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The Licensed Professional's Guide:

Understanding the Roles and Requirements for Verifying Commercial Building Applications for ENERGY STAR® Certification

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Introduction

Energy use in commercial buildings accounts for nearly 20 percent of U.S. greenhouse gas emissions at a cost of more than \$100 billion per year. Through ENERGY STAR®, the United States Environmental Protection Agency (EPA) works with owners and managers of our nation’s commercial buildings to help them strategically manage their facilities’ energy performance, cut energy use, lower utility bills, and reduce greenhouse gas emissions. An important part of this effort is EPA’s recognition of top performance.

ENERGY STAR certified buildings use 35% less energy and emit 35% less carbon dioxide than average buildings.

More than a dozen types of commercial buildings, including office buildings, K-12 schools, and retail stores, can earn EPA’s mark of superior energy efficiency – the ENERGY STAR, which is recognized by 85 percent of American consumers. Commercial buildings that earn the ENERGY STAR must perform in the top 25 percent of buildings nationwide compared to similar buildings, and their performance must be verified by a licensed professional.

To determine a building’s energy performance and how it compares to similar buildings, organizations and individuals can use EPA’s free-online benchmarking tool, Portfolio Manager® (www.energystar.gov/benchmark). Once all the necessary data is input into Portfolio Manager, the benchmarked building can receive an ENERGY STAR score. The 1-to-100 ENERGY STAR score accounts for differences in operating conditions, regional weather, and other important considerations. Buildings that receive an energy performance score of 75 or higher are eligible for ENERGY STAR certification.

Purpose of this Guide

Once a building has achieved an ENERGY STAR score of 75 or higher in Portfolio Manager, a representative of the building (typically the building owner, manager, or building engineer) may apply for the ENERGY STAR. As part of the application process, the applicant must have a Licensed Professional (LP) sign and stamp his/her ENERGY STAR Data Verification Checklist for Certification (hereafter referred to as “the application”), validating that all of the submitted information is correct.

The purpose of this guide is to provide LPs with step-by-step instructions on how to correctly verify the reported data and assess indoor environmental quality.

The role of the LP is to verify that all energy use is accounted for accurately, the building characteristics have been properly reported, and indoor environmental quality has not been compromised in pursuit of energy conservation. By verifying the completeness and correctness of the application submitted to the EPA, the LP helps to ensure the integrity of the ENERGY STAR certification.

Eligibility Criteria for Individuals Verifying Applications for ENERGY STAR

For the purpose of verifying applications for ENERGY STAR certification, EPA requires an LP to meet the following qualifications:

- Possess a current license in any U.S. State, Canadian Province, or territory of the U.S. or Canada as a Professional Engineer (PE) or Registered Architect (RA) and be in good standing;
Note: the LP does not need to hold a PE or RA license in the state in which the building he/she is verifying is located.
- Have a working knowledge of building systems, ASHRAE Standard 55, ASHRAE Standard 62.1, and the IESNA Lighting Handbook; and
- Understand all applicable state and territorial engineering and architectural licensure laws, professional ethics requirements, and regulations prior to offering or performing services in a jurisdiction.

Only LPs meeting these qualifications are eligible to verify commercial building applications for ENERGY STAR certification. LPs are to provide unbiased services and are bound by law to uphold strict ethical standards. They must verify that the information contained in the application is accurate to the best of their knowledge, based on a site visit to the building, their technical expertise, and a good faith effort to comply with the instructions provided in this guide.

Should an LP be found to have falsified information on a building's application for ENERGY STAR Certification, EPA reserves the right to pursue recourse through the engineering and architectural professional licensing authorities granting that individual's license, and under Federal law. Title 18 USC Section 1001, Crimes and Criminal Procedure, Fraud and False Statements, holds that:

Whoever, in any matter within the jurisdiction of the executive, legislative, or judicial branch of the Government of the United States, knowingly and willfully – (1) falsifies, conceals, or covers up by any trick, scheme, or device a material fact; (2) makes any materially false, fictitious, or fraudulent statement or representation; or (3) makes or uses any false writing or document knowing the same to contain any materially false, fictitious, or fraudulent statement or entry; shall be fined under this title, imprisoned not more than 5 years ... or both.¹

¹ Full text of Title 18 USC Sec 1001 is available at: <http://uscode.house.gov>

Spot Audits

EPA began conducting spot audits of applications for ENERGY STAR Certification in the summer of 2014. With the growing market demand for ENERGY STAR Certification, it is necessary to take additional measures to protect the integrity of the ENERGY STAR brand and work to ensure that only buildings with superior energy performance are granted the ENERGY STAR. On a regular, ongoing basis, EPA randomly pulls applications in the review process to undergo a spot audit. Examples of information that EPA asks for include:

- Copies of all the utility bills and invoices for fuel purchases within the period of performance;
- Documentation and/or explanation of how the building use details were verified; and
- Documentation and/or explanation of the measurement and calculation methods used to assess the indoor environmental quality.

At the time an application is selected for audit, EPA sends audit documents and instructions on how to complete them to the LP who verified the application. The LP then has two weeks to submit all audit materials to EPA. As a best practice, records related to an application for ENERGY STAR certification, including utility bills and documents used to support the verification of building use details, should be kept for two years from the date on which the ENERGY STAR was awarded.

Help for Public Schools and Worship Facilities

Many K-12 schools, as well as Houses of Worship, qualify for ENERGY STAR certification, but are unable to pursue certification due to lack of budget to pay for the verification by an LP. Because these buildings are often cornerstones of the local community and offer an opportunity to showcase and communicate effective energy management and environmental protection, EPA has initiated a program in which LPs can volunteer to provide “free of charge” verifications for the ENERGY STAR certification to K-12 schools and Worship Facilities.

