



U.S. Environmental Protection Agency

Resources for Higher Education, K-12 and Worship Facilities

Jerry Lawson | National Manager
ENERGY STAR for Small Business & Congregations



EPA protects human health and life
sustaining ecosystems...
supporting faith community teachings on
stewardship of creation

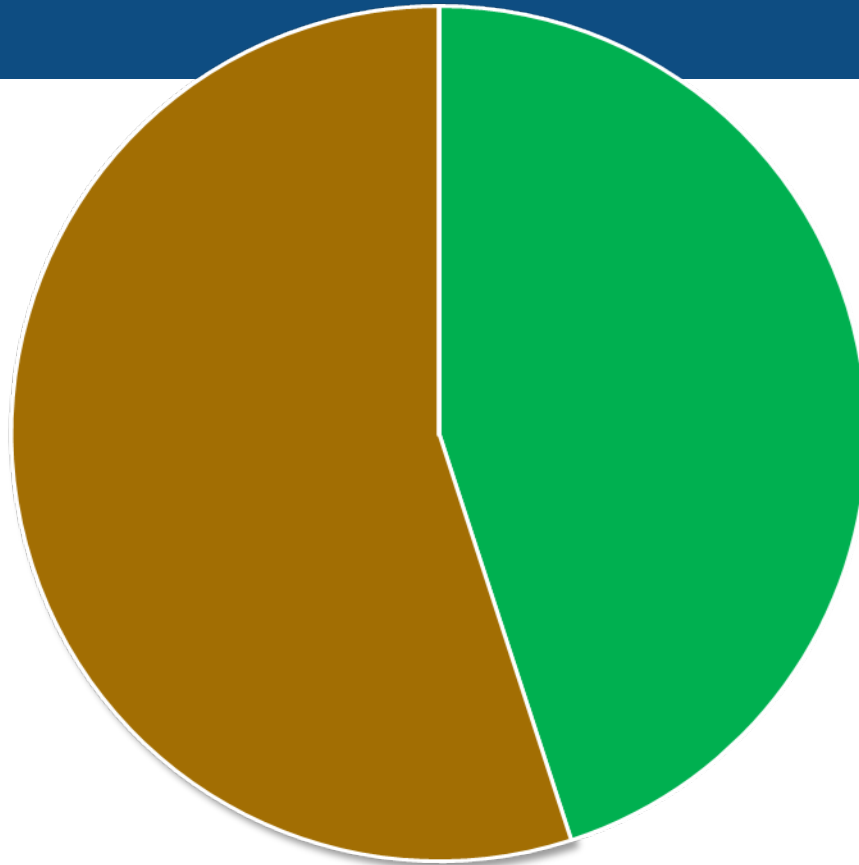
ENERGY STAR provides:

- **Portfolio Manager** tool to baseline and track energy, water, and GHG emissions data
- Additional tools, training, and technical support
- National recognition for excellence in sustainability



Why focus on buildings and plants?

