THE CREATION

Our Presbyterian faith encourages us to strive for eco-justice: defending and healing creation while working to assure justice for all of creation and the beings that live in it. This call is rooted in the human vocation of “tilling and keeping” the garden from Genesis 2:15, as well as Christ’s charge to work with and for the most vulnerable. Because of our love for Christ, who is firstborn of all creation (Colossians 1:15), churches are challenged to live in a manner consistent with God’s call to not only care for creation, but commune with it.

WHAT IS AN ENERGY AUDIT?

Churches can benefit from having an energy expert review their facilities to determine areas where upgrades could produce energy savings. This can result in lower utilities costs. Using less energy also reduces the amount of greenhouse gases released into our environment. These emissions contribute to global climate change, impacting us all, but they tend to impact the most vulnerable members of our human family, the people Jesus called “the least of these.”

As EMAT¹, a local energy consultant, notes on its website: “Auditing your building’s energy usage is the first step to building a solid plan for improving energy efficiency. Without an energy audit, you may be spending money on projects you think are improving your building’s energy efficiency but that are not really moving the needle that much.”



¹EMAT refers to Energy Audit Software.

EMAT is a tablet-based software tool designed to help energy auditors streamline the auditing process



WHAT CAN YOU EXPECT FROM AN AUDIT?

Depending on the level of review that a church decides is appropriate, an auditor reviews your church's facilities and reports areas where the church could achieve savings, the approximate costs of mediation measures, and the rate of return.

EMAT summarized levels of audits as follows:

“The American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE) outlines three different levels of energy audits. The audit levels differ based on how intensive they are and what type of outcome you can expect.”

ASHRAE LEVEL 1 AUDIT – WALK-THROUGH ANALYSIS

An ASHRAE Level 1 audit is the most basic level of audit, designed to give churches a starting point for making changes or further in-depth auditing.

In a Level 1 audit, the auditor takes a high-level view of the building's operations and energy usage.

This audit can include steps such as:

- Interviewing staff
- Reviewing facility utility bills
- Walking through the site

The goal of an ASHRAE Level 1 audit is to identify glaring areas of energy inefficiency. All gathered data is then compiled into a report detailing no- or low-cost changes that can be made to the building, as well as other potential capital improvements earmarked for further study.

When should you have a Level 1 audit?

Before you begin making improvements to your building's energy efficiency, it's important to have a baseline of where you are now, so you can measure improvements.

A Level 1 audit can give stakeholders a picture of where the church building currently stands, how it compares to other similar churches, and what areas need further investigation or improvement. For churches looking to just get started with improving energy efficiency, or for churches who find it difficult to “sell” the need for energy improvements, a Level 1 audit is a good starting point.”



What can you expect to pay for a Level 1 energy audit?

In the past, some local energy providers have done a Level 1 audit for free, but times have changed, and each locality is different. If you cannot get the audit for free, figure on spending up to \$2000.

ASHRAE LEVEL 2 AUDIT – ENERGY SURVEY & ANALYSIS

The Level 2 assessment includes an evaluation of lighting, air quality, temperature, ventilation, humidity, and other conditions that may affect energy performance and occupant comfort. Every church is, of course different, but typically a Level 2 audit, at a minimum, would look at:

- *Insulation and weather stripping.* When was the insulation in the church's attic spaces installed and what is its current R rating? Are there cracks in the sealings around exterior doors and windows?
- *Heating and Air conditioning.* What is the age and condition of the church's systems? What kind of thermostats are used?
- *Lighting.* Does the church have incandescent and or fluorescent lighting? LED lights can provide significant savings over these kinds of lights.
- *Appliances.* What is the age and condition of appliances like refrigerators and stoves?

The process also would include detailed discussions with the building Management/Property team and church staff to explore potential problem areas and clarify financial and non-financial goals of the program. Usually, the auditor will use a computer model of the building, based on floor plans, mechanical schedules, and architectural drawings.

The Level-2 audit should result in a clear and concise report and briefing with the Management/Property team, describing a variety of Energy Efficiency Measures (EEMs) including no- and low-cost measures, modifications to system controls and building automation, operational changes, and potential capital upgrades. The findings should include costs and performance metrics, as well as a means for the church to evaluate the EEMs and decide how to proceed with implementation.

Many of the EEMs revealed during the ASHRAE Level-2 audit can be implemented quickly with rapid or immediate financial payback for the church. Other EEMs will require more detailed analysis of benefit and cost and the other goals that are important to the church. The audit should define next steps to accomplish this analysis and decision making. Sometimes it is through discussion with manufacturers or suppliers or other relatively simple means.



When should you have a Level 2 audit?

A Level-2 audit is a good follow up to a level-1 walk through. A level-2 audit will clearly identify areas where churches can get the greatest savings. If you haven't already conducted a Level 1 audit, you may ask the auditor to include the Level 1 audit as part of the Level 2 audit to save some time and money.

What can you expect to pay for a Level 2 energy audit?

Local energy engineering firms typically charge between \$4,000-6,000

ASHRAE LEVEL 3 AUDIT – DETAILED ANALYSIS OF INTENSIVE CAPITAL IMPROVEMENTS

“A Level 3 audit builds on the findings and recommendations of a Level 2 audit by offering a more in-depth engineering analysis of potential changes.

Detailed gathering of data in the field is conducted, and that data is analyzed more intensely for areas of improvement and potential costs.



Existing data on utilities is supplemented by sub-metering of the energy consumption of key systems such as HVAC, as well as monitoring of those systems' individual characteristics.

A Level 3 report offers a better baseline, allowing the church to compare energy and operating savings both pre- and post-implementation.

When should you have a Level 3 audit?

Level 3 audits are for those churches that have already completed a Level 2 audit, have identified capital cost projects that it wants to undertake, but need more data before making that size of an investment.”

What can you expect to pay for a Level 3 energy audit?

Local energy engineering firms typically charge upwards to \$10,000+.

CAN MY CHURCH GET FINANCIAL ASSISTANCE TO CONDUCT AN ENERGY AUDIT?

Fairfax County churches can apply for a dollar-for-dollar grant from the county for an [Energy Conservation Assistance Program grant](#).

Churches in Montgomery County should explore the programs and resources offered by the [Montgomery County Green Bank](#) and the [Maryland Energy Administration](#) , as these organizations are specifically geared towards assisting non-profits with energy-related projects. It is also recommended to reach out to the Interfaith Power & Light (DC.MD.NoVA) for additional guidance and support, and to utilize the [Montgomery Energy Connection](#) website as a comprehensive resource for information on local incentives and programs.

Churches in the National Capital Presbytery can apply for a [Power to Change dollar-for-dollar grant](#) of up to \$2000 to help defray the cost of an energy audit.

What churches in the National Capital Presbytery have undergone an energy audit and how can I contact them?

- Providence Presbyterian Church, Fairfax, VA., contact David Kepley, kepley.david@gmail.com
- Bradley Hills Presbyterian Church, Bethesda, MD, contact Bonnie Holcomb, bkholcomb@gmail.com
- National Capital Presbytery, Earth Care Network Ncpecn2026@gmail.com