LPs can find non-profit organizations of all types who seek pro bono verification services by going to the “matchmaking” website: <https://theoneplus.org/>.

LPs who have volunteered to provide free ENERGY STAR verifications for K-12 schools and/or Worship Facilities are listed on the following website:

http://www.energystar.gov/index.cfm?fuseaction=pe_directory.showPEsearchK12

LPs wishing to be listed in the volunteer directory should email the ENERGY STAR team at spp@energystar.gov.

Additional Resources

For additional information on the ENERGY STAR Commercial Buildings Program and benchmarking buildings with Portfolio Manager, visit the ENERGY STAR Buildings page at www.energystar.gov/buildings.

For answers to specific questions, submit a question through the ENERGY STAR Buildings FAQ page at www.energystar.gov/BuildingsHelp.

The ENERGY STAR Application Process

The application process for ENERGY STAR certification is completed online within Portfolio Manager. Generally, the applicant (typically a representative of the building such as the owner, manager, or building engineer) enters his/her property information and energy consumption data into Portfolio Manager and completes the first seven steps outlined below prior to the LP's site visit to the property. In some cases, the LP may be involved with the ENERGY STAR certification application from inception to award, completing all of these steps. Whether assisting through the process or just performing a site visit and verification, it will be useful for the LP to be familiar with all stages of the application process.

1. **Enter Data** – Log in to Portfolio Manager and enter the required whole building operational and energy information, including at least 12 consecutive months of energy data for all active meters that account for all energy use in the building. The [Eligibility Requirements for the 1-100 ENERGY STAR score](#) contain more information on the data that is needed.
2. **Click on “Eligible to Apply for the ENERGY STAR”** – In Portfolio Manager, on the “Property Summary” page, look in the upper right hand corner of the screen for the heading “Eligibility for the ENERGY STAR.” If the property is eligible to apply for the ENERGY STAR, meaning that it earned a score of 75 or higher, a link will appear. Click on the link “Eligible to Apply for the ENERGY STAR.”
3. **Enter Property Information** – Provide the following information about the property in the appropriate fields: property description, property name for listing display, and property profile.
4. **Choose Contacts for Application** – Select a primary contact for the application, a signatory, and an LP in the Contact Information for Your Application section.
5. **Enter Award Information** – Select the preferred type of complimentary decal and contact information for delivering the award.
6. **Review Eligibility Details** – It is important to review the eligibility details on the application before submission. Select the appropriate Period Ending Date and review and correct any ENERGY STAR eligibility alerts that have been flagged.
7. **Generate the Application for Signatures** – Generate the application for signatures by clicking on **Generate and Download Current Application for Professional Signatures**. Ensure that there is a tracking number in the bottom right-hand corner of the Statement of Energy Performance.

LP

8. **Conduct a Site Visit – Verifying Data and Assessing Indoor Environmental Quality** – An LP conducts a site visit of the building. The LP may engage a representative to conduct all or part of the site visit while under his or her direction and control. However, the application must still bear the stamp and signature of the LP, who remains responsible for all work performed by others under his or her direction and control.

During the site visit, the LP or one of his/her designated representatives should have a copy of the application. The LP must check and verify the reported information.

The application provides a summary of a property's physical and operating characteristics, as well as its total energy consumption. It also includes the attestations of the building meeting certain indoor environmental conditions. The LP must assess the indoor environmental conditions and determine whether the building has acceptable outside air ventilation, thermal conditions, and illumination.

For an average building, it should typically take an LP about one full day to conduct the site visit and complete the verification of the information on the application.

LP

9. **Sign Documents** – The applicant must address any insufficiencies and correct errors the LP identified during the site visit. Once the information in the application accurately reflects the building operations and performance, and has been verified, the LP must complete, sign, date, and seal the application.

10. **Submit Application** – Enter the tracking number from the signed application in Portfolio Manager (in the Application Tracking Number box at the top of the screen) and check the necessary boxes to confirm that the application has been signed and stamped by the signatory and LP. Attach a signed PDF of the application. Make sure the LP stamp, along with any signatures, is visible on the PDF. If the LP stamp is not visible on the scanned version of the application submitted to EPA, EPA will check the website of the State licensing body to verify that the LP's license is current. Validate your credentials by entering your Portfolio Manager username and password, e-sign the application, and submit to EPA.

11. **Respond to EPA Questions** – Upon EPA's receipt of the application, the Primary Contact will receive an email notification. If there are any issues or questions regarding the application, the Primary Contact (or in some cases the LP) may be asked to provide additional information and clarification.

12. **Receive Award** – Within 4-6 weeks of EPA approval of the application for ENERGY STAR certification, the Award Recipient will receive the ENERGY STAR award and congratulatory letter. If EPA denies the application, the Primary Contact will be notified and provided with recommendations for further action.

The year of the ENERGY STAR Certification is the calendar year in which it was awarded.

A building that has earned the ENERGY STAR becomes eligible to re-apply one year after the date of the last energy data entry included in the Statement of Energy Performance submitted as part of the previously awarded application.

Verifying the Application for ENERGY STAR Certification

This section describes, in detail, the process by which the LP should verify the accuracy of each element included on the application. The application also includes detailed questions to assist the LP in conducting his/her checks.

It is the responsibility of the LP to verify all of the following data elements and ensure that the whole building is represented in the application.