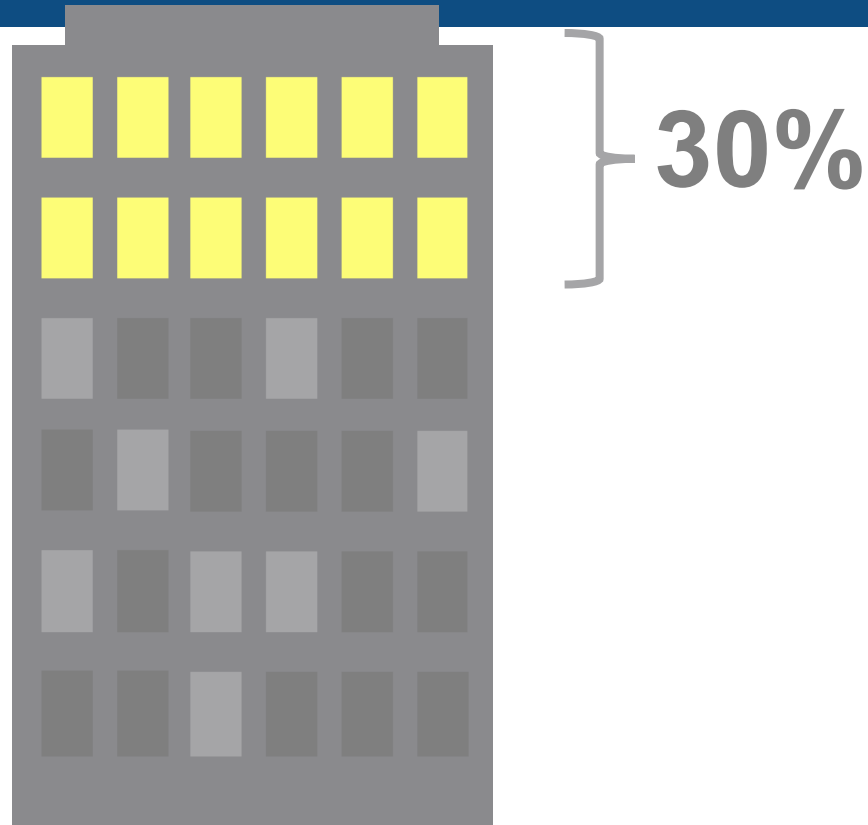
U.S. CO2 Emissions



] Buildings = 45%

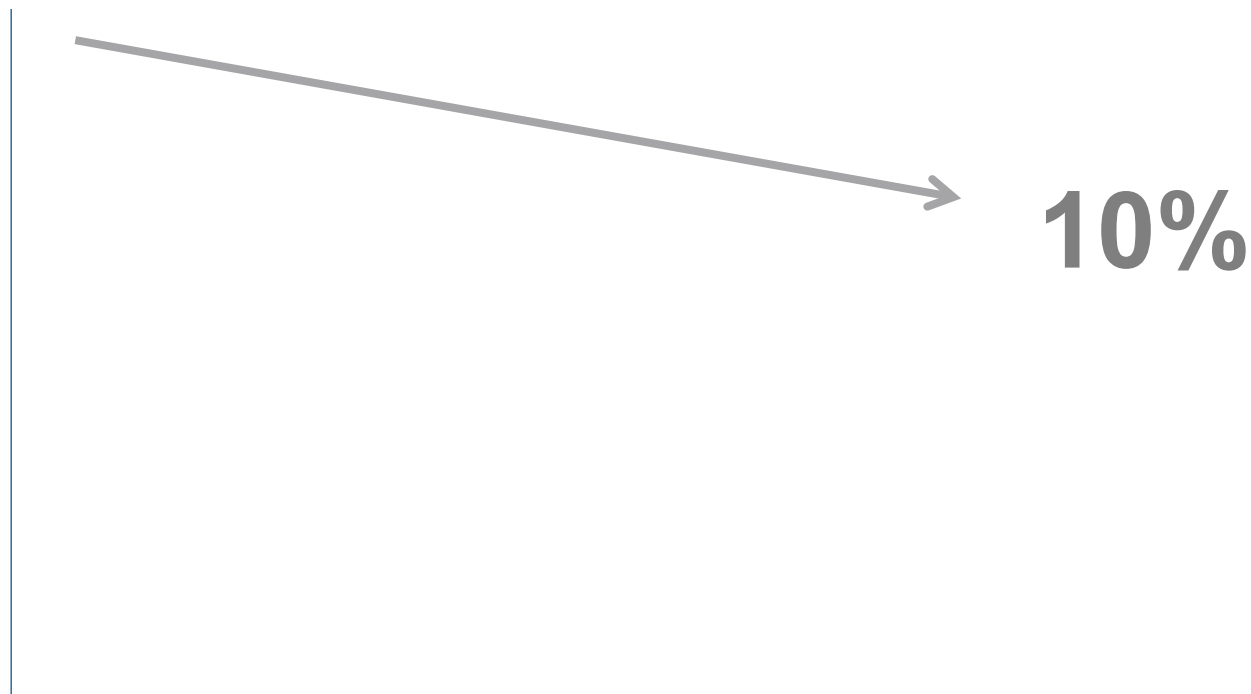
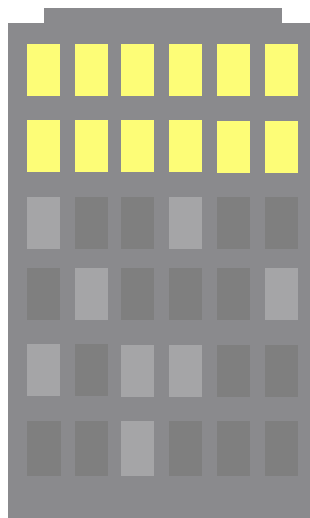
Why focus on buildings and plants?

Typical **30% energy waste** in buildings – including worship facilities



Why focus on buildings and plants?

No-cost to low-cost savings potential



ENERGY STAR impacts

- In 2020 alone, emissions reductions were equivalent to more than 5% of U.S. total greenhouse gas emissions.^{1,2}
 - Amounted to an estimated **\$7 - \$17 billion in public health benefits**
 - Emissions reductions were **equivalent to >5% of U.S. total greenhouse gas emissions.**
- Estimated **>\$100 billion annual market value** of ENERGY STAR product sales.
- Over **750,000 Americans employed** in manufacturing/installing ENERGY STAR certified products -- about 35% of U.S. energy efficiency jobs.
- Since 1992, **every \$1** spent on ENERGY STAR produced about **\$350 in energy savings** and resulted in **\$230 invested** by businesses and households on energy efficient equipment and services.

