



GREEN WORKS ORLANDO ENERGY AUDIT 101



FROM BENCHMARKING TO AUDITING

Most buildings could function more efficiently, as evidenced by ENERGY STAR benchmarking scores under 100, but since they are as unique as people, they need to be independently analyzed to determine which improvements could most cost-effectively enhance their energy performance.

WHAT IS AN ENERGY AUDIT?

An energy audit is a detailed assessment of how a specific building can improve its performance through a review of base building systems and equipment that use energy, such as lighting systems, HVAC units, service hot water, plug load and the building envelope. Following this assessment, building owners are provided with an audit report that captures areas where energy is being wasted, identifies capital improvements that will make the building more efficient and provides owners with actionable information on the financial impacts of the range of these improvements, including an estimate of project costs, calculated savings and payback period.

The energy cost and greenhouse gas emissions savings identified by energy audits are typically in the range of 10 to 40 percent. However, the only way to unlock those savings is to have an expert perform the analysis and identify which measures to take. Something can be done to improve performance in almost all existing buildings.

WHAT ARE THE BENEFITS?

BUILDING OWNERS AND MANAGERS rarely conduct energy audits, which means they don't know how much they could be saving through cost-effective upgrades. Audits show them, measure by measure, the business case for a set of optional upgrades that will bring better energy performance, increased equipment reliability and net operating incomes. This means that building owners and managers are saving money not only through lower utility bills, but also by reducing maintenance and operating costs. These improvements can also lead to increased property value.

BUYERS AND TENANTS are able to live and work in a more comfortable environment. In energy-efficient buildings, thermostats turn off and on at the appropriate times, the lighting is more conducive to a productive work environment and indoor air quality is better for people's health. All of these factors make energy-efficient buildings more appealing for prospective buyers and tenants.

THE ENTIRE CITY can experience increased economic development since widespread energy auditing directly creates jobs for credentialed energy auditors and indirectly creates engineering, contractor and other skilled building professional jobs. Furthermore, the local community can benefit from reduced carbon pollution, improved outdoor air quality and increased resilience to extreme weather effects.

GREEN WORKS ORLANDO GOALS BY 2040



Reduce city-wide energy use intensity by 20%



Reduce greenhouse gas emissions by 90%



Ensure 100% new construction are green buildings



Ensure that 100% of electricity is from renewable energy (by 2050)



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HOW IS AUDITING PERFORMED?

Owners of buildings with benchmarking scores under the Orlando building performance average will submit a summary audit report that certifies an audit was complete by a certified auditor and/or licensed professional. Audit periods for lower performing buildings will repeat every 5 years so that buildings can achieve continual improvement as technologies advance.

IS THERE A STANDARD AUDIT?

ASHRAE has created the industry standards for audits. ASHRAE defines three different levels of audits, ASHRAE Levels 1, 2 and 3, which increase in detail and accuracy. An ASHRAE Level 1 is a walk-through, while Level 2 is a “commercial grade” audit, and level 3 is an “investment grade” audit. Typically, the audits performed will be ASHRAE Level 2, the industry standard.

HOW MUCH DOES AN AUDIT COST?

An ASHRAE Level 2 audit will cost an average of \$0.15 per square foot for a building of more than 25,000 square feet, but varies based on the complexity of the building; a warehouse will be much cheaper to audit than an office building, for example. The cost of an audit is about one percent of annual operating costs for most buildings, so if an audit were done every 10 years, it would amount to an increase in the range of 0.1% in operating costs.

Building owners typically choose to implement a number of items identified by the audit based on estimated payback. Below are a few scenarios that illustrate the range of costs. In the policy, we provide the option to use the free OUC commercial audits (ASHRAE Level 1), therefore eliminating the upfront cost to the building owner.

EXAMPLES

| Scenario | Building Size (sq. ft.) | Building Complexity | Audit Cost |
|----------|-------------------------|---------------------|------------|
| 1 | 40,000 | Low | \$4,000 |
| 2 | 40,000 | Medium | \$6,000 |
| 3 | 40,000 | High | \$8,000 |
| 4 | 100,000 | Low | \$10,000 |
| 5 | 100,000 | Medium | \$15,000 |
| 6 | 100,000 | High | \$20,000 |
| 7 | 1,000,000 | Low | \$100,000 |
| 8 | 1,000,000 | Medium | \$150,000 |

NEW YORK CITY, NY: LOCAL LAW 87 (GREENER, GREATER BUILDINGS PLAN)

New York City requires that all commercial and multifamily buildings over 50,000 square feet must undergo an ASHRAE Level 2 energy audit every 10 years. Buildings that have been ENERGY STAR certified in two of the three years prior to the reporting deadline or achieved LEED for Existing Buildings certification are exempted. All city government owned buildings must undergo all retrofit measures identified in an audit that have a seven-year payback or better.

SAN FRANCISCO, CA: EXISTING COMMERCIAL BUILDINGS ENERGY PERFORMANCE ORDINANCE

San Francisco requires that all buildings greater than 50,000 square feet must undergo an ASHRAE Level 2 audit and all buildings 10,000 to 49,999 square feet must undergo an ASHRAE Level 1 audit every five years. Buildings that have been ENERGY STAR certified in two of the three years prior to the reporting deadline or achieved LEED for Existing Buildings certification are exempt.

[1] “Covered Properties” are typically all properties over a specified size, consistent with those covered under other mandates, such as Benchmarking & Disclosure.

[2] American Society of Heating, Refrigeration, and Air-Conditioning Engineers

For more information about how you can participate in energy auditing, visit orlando.gov/greenworks.



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