- When reviewing the application, the LP **must check each box and/or write-in a note confirming the correctness of each line item.**

Summary Information

✔ Property name

The name listed is the official, complete name to be displayed in the Registry of ENERGY STAR Certified Buildings and Plants

✔ Primary function

The overall property function is correct, per EPA's property use definitions.

✔ Gross floor area

This value is the total floor area of the whole building as measured from the principal exterior surfaces of the enclosing fixed walls. It is the sum total of all the building's property uses reported on the application, and it should represent the whole building.

✔ Year built

The year built is the year in which construction of the building was completed. In some cases, this may be the year in which a major renovation was completed. The year built is not factored into the ENERGY STAR score; however EPA uses this information for data analysis on the age of buildings earning ENERGY STAR certification.

✔ For year ending

This date is the last day of the 12 month period for which the application is being submitted. This date is selected by the applicant and cannot be more than 120 days before the date of submission.

✔ **Date Application Becomes Ineligible**

This date is 120 days after the For Year Ending date. Note: LPs should work with the applicant in advance to ensure that there is enough time before the Date Application Becomes Ineligible to conduct the site visit, complete the application, and submit the application.

Property and Contact Information

✔ **Property Address**

The street address of the property is complete and correct.

✔ **Property Owner**

The name and contact information is complete and correct.

✔ **Primary Contact**

The name and contact information is complete and correct.

✔ **Property ID**

The property ID is the correct ID number generated by Portfolio Manager specifically for this property.

Basic Property Information

✔ **Property name**

The name listed is the official, complete name to be displayed in the Registry of ENERGY STAR Certified Buildings and Plants.

✔ **Primary function**

The overall property function falls into one of the following categories of operation, according to EPA's definitions of each property type. If the primary function of the property does not fall into one of these categories as defined by EPA, then the property is not eligible for ENERGY STAR certification.

- Bank/Financial Institution
- Courthouse
- Data Center

- Hospital (General Medical and Surgical)
- Hotel
- K-12 School
- Office
- Multifamily Housing
- Retail Store
- Senior Care Community
- Supermarket
- Warehouse (refrigerated or non-refrigerated)
- Worship Facility

For a definition of each property function, refer to this list of property types eligible to receive a 1-100 ENERGY STAR score: <http://www.energystar.gov/buildings/facility-owners-and-managers/existing-buildings/use-portfolio-manager/identify-your-property-type-0>.

✔ **Location**

The full address, including the 5-digit zip code, is complete and accurate.

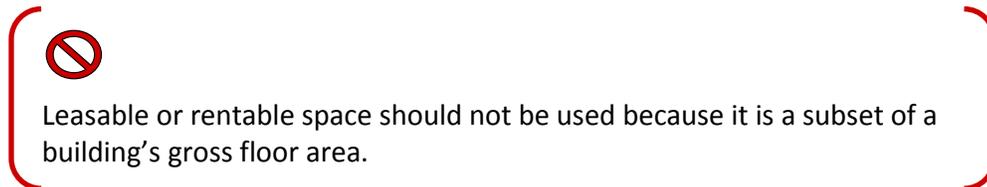
- ▢ Only commercial buildings located in the U.S. and its territories, or those owned by the U.S. government located in foreign countries, are eligible to earn the ENERGY STAR.

✔ **Gross Floor Area**

The Gross Floor Area is the total floor area, as measured from the principal exterior surfaces of the enclosing fixed walls. It is the sum total of all the building's property uses reported on the application, and it should represent the whole building.

Additionally, the LP must ensure that the reported area of each of the property use types total the whole building's gross floor area.

- ▢ For atriums, only the base floor area that they occupy should be counted. Interstitial (plenum) space between floors should not be included in the total gross floor area.



✔ **Annual Occupancy** *[applicable to Offices, Hotels, and K-12 Schools]*

Over the course of the 12-month period being assessed, a building designated as an Office or Hotel must have had an average occupancy rate of greater than 50 and 55 percent, respectively, and a K-12 School must have been open for at least 8 months.

- Office properties with vacant space should enter the vacant square footage as a separate “Office” property use entry, with zero weekly operating hours, zero workers, and zero personal computers.

If the occupancy level in the building fluctuates, calculate the average occupancy over a period of time. For example, if the building was at 70% occupancy for the first half of the year, then at 80% occupancy for the second half of the year, you would calculate the occupancy level to be 75% occupancy for the year.

✔ Number of Buildings

EPA’s 1 – 100 ENERGY STAR scores for most building types, the exceptions being Hospitals, Hotels, K-12 Schools, Senior Care Communities and Multifamily Housing, are based on statistical analyses of individual, single structures. For an accurate ENERGY STAR score, it is important that the function and structure of the building meet EPA’s definitions.

Campus of buildings: The following property types may apply as a campus of multiple buildings. All buildings that support their primary function should be combined and entered as a single property. The inclusion of all of the campus’s buildings must be verified by the LP on the application.

- Hotel
- K-12 School
- Hospital
- Senior Care Community
- Multifamily Housing

Single Building: The following property types must apply as single buildings. The LP must verify that the property is a **single, whole, structure**. If a building has multiple towers connected by common concourse levels or common areas that cannot truly be separated between the towers, then EPA considers it to be a single structure. A series of buildings situated closely together as a plaza or campus, even if sharing a common heating or cooling source, or sharing an energy meter, are **not** considered a single structure.

- Bank/Financial Institution
- Courthouse
- Data Center
- House of Worship
- Office
- Retail Store
- Supermarket
- Warehouse

Is this a single structure?