Footnotes at <https://www.energystar.gov/about/impacts>



Resources for Higher Education

Colleges and Universities

According to [a 2023 survey by the Princeton Review](#), 67% of prospective applicants say a college or university's commitment to environmental issues would affect their decision to apply or attend. By improving the energy efficiency of their buildings, higher education institutions can save money, reduce their carbon footprint, and demonstrate environmental leadership to the public. Unlike offsets, efficiency can actually save institutions money, further benefitting them through increased asset values.

Hundreds of colleges and universities from across the nation have already partnered with ENERGY STAR

RECOGNITION OPPORTUNITIES FOR COLLEGES & UNIVERSITIES

Featuring Northwestern University as a guest speaker, this January 2022 webinar highlighted opportunities for colleges and universities to earn varied recognition from ENERGY STAR and sister programs at EPA, particularly for their efforts to improve the energy performance of their existing buildings.

- [Recognition Opportunities for Higher Ed: slide set](#) (PDF, 3.8 MB)

Download Step Away from the Spreadsheet: A Guide to Sustainability Data Management Tools in Higher Education

Step Away from The Spreadsheet: A Guide to Sustainability Data Management Tools in Higher Education



Introduction

The management of sustainability data in higher education has experienced an exciting evolution over the last few years. Where spreadsheets used to dominate, a variety of software tools are now available to help institutions efficiently track, manage, and reduce their environmental impact while generating financial savings. Each of these tools fills an important niche. However, it can be challenging for higher education leaders to determine the best use of the software given their campus energy and sustainability goals.

This guide is intended to help colleges and universities understand the landscape of available software, compare features, and ultimately select the right set of tools. It also summarizes recent trends in sustainability data management and provides a simple framework for creating a data management roadmap at your institution.

Trends in Sustainability Data Management

Before diving into specific tools, it is important to understand the broader trends in higher education sustainability data management that are driving many institutions to adopt these tools:

1. **Transition from spreadsheet to software:** Campus energy and sustainability data has historically been tracked in spreadsheets—a time-consuming and error-prone process that makes effective collaboration between departments difficult. Now, most sustainability data functions including collection, tracking, analysis, benchmarking, and reporting can be done using software tools. These tools have become cheaper, more streamlined, more integrated, and more user friendly for both technical and non-technical staff in recent years.
2. **Greenhouse gas management and climate commitments:** Colleges and universities are widely preparing greenhouse gas (GHG) inventories and committing to emission reduction targets. As of September 2019, 445 institutions have joined [Second Nature's Climate Leadership Network](#) and thousands calculate their GHG emissions through [SIMAP](#)® or other tools. However, preparing a GHG inventory is a complex process that involves collecting a wide range of activity data and precisely applying emissions factors, making it an excellent fit for simplification by software.
3. **Energy and sustainability as investment opportunities:** Institutions increasingly view on-campus energy and sustainability projects not just as the right thing to do, but as a source of significant return on investment (ROI) through avoided costs. The [Sustainable Endowments Institute](#) has found that schools investing in these projects via green revolving funds or other programs routinely achieve ROIs of 15% across thousands of projects, and [other reports](#) have identified a median ROI of 28%. As costs for [efficient and sustainable technologies continue to decline](#), institutions are turning to software to identify, prioritize, and track on-campus investments and to verify achieved savings.
4. **Peer-to-peer benchmarking:** Colleges and universities have always wanted to know how they stack up against their peers, but many now benchmark their energy and sustainability performance specifically. Benchmarking helps institutions identify the greatest areas for improvement while attracting top students who care about sustainability. It also presents an opportunity to show leadership through sustainability scores and earn recognized certifications such as [STARS](#)®, [ENERGY STAR](#)® certification, and [LEED](#).

ENERGY STAR® is the simple choice for energy efficiency. For more than 20 years, EPA's ENERGY STAR program has been America's resource for saving energy and protecting the environment. Join the millions making a difference at [energystar.gov](#).



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Checklists for K-12 & Worship Facilities

- Facility Management & Benchmarking
- Lighting
- Building Envelope
- Water: Interior Hot and Cold
- Water: Exterior Savings
- HVAC
- Office Equipment/Plug Load
- Kitchen/Food Service Equipment
- Waste Reduction and Recycling
- EV Charging

[Download the Checklist for Worship Facilities](#)
[Download the Checklist for K-12](#)
[Also available in Spanish.](#)



Energy and Water Efficiency Checklist for K – 12 Schools

ENERGY STAR for Commercial Buildings

Grab a clipboard and take this checklist along as you discover water efficiency at your school. Note that due to the many operating characteristics of some sections may not apply to your property.

For this checklist, focus on uncovering opportunities to save. When you find something, make notes about location, tools, materials, expertise, needed, or further research required.