Examples:

- A building with two towers that share four stories of common space that includes an atrium, cafeteria, and seamless connections between two towers is considered a single structure because there is a complete and indivisible connection.
- Two office towers built on top of an underground parking garage may be considered an entire, single structure **OR** each of the towers may be benchmarked individually, provided they have complete, measured energy data.
- An office complex that consists of two buildings connected by an outdoor covered walkway is **not** considered a single structure because the buildings can be easily separated. Each of these buildings must be separately metered and entered as two distinct buildings in Portfolio Manager.
- Two office towers that have no physical connection, but share a central plant and energy meters, are **not** considered a single structure because there is no physical, structural connection.

Verifying the Indoor Environmental Quality

As part of the review of the application for ENERGY STAR certification, the LP is required to use his/her professional judgment and the guidance of industry standards to confirm that certain measures of indoor environmental quality have not been compromised in pursuit of energy conservation practices.

This assessment requires an onsite evaluation using industry standards as a guide to measure specific attributes of indoor environment quality. This will require that the LP has a working knowledge of building HVAC and lighting systems, as well as the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) Standards 55², 62.1³ and the Illuminating Engineering Society of North America's (IESNA) Lighting Handbook⁴.

This assessment requires measurement of the outside air ventilation, temperature, humidity, and lighting levels in a representative sample of building spaces throughout the building. Representative spaces may be determined by space types (e.g. private offices, common areas), usages (e.g. tenants), or system types (in multiple system buildings). Note that although simple observation of building design,

² ANSI/ASHRAE [Standard 55-2013](#) -- *Thermal Environmental Conditions for Human Occupancy*

³ ANSI/ASHRAE [Standard 62.1-2016](#) -- *Ventilation for Acceptable Indoor Air Quality*

⁴ Illuminating Engineering Society [Lighting Handbook](#), 10th edition

system condition, operation, and control, and review of previous testing and balancing reports, maintenance logs, and occupant complaint records may be useful, they are not sufficient to make this assessment.

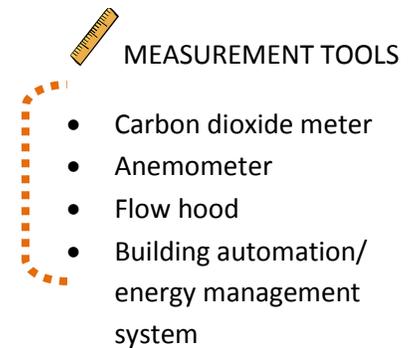
This assessment is also not intended to be an evaluation of compliance with these industry standards in whole, local building codes, or a comprehensive assessment of the building indoor air quality.

Outside Air Ventilation

The LP shall verify that minimum outside air ventilation rates are provided according to the most recent version of *ANSI/ASHRAE Standard 62.1, Ventilation for Acceptable Indoor Air Quality*.

For mechanically ventilated buildings, the LP shall confirm minimum outside ventilation rates by any of the following;

- direct airflow measurements per *ANSI/ASHRAE Standard 62.1, Section 6.2, the Ventilation Rate Procedure*, or
- CO₂ concentration measurements per *ASHRAE 62.1 Appendix C*, and *ASTM D6245 Standard Guide for Using Indoor CO₂ Concentrations to Evaluate Indoor Air Quality and Ventilation*, or
- detailed airflow calculations derived from as-built equipment specifications, and physical inspection of system operation and control



For naturally ventilated buildings, the LP shall follow *ASHRAE 62.1, Section 6.4, Natural Ventilation Procedure* to confirm the minimum outdoor air opening and space configuration requirements.

Low rise multifamily housing (3 stories or less) may use *ASHRAE 62.2, Ventilation and Acceptable Indoor Air Quality in Low-Rise Residential Buildings*. Hospitals and Senior Care Communities may use *ASHRAE Standard 62.1*, or *ANSI/ASHRAE/ASHE Standard 170: Ventilation of Health Care Facilities - 2013*.

For building occupancy types not covered by these standards, buildings with physical constraints that make it infeasible to provide these minimum outside air rates, as well as spaces that are inaccessible to the LP (e.g. individual apartments) the LP shall use their professional judgement to confirm that outside air ventilation has not been compromised in pursuit of energy conservation. The LP should document their evaluation of these situations in the application.

- In general, physically constrained buildings measuring outside airflow of less than 10 CFM per person, or CO₂ concentrations in excess of 700 ppm above ambient merit additional evaluation and discussion with building owners and management.

Thermal Environmental Conditions

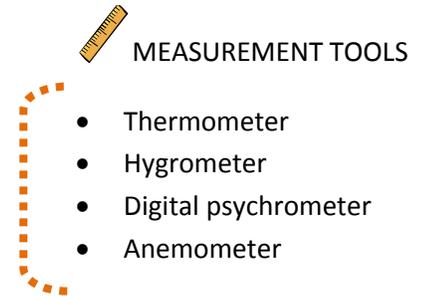
The LP shall verify that acceptable thermal environmental conditions are provided according to the most recent version of *ANSI/ASHRAE Standard 55 Thermal Environmental Conditions for Human Occupancy*.

ASHRAE Standard 55 specifies combinations of temperature, humidity, and air movement conditions to produce acceptable thermal comfort conditions for a majority of occupants, given occupant activity and clothing insulation.

The LP should measure the dry bulb temperature, relative humidity, radiant temperature, and (optionally) air speed in a representative sample of the occupied interior spaces of the building during occupied hours, to confirm an acceptable thermal environment for observed or anticipated occupant activity and clothing per *Section 7, Evaluation of Comfort in Existing Buildings*.

For building occupancy types not covered by this standard, as well as spaces that are inaccessible to the LP (e.g. individual apartments in multifamily housing), the LP should document their evaluation of these situations in the application.