1 Facility Management and Benchmarking

- Managing costs starts with knowing your baseline use. Start by printing a [Data Collection Worksheet](#). This Worksheet will list all you need to benchmark your property in the free, online ENERGY STAR Portfolio Manager® tool for energy use, water use, and recycling/materials management.
- With the data collection worksheet in hand, collect property use data and utility bills in preparation to set up a Portfolio Manager account.
- [Create an account.](#)
- Learn more and find all Portfolio Manager [training and tech support](#).
- After you enter energy data, a 1 – 100 ENERGY STAR® score will compare your property to other K – 12 schools. A 75 or higher score is eligible for ENERGY STAR certification.
- Educate and encourage staff and students to report leaks, turn off lights, recycle, and support your environmental commitment.
- Adopt a purchasing/procurement policy that specifies the EPA ENERGY STAR, WaterSense® and Safer Choice® labeled products when applicable.
- Learn how [reducing, reusing, and recycling](#) can help your school improve the environment by saving money, energy, and natural resources.



Energy and Water



Energy and Water Efficiency Checklist for Worship Facilities

ENERGY STAR for Commercial Buildings

Grab a clipboard and take this checklist along as you discover opportunities to increase energy and water efficiency at your worship facility. Note that due to the many operating characteristics of some sections may not apply to your property.

For this checklist, focus on uncovering opportunities to save. When you find something, make notes about location, tools, materials, expertise, needed, or further research required.



1 Facility Management and Benchmarking

- Managing costs starts with knowing your baseline use. Start by printing a [Data Collection Worksheet](#). This Worksheet will list all you need to benchmark your property in the free, online ENERGY STAR Portfolio Manager® tool for energy use, water use, and recycling/materials management.
 - There are data collection worksheets for many property types. Depending on the operations of your property (and whether you have a single building or many on your property), you may choose to include some or all of the following: worship facility, social meeting hall, residence hall/dormitory, and k-12 school.
- With the data collection worksheet in hand, collect property use data and utility bills in preparation to set up a Portfolio Manager account.
- [Create an account.](#)
- Learn more and find all Portfolio Manager [training and tech support](#).
- After you enter energy data, a 1 - 100 ENERGY STAR® score will compare your property to other U.S. Worship Facilities. A 75 or higher score is eligible for ENERGY STAR certification.
- You will also see your EUI or Energy Use Intensity which is approximately energy use/sq.ft. The national Worship Facilities median is 58.4 for Source EUI and 30.5 Site EUI. Many congregations can do better than the national median EUI.

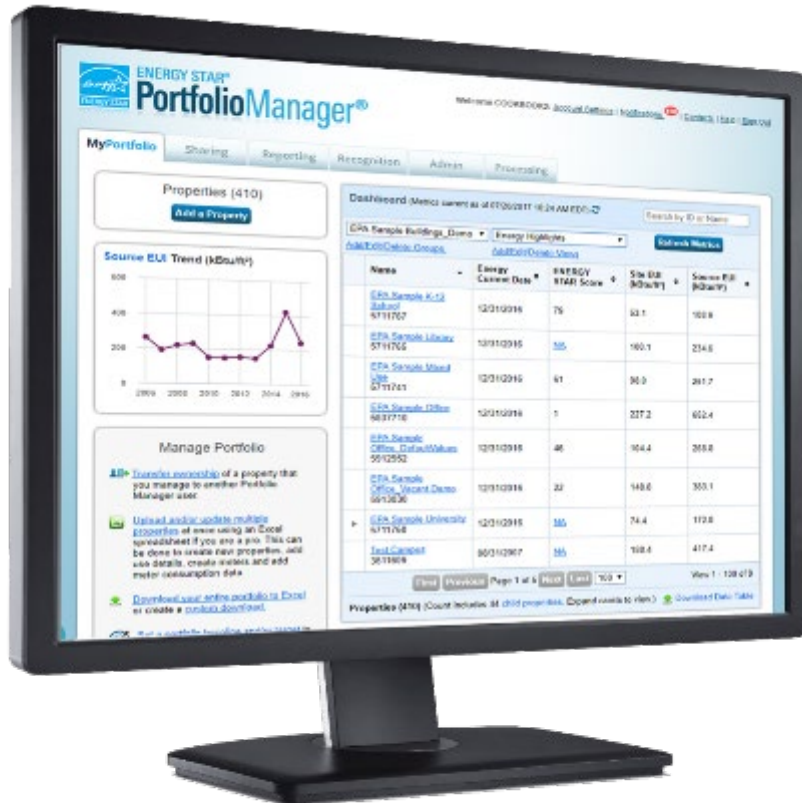


Energy and Water Efficiency Checklist for Worship Facilities | 1





ENERGY STAR® PortfolioManager®



- 300,000+ buildings last year
 - >2000 worship facilities
- Nearly 25% of all U.S. floorspace
- 1,000 properties added daily

energystar.gov/buildings/benchmark



1-100 ENERGY STAR Score in Portfolio Manager

One simple number understood by ALL stakeholders

75 or higher is eligible for certification

Available in Spanish in July 2024



Management Tool



Assess whole building energy and water consumption, plus waste



Track green power purchase



Share/report data with others



Track changes in energy, water, greenhouse gas emissions, and cost over time



Create custom reports



Apply for ENERGY STAR certification

Hundreds of metrics, including:



Energy use
Source, site,
weather
normalized,
demand



Water use
Water use
intensity,
Water Score
(for Multifamily)



**Waste &
Materials**
Waste intensity,
diversion rate



**1-100
ENERGY
STAR score**



**GHG
emissions**
Indirect,
direct, total,
avoided

Standard and custom reports help leadership understand energy cost trends



Portfolio Average Energy Cost Intensity

-0.15 ▶ Change in Average Energy Cost Intensity

1.39 ▶ Current Average Energy Cost Intensity

1.54 ▶ Baseline Average Energy Cost Intensity

Properties Included: 27

Your Properties Compared to the National Median Energy Cost Intensity

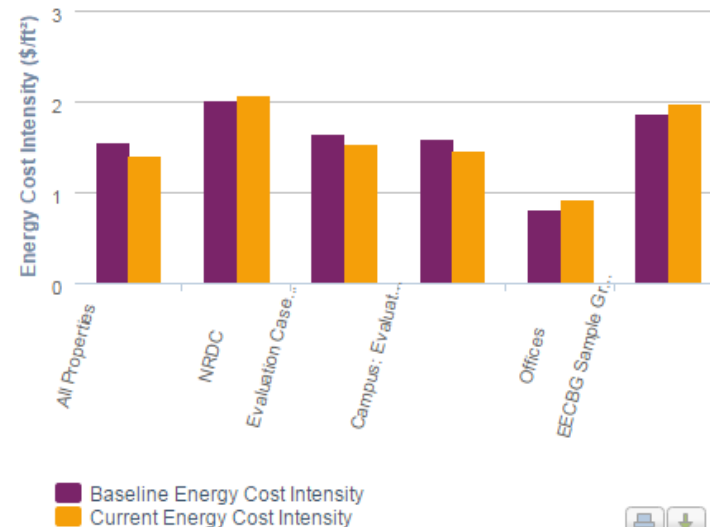


- Energy Cost Intensity Equal to or Below the Median
- Energy Cost Intensity Above the Median



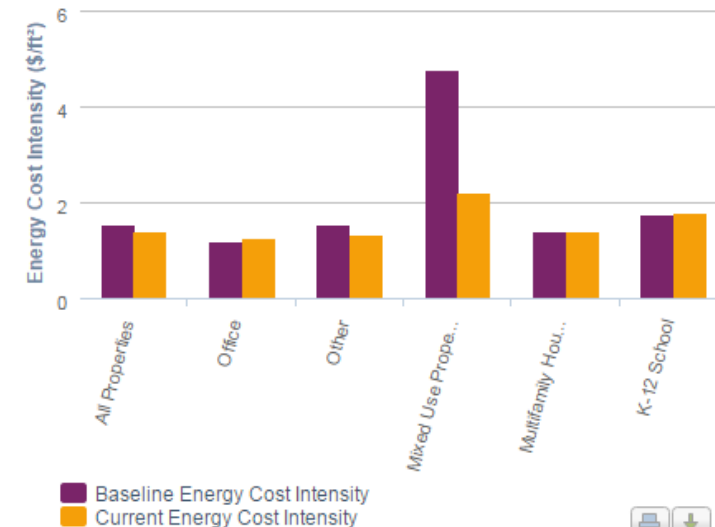
Energy Cost Intensity by Group

[Select Groups](#)



Energy Cost Intensity by Property Type

[Select Types](#)



ENERGY STAR Training Center

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ENERGY STAR Portfolio Manager®

Charts & Graphs

ENERGY STAR Performance Documents

Templates & Reports (9)

How to Respond to a Data Request Manager®

ENERGY STAR

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- 3-7 minute training videos on YouTube
- Download step-by-step training guides, slides, and technical reference documents
- FAQs and Highly rated Help Desk

energystar.gov/training



Cost-Free Verification of ENERGY STAR Applications

Worship facility certification

- 500 eligible worship facilities annually
- Currently 137 are certified
 - 59 (43%) IN MICHIGAN thanks to MiPL
- *Data verified* by a Licensed Professional Engineer or Registered Architect
 - LP may be a congregational member, university staff