- While conducting the site visit, the LP or his/her representative should observe indicators of possible occupant thermal discomfort (personal fans, space heaters, or altered thermostats) as areas meriting additional evaluation.

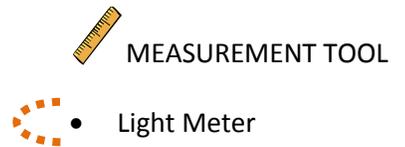


Illumination

The LP shall verify that minimum recommended illumination levels are provided according to the most recent version of the Illuminating Engineering Society of North America (IESNA) Lighting Handbook.

The IESNA Lighting Handbook recommends horizontal and/or vertical task illuminances for a wide variety of spaces and tasks.

The LP should measure the illumination levels in a representative sample of the occupied interior spaces of the building, as well as any associated parking facilities.



For building occupancy types not covered by these recommendations, as well as spaces that are inaccessible to the LP (e.g. individual apartments), the LP should document their evaluation of these situations in the application.

 If during the site visit, the LP observes multiple dramatic differences (a deviation of a third or more) between the actual and recommended illuminance in the building, then the LP should not sign the application until the lighting issues have been addressed.

Property Use Details

The LP must assess whether the Property Use Type and Use Details have been correctly characterized and entered. He or she must also ensure that the Gross Floor Area for all individual property uses add up to the Gross Floor Area for the entire property.

✔ **Property Type**

The primary property function matches with one of the property functions listed on pages 7-8.

- 🟡 All Property Uses for the property should be included under the property total Gross Floor Area. This includes services and amenities that directly support the main activity of the building, and could reasonably be assumed to appear in similar properties across the country. For example, in an office building, this might include a coffee shop, a flower shop, a news stand, a barber shop, etc. In a hotel, this would include the gift shop, gym and spa, and any restaurants.
- 🟡 As a general rule of thumb, an applicant should designate as few Property Use types as possible. When in doubt, do not split a property use out.
- 🟡 Every building has a mechanical room with heating and cooling equipment. This space should not be separately designated, but included in the Gross Floor Area of the main property use type.
- 🟡 If a food service area supports the main property use (e.g. a cafeteria serving workers in an Office or a restaurant in a Hotel), then the Gross Floor Area should be included within the main Property Use Type. If a food service area is a food court or restaurant that is open to the general public, it should be entered as “Other-Food Service.”
- 🟡 Retail includes only properties and property uses in which consumer products are sold and which are at least 5,000 square feet with an exterior entrance to the public. Any retail type property that does not meet this definition should be designated as the most appropriate property type as listed in Portfolio Manager that is not Retail. Examples include Convenience Store with or without Gas Station, Enclosed Mall, and Personal Services (Health/Beauty, Dry Cleaning, etc.) etc.

✔ **Gross Floor Area**

This value is the total floor area of the whole building as measured from the principal exterior surfaces of the enclosing fixed walls. The LP should verify that the value printed here represents the sum total of all the building’s property use types reported on the application, and that they, in turn, represent the whole building.

✔ Specific Property Use Details

The LP must verify that each of the Property Use Details is correct. Depending on the designated Property Use Type, different Property Use Details will be included. The LP must verify each of these property Use Details, which may include Weekly Operating Hours, Number of Workers on Main Shift, Number of Computers, or other pertinent characteristics specific to each Property Use Type.

The LP is not obligated to count each Use Detail, such as computers; however he/she must verify the correctness of the value reported. The LP may verify this information by asking credible parties who have a detailed knowledge of the building and/or cross-checking information with available reports from departments within the organization. For example, the LP may use a report from human resources to verify the reported Number of Workers on Main Shift, or consult the IT department to verify the Number of Computers owned or issued by the organization.

🟡 “Weekly Operating Hours” is defined the following ways, depending on the building type.

- **Office, Financial Office, Warehouse and Distribution Center:** The total number of hours per week where the majority of workers are present. For example, if the majority of workers are in the building from 8:00 am - 6:00 pm M-F, then Weekly operating hours should be 50 (10 hrs * 5 days per week).
 - If the building has two or more tenants with hours that differ by more than 10%, then each should be shown on the application as a separate Property Use.
 - If the building has two or more tenants with hours that differ by less than 10%, then the largest tenant’s (based on Gross Floor Area) hours should be reported on the application as the Weekly Operating Hours for the whole building.
 - If the hours vary seasonally (ex: 1/2 day Fridays in the summer), then the schedule that is followed most often should be used.
 - If the building has two shifts of workers, add together the number of hours of both shifts.
 - These hours should not be included:
 - When the property is occupied only by maintenance, security, the cleaning crew, or other support personnel.
 - HVAC startup or shutdown time
- **Properties that serve or sell to customers (retail stores, medical office, bank branch, courthouse, library, health club, etc).** The Weekly Operating Hours should be the hours that the facility is open to the public.
- **Worship Facility.** The Weekly Operating Hours should reflect hours when the facility is typically open for operation, which may include worship services, choir practice, administrative use, committee meetings, classes, or other activities.

- Multifamily properties have multiple use details that refer to “Number of Residential Living Units”. The “Total Number of Residential Living Units” is defined as the total number of apartments within the apartment building, or apartment complex if you are working with a campus of apartment buildings. This includes both occupied and unoccupied units. The “Number Residential Living Units in a Low-Rise Setting” is the count of apartments that are located in areas of the property that have less than four floors. There is also a use detail for Mid-Rise and High-Rise settings. The LP should verify that the count of apartments in each setting is accurate. This is particularly important for multi-building apartment complexes (campuses), as well as properties that have multiple sections or wings with varying heights.



Anything other than what is requested per the Use Detail definition should not be included in the count for the Use Detail. For example:

“Number of Computers” **only** includes desktop computers, laptops, and servers. It does **not** include monitors, tablets, smartboards, fax machines or ATMs.

“Workers on Main Shift” **only** includes the number of employees present during the main shift. It does **not** include visitors, clients, everyone who came into the building over the course of 24 hours, or the total number of workers across multiple shifts.

“Number of MRI Machines” **only** includes Magnetic Resonance Imaging machines in the facility. It does **not** include X-ray, CT scan, other imaging or diagnostic equipment.

- “Number of Bedrooms” is the total count bedrooms in all apartment units at the property. Studio apartments count as having one bedroom.

Parking

Include or Exclude

The ENERGY STAR 1 – 100 score assesses a building’s energy performance. For the most accurate assessment of the building’s performance, where possible, do not include Parking. Parking can be excluded if it is separately metered.

If the energy consumed by the lighting and ventilation associated with the Parking is on a shared meter with the building, then include Parking.

If a structure is composed of 75 percent or more parking garage (enclosed or non-enclosed), then it is not eligible for ENERGY STAR certification.

Definitions

Parking refers to any space used for parking vehicles. This includes open parking lots, parking structures that may be only partially enclosed, and fully-enclosed (or underground) parking structures. Parking structures may be free standing or may be physically connected to a building.

The Gross Floor Area for Parking is entered in three categories: Enclosed, Non-Enclosed (with roof), and Open.

Enclosed: a parking structure that is fully enclosed, with four solid walls and a roof.

Non-Enclosed: a parking structure that has a roof with partial walls or open sides.

Open: parking area that is not covered by a roof, typically an open lot or the top level of an above ground parking structure.

How to Measure

The LP must verify the total square foot of all types of parking reported on the application. This can be verified by obtaining information from building blue prints, resurfacing project reports, using a measuring wheel, or by counting parking spaces and accounting for driving lanes. Estimating square foot based on aerial photographs, such as from Google Earth, is not acceptable as it is not an actual measurement.

Gross Floor Area should include all areas associated with the parking structure/area including individual parking spaces, driveways and aisles, security booths, stairwells, elevator shafts, and equipment or storage areas.

Data Center

Data Center is a unique space because one of the operational characteristics is a set of energy meters capturing the IT Energy Consumption. The LP must verify that the applicant entered the correct metering configuration and measured annual IT energy value. It can be helpful for the LP to collaborate with both the IT manager and building manager to ensure that all the required information about the metering configuration and IT energy consumption are accurate.

Definitions

Data Center

Data Center applies to spaces specifically designed and equipped to meet the needs of high density computing equipment, such as server racks used for data storage and processing.

Data center space located within multi-use buildings is typically larger than 500 square feet in floor area, and usually has:

- A constant total power load (including non-IT energy use for power distribution and cooling systems) of 75 kilowatts (kW), with the IT equipment drawing a 30-50 kW power load;
- Dedicated uninterruptible power supplies and cooling systems; and
- A raised floor to facilitate equipment cooling.

IT Energy

IT Energy is defined as the total amount of energy required by the server racks, storage silos, and other IT equipment in the data center space. This data is entered into Portfolio Manager in kWh. It should not include supplemental loads like HVAC equipment, lighting, or security equipment.

Power Distribution Unit (PDU)

A PDU is a device that delivers conditioned power from the uninterruptible power supplies (UPS) to servers, networking equipment and other electronic equipment.

Uninterruptible Power Supply (UPS)

A UPS is a piece of equipment that maintains power to electrical loads in the event of a utility power supply disruption. The UPS conditions the power reaching the load under normal operation to prevent undesired features of the power source (outages, sags, surges, bad harmonics, etc.) from adversely affecting the performance of servers and other equipment. UPS typically use batteries as an emergency power source and provide power to servers until emergency generators come online.

Data Center

How to Measure

There are three acceptable options for determining the IT Energy:

1. **Meter (kWh) at the output of the UPS (preferred)**

Note: If the UPS supports non-IT loads (e.g. cooling equipment, mechanical) that amount to more than 10% of its total load, then the applicant must exclude the non-IT equipment by taking one of the following approaches:

- If energy used by non-IT equipment is measured, then it may be subtracted from the total UPS energy, and the remainder should be entered into the IT Energy meter in Portfolio Manager; **OR**
- If energy used by non-IT equipment is not measured, then supply a reading from the input to the PDU that supports the IT equipment.

2. **Meter (kWh) at the input of the PDU**

- If there is not a UPS; **OR**
- If the UPS supports non-IT loads that account for more than 10% of the total load and are not submetered.

3. **Calculate kWh by recording kW readings every 15 minutes or more frequently**

- UPS is connected to a software solution (ex. a Building Management System or some other software program) that logs the kW values at 15 minute intervals and converts it to monthly kWh values.
- Some newer UPS have the ability to log these kW readings at 15 minute or more frequent increments as well.

Note: If the applicant has calculated IT Energy using this third option, the LP must review how the readings were collected, verify that the readings were collected in increments of no greater than every 15 minutes, and use their professional judgment to assess how accurately the interval readings were used to calculate the monthly IT energy values.

Portfolio Manager no longer automatically applies IT energy estimates for data centers that are not metered.

Since July 2013, when the upgraded Portfolio Manager was released, EPA began to require that actual, measured IT energy data be entered into the tool. If actual data are not available, the data center space will need to be reclassified as the primary building space type in order for the building to be eligible for ENERGY STAR certification.