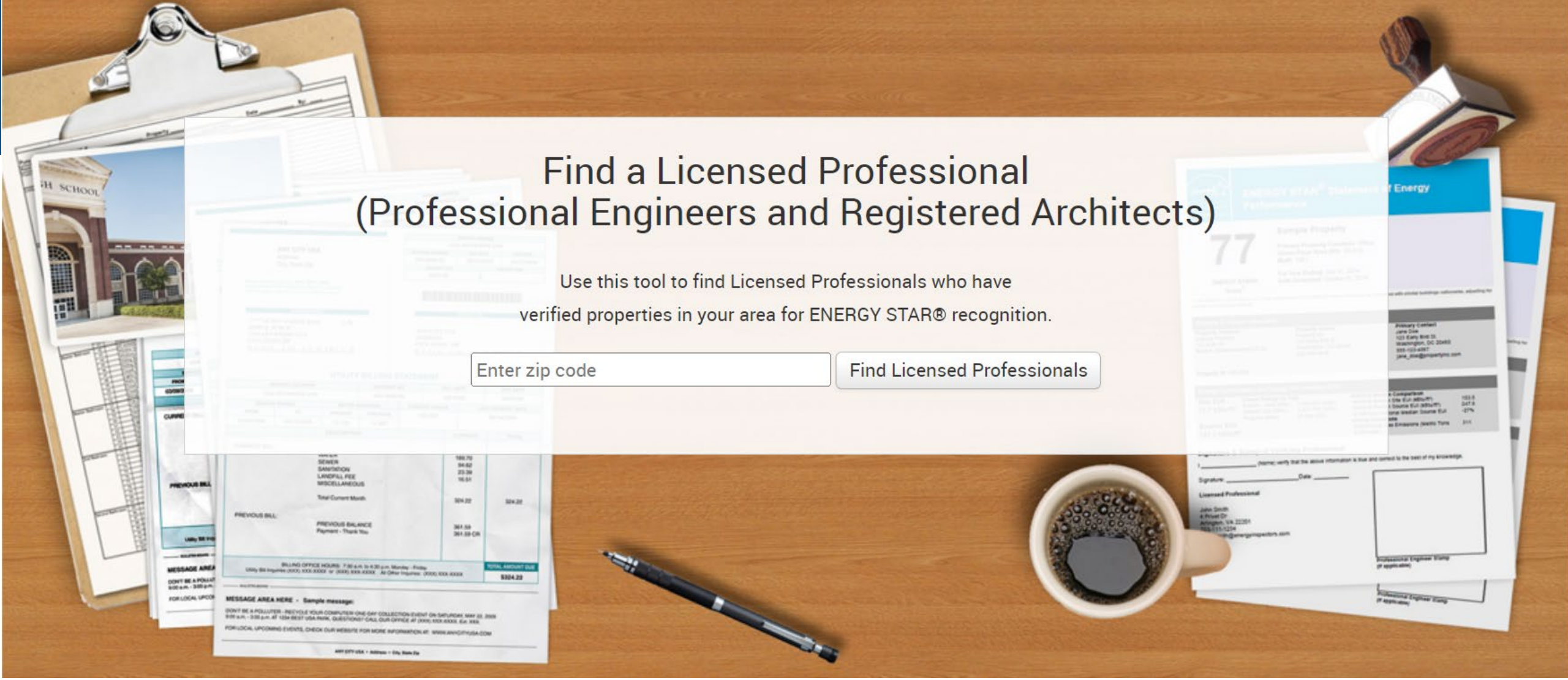


Licensed Professional Finder

energystar.gov/buildings/lp_finder

Find a Licensed Professional (Professional Engineers and Registered Architects)

Use this tool to find Licensed Professionals who have verified properties in your area for ENERGY STAR® recognition.





New opportunity: ENERGY STAR *NextGen*TM Certification

Available in September 2024 to existing commercial and multifamily buildings that model a combination of energy efficiency, electrification, and renewable energy.

[Learn more about EPA's proposed ENERGY STAR NextGen Certification](#)



ENERGY STAR NextGen Certification

1. **Building must achieve 1–100 ENERGY STAR score of 75 or higher and meet all criteria associated with ENERGY STAR certification.**
2. **Building must obtain at least 30% of the total energy it consumes from renewable sources.**
3. **Building's direct (i.e., onsite) GHG emissions intensity must be within a specified level, normalized for both the type of building and the climate/weather.**

EPA and ENERGY STAR Resources



Guide to Purchasing Green Power

Renewable Electricity, Renewable Energy Certificates, and On-Site Renewable Generation

EJSCREEN

Check out EPA's environmental justice screening and mapping tool today!