Energy Consumption

✔ Site Energy Use Summary

The site energy use summary presents the sum total of all entered energy inputs. The LP should look at this summary and determine if the energy profile is what would be expected for the building type in that climate. If the energy use profile is different than expected, the LP should re-examine the energy inputs to ensure that no energy source or meter was excluded.

✔ Energy Intensity

The LP should review the Source Energy Use Intensity because it can signal that the energy consumption data may have been entered with incorrect units. Typical Source Energy Use Intensity falls within the range of 30 kBtu/ft² to 500 kBtu/ft².

✔ Power Generation Plant

If a power plant is specified on the application, the LP should verify that there is a specific power purchasing agreement.

✔ Energy Meters

The LP must verify that all actual, as-billed energy consumption for all fuels for the building is correctly entered and captured on the application. The energy meters must account for the total energy consumption from all property uses within the building envelope. For each energy source used in the building, the LP is expected to review energy consumption documentation, such as monthly utility bills for electric, natural gas, and district energy, and invoices for bulk fuel purchases.

- Check that all forms of energy that are required for the building's operation have been reported.
- Check that the units for each of the fuels have been entered correctly.
- Check that no simulated or model values have been used.

📄 If an energy meter was broken for some portion of the application period, submit a ticket through the ENERGY STAR Buildings FAQ page at www.energystar.gov/BuildingsHelp with a detailed description of the situation, including the time period for which the meter was broken, and an ENERGY STAR team member will provide guidance on how to proceed.

Reportable fuel sources include electricity (grid purchases, on-site solar and on-site wind), natural gas, fuel oil, diesel fuel, district steam or hot water, district chilled water, propane, coal, coke, kerosene and wood.

📄 If wood, coal, fuel oil, or propane is combusted on-site, such as in a boiler, then the purchased quantities of these fuels must be reported. Unlike electricity and natural gas, wood, coal, fuel oil, and propane may not be delivered or measured on a month-to-month

billing period. Consequently, they can be entered as they are billed or the delivery amount may be divided over the total months covered by the purchase.

- On-site Combined Heat and Power systems consume a single input fuel (e.g. natural gas) to produce both heat and electricity. The LP should verify that this input fuel is included in the total reported energy. This information may be found on monthly values for a fuel such as natural gas, or from other irregular billing periods for diesel oil or coal. The applicant is not required to report the amount of heat and electricity generated from the combined heat and power system.
- On-site renewable electricity, generated through wind or solar photovoltaic power generation systems installed on or at the building site is treated as a fuel and entered into Portfolio Manager using a standard electricity meter in the Energy Meters section, similar to grid purchased electricity. Applicants are required to report:

- (1) kWh used on-site (from the wind or solar system), by the building;
- (2) kWh sold or exported to the grid; and
- (3) kWh purchased from the grid.

EPA does not accept net meters. The LP is required to confirm that all on-site renewable electricity is reported in full and should ensure that the applicant is not subtracting the on-site solar or wind energy generated from the total energy consumption of the building. For more information on EPA's policies with regard to green power, please refer to the Portfolio Manager Technical Reference: Green Power, available for download at www.energystar.gov/GreenPower.

- Energy bills don't match meter entries? Many energy information services "calendarize" energy bills to align with calendar months. For example, if the actual billing period is from the 15th of one month to the 15th of the next month, they will create a month of data running from the 1st to the 31st of the month; Portfolio Manager does the same to produce annualized metrics. As long as the bills are calendarized in the same way that Portfolio Manager does (i.e. determining the average daily use during each month, and then summing the daily average over the number of days in the month.), it is okay for you to verify the application.

Sign & Date

After all of the elements on the application have been verified and deemed to be correct, the LP must sign and date the application.

- Note that the application must be submitted before the date specified as the "Date application becomes ineligible." Therefore, work with the applicant to ensure that there is enough time before the 120 day expiration date to conduct the site visit, complete the application, and postmark the application.

Verify Information

✔ **Licensed Professional**

The name and contact information for the Licensed Professional are correct and the LP's license number is accurate. The LP's stamp should also be visible. Sometimes the LP's stamp is not visible when the application is scanned, so it is worth double checking this.

✔ **Tracking Number**

The application has a tracking number printed at the bottom right-hand corner of the paper. Applications "generated for uses other than applying for the ENERGY STAR" do not have a tracking number and will not be accepted. If there is not a tracking number on the application, then the applicant needs to download an application within the "Apply for the ENERGY STAR" process in Portfolio Manager.

Stamp & Sign

After all of the information has been reviewed and deemed to be correct, the LP must apply his/her professional seal or stamp and sign the application, thus attesting that the information contained within the application is accurate and in accordance with the instructions in this Guide. The LP must ensure that the name, license number, and contact information is complete and correct, matching the information on his/her professional stamp.

- ☐ If the LP does not have a stamp, include a copy of the state issued certificate of licensure as a Professional Engineer or Registered Architect with the application.

The person who signs the signatory agreement must be a representative of the property applying for ENERGY STAR certification (typically the owner, manager, or a building engineer). In cases where the LP works for the organization certifying, he/she may sign the application twice – in the LP verification section, as well as the signatory agreement. However, if the LP does not work for the organization that is certifying, he/she may not sign the signatory agreement.

- ☐ The person submitting the application should check to make sure the LP stamp and all signatures are visible on the scanned copy of the application before submitting it to EPA. If the LP stamp is not visible, EPA will check the website of the State licensing body to verify that the LP's license is current. If the signatures are not visible or if the LP's license is not current, EPA will require resubmission of the application.