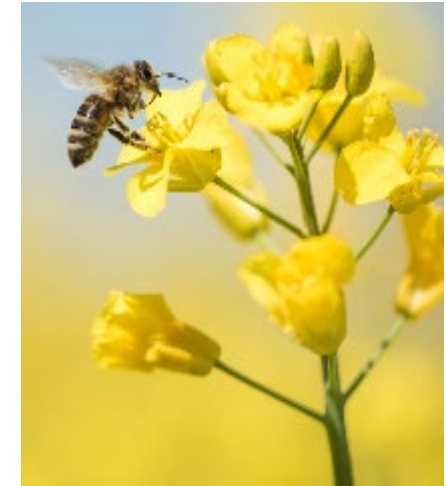
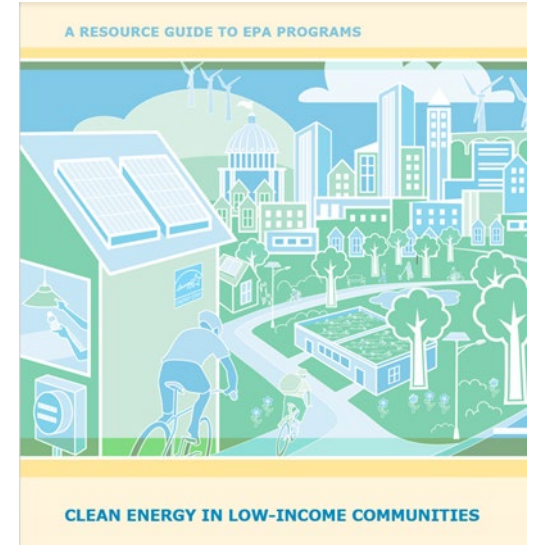
Enter a location:

e.g.: city, state, zip

Search



epa.gov/saferchoice



[See All EPA Resources for Congregations](#)



EPA and ENERGY STAR Resources

The links...

- [ENERGY STAR Congregations homepage](#)
- [ENERGY STAR Products](#)
- [EPA Supporting Healthy Houses of Worship Guide](#)
- [EPA WaterSense homepage](#)
- [EPA Stormwater Solutions for Congregations Guide](#)
- [EPA Reduce, Reuse, Recycle homepage](#)
- [EPA Sustainable Management of Food](#)
- [EPA Safer Choice Cleaning Products](#)
- [EPA Pollinator Protection](#)





EPA's

Green Power Partnership

An Environmental Choice for Your Organization



Guide To Purchasing Green Power

- How to get started...
- epa.gov/greenpower/guide-purchasing-green-power

- Renewable Energy Power “Toolbox”
 - Project development
 - Policy considerations
 - Financing approaches
 - Project economics and evaluation
 - RFP and contracts guidance
 - Consumer claims guidance
 - epa.gov/repowertoolbox

Guide to Purchasing Green Power

Renewable Electricity, Renewable Energy Certificates, and On-Site Renewable Generation

U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy



Healthy Houses of Worship

- Asthma & Triggers
- Drinking Water, Heat Events
- Buses & Vehicle Idling
- Carbon Monoxide, Radon, Radiation
- Indoor Air Quality/Ventilation
- Chemical Management, Lead, Mercury
- Mold & Moisture Control
- PCBs in Caulk & Fluorescent Light Ballasts
- Pesticides & Pest Management
- Facility Assessment
- Federal Grants, Financial Assistance



Supporting Healthy Houses of Worship

Effective, affordable measures to protect the health of congregations and staff



OCTOBER 2019

Saving the Rain: Green Stormwater Solutions for Congregations

A guide to enhance worship facility grounds with green stormwater management practices and landscaping to:

- Reduce or eliminate local stormwater fees
- Improve air and water quality
- Provide habitat for wildlife
- Improve aesthetics of the site and offer a peaceful outdoor sanctuary

epa.gov/nps/saving-rain-green-stormwater-solutions-congregations

Saving the Rain

Green Stormwater Solutions for Congregations



Indoor Air Quality (IAQ) epa.gov/indoor-air-quality-iaq

We spend about 90% of our time indoors



*IAQ Design Tools
for Schools*

Indoor Air Quality (IAQ)



Wildfires Could Impact Your Indoor Air Quality

Learn how to reduce your exposure to wildfire smoke inside your home.

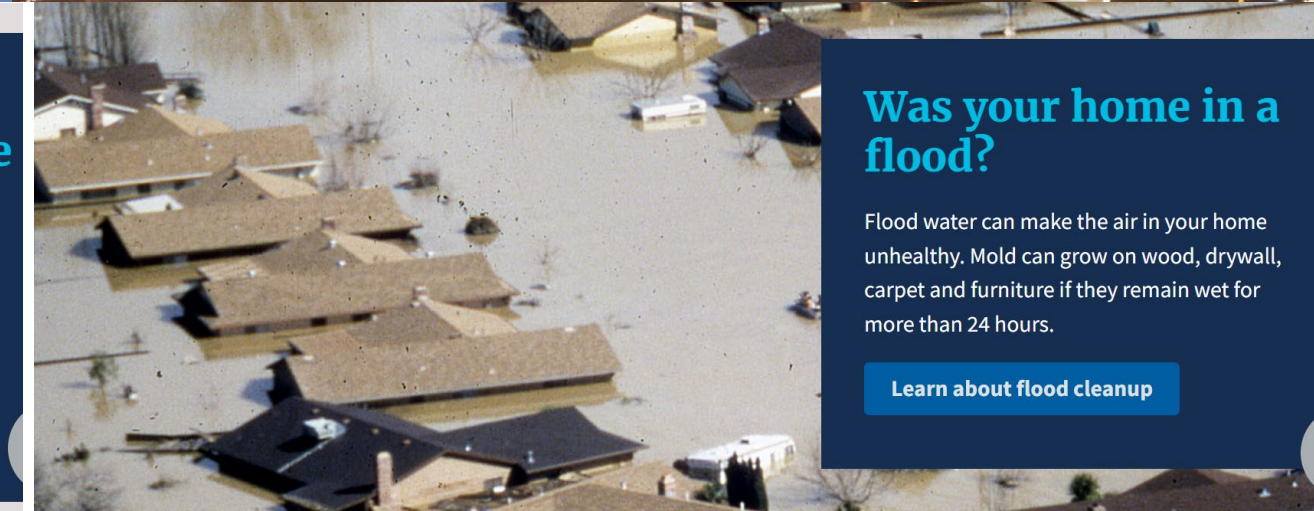


Radon is a health hazard with a simple solution

Test. Fix. Save a life.

Test your home today!

[Find a Radon Test Kit](#)



Was your home in a flood?

Flood water can make the air in your home unhealthy. Mold can grow on wood, drywall, carpet and furniture if they remain wet for more than 24 hours.

[Learn about flood cleanup](#)

[AirNow.gov](https://www.airnow.gov) from EPA, State & Local Partners



[AirNow](#)

[AQI & Health](#)

[Fires](#)

[Maps & Data](#)

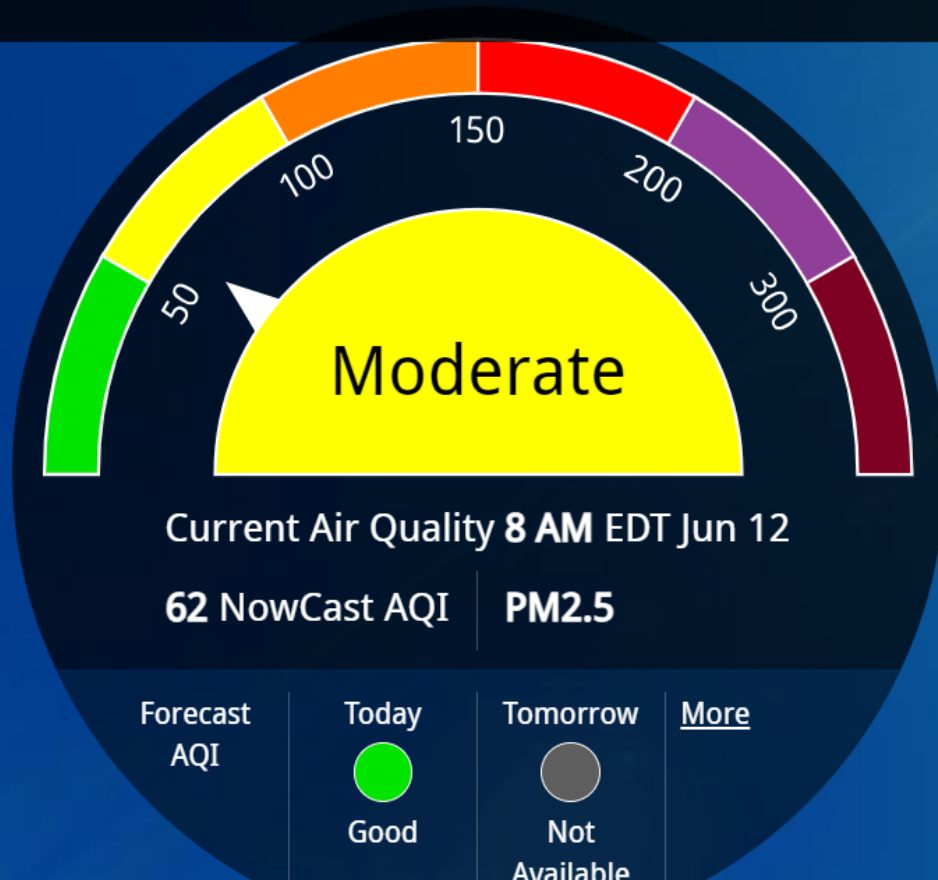
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☁ 64°F



ZIP Code, City, or State



Livonia, MI

Detroit Reporting Area

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[Recent Trends](#)

AQI Legend



ENERGY STAR Assistance

- Visit: www.energystar.gov/buildingshelp
- Guidance on ENERGY STAR certification
www.energystar.gov/buildings/building_recognition/building_certification
- “*Portfolio Manager 101*” training, other live and recorded webinars, YouTube videos, “How-To” PDFs and more resources www.energystar.gov/buildings/training





Follow up support

Questions?

Contact us at:

energystar.gov/BuildingsHelp

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