Appendix: Sample Application for ENERGY STAR Certification



ENERGY STAR® Application for Certification

87

ENERGY STAR®
Score¹

Office - Test Application

Registry Name: Office - Test Application

Property Type: Office

Gross Floor Area (ft²): 128,600

Built: 1992

For Year Ending: 04/30/2016²

Date Application Becomes Ineligible: 08/28/2016

1. The ENERGY STAR Score is based on total source energy. A score of 75 is the minimum to be eligible for the ENERGY STAR.
2. Applications must be submitted to EPA within 120 days of the Year Ending Date. The award is not final until approval is received from EPA.



Please use the [Licensed Professional's Guide to the ENERGY STAR® for Commercial Buildings](http://www.energystar.gov/lpguide) for reference in completing this checklist (<http://www.energystar.gov/lpguide>).

Property & Contact Information

Property Address

Office - Test Application
37 Example Street
Washington, District of Columbia (D.C.)
20007

Property Owner

ICF International
9300 Lee Highway
Fairfax, VA 22031
(____)____-____

Primary Contact

John Smith
37 Example Street
Arlington, VA 22201
703-732-2067
jon.gimber@icfi.com

Property ID: 3625620

1. Review of Whole Property Characteristics

Basic Property Information

1) Property Name for Registry: Office - Test Application

Is this the official name to be displayed in the [Registry of ENERGY STAR Certified Buildings and Plants](#)?

Yes No

If "No", please specify: _____

2) Property Type: Office

Is this an accurate description of the primary use of this property?

Yes No

3) Location:

37 Example Street
Washington, District of Columbia (D.C.) 20007

 Yes No

Is this correct and complete?

4) Gross Floor Area: 128,600 ft²

Does this represent the entire property? (i.e., no part of the building/property was excluded/subtracted from the total) If "no" please specify what space has been excluded.

 Yes No
5) Average Occupancy: 100

Is this occupancy accurate for the entire 12 month period being assessed?

 Yes No
6) Number of Buildings: 1

Does this number accurately represent all structures?

 Yes No
Notes:

Indoor Environmental Standards

1) Ventilation for Acceptable Indoor Air Quality

Does this property meet the minimum ventilation rates according to ANSI/ASHRAE Standard 62.1, Ventilation for Acceptable Indoor Air Quality?

 Yes No
2) Acceptable Thermal Environmental Conditions

Does this property meet acceptable thermal environmental conditions according ANSI/ASHRAE Standard 55, Thermal Environmental Conditions for Human Occupancy?

 Yes No
3) Adequate Illumination

Does this property meet the minimum illumination levels as recommended by the Illuminating Engineering Society of North America (IESNA) Lighting Handbook?

 Yes No
Notes:

2. Review of Property Use Details

Office: Office Use

★ This Use Detail is used to calculate the 1-100 ENERGY STAR Score.

★ 1) Gross Floor Area: 108,000

Is this the total size, as measured between the principal exterior surfaces of the enclosing fixed walls of the building(s)? This includes all areas inside the building(s) such as: occupied tenant areas, common areas, meeting areas, break rooms, restrooms, elevator shafts, mechanical equipment areas, and storage rooms. Gross Floor Area should not include interstitial plenum space between floors, which may house pipes and ventilation. Gross Floor Area is not the same as rentable, but rather includes all area inside the building(s). Leasable space would be a sub-set of Gross Floor Area. In the case where there is an atrium, you should count the Gross Floor Area at the base level only. Do not increase the size to accommodate open atrium space at higher levels. The Gross Floor Area should not include any exterior spaces such as balconies or exterior loading docks and driveways.

Yes No

★ 2) Weekly Operating Hours: 53

Is this the total number of hours per week that the property is occupied by the majority of the employees? It does not include hours when the HVAC system is starting up or shutting down, or when property is occupied only by maintenance, security, cleaning staff, or other support personnel. For properties with a schedule that varies during the year, use the schedule most often followed.

Yes No

★ 3) Number of Workers on Main Shift: 262

Is this the total number of workers present during the primary shift? This is not a total count of workers, but rather a count of workers who are present at the same time. For example, if there are two daily eight hour shifts of 100 workers each, the Number of Workers on Main Shift value is 100. Number of Workers on Main Shift may include employees of the property, sub-contractors who are onsite regularly, and volunteers who perform regular onsite tasks. Number of Workers should not include visitors to the buildings such as clients, customers, or patients.

Yes No

★ 4) Number of Computers: 290

Is this the total number of computers, laptops, and data servers at the property? This number should not include tablet computers, such as iPads, or any other types of office equipment.

Yes No

★ 5) Percent That Can Be Heated: 100

Is this the total percentage of the property that can be heated by mechanical equipment?

Yes No

★ 6) Percent That Can Be Cooled: 100

Is this the total percentage of the property that can be cooled by mechanical equipment? This includes all types of cooling from central air to individual window units.

Yes No

Notes:

Parking: Parking Use

★ This Use Detail is used to calculate the 1-100 ENERGY STAR Score.

★ 1) Open Parking Lot Size: 0 ft²

Is this the total area that is lit and used for parking vehicles? Open Parking Lot Size refers specifically to open area, which may include small shading covers but does not include any full structures with roofs. Parking lot size may include the area of parking spots, lanes, and driveways.

Yes No

★ 2) Partially Enclosed Parking Garage Size: 0 ft²

Is this the total area of parking structures that are partially enclosed? This includes parking garages where each level is covered at the top, but the walls are partially or fully open.

Yes No

★ 3) Completely Enclosed Parking Garage Size: 18,000 ft²

Is this the total area of parking structures that are completely enclosed on all four sides and have a roof? This includes underground parking or fully enclosed parking on the first few stories of a building.

Yes No

★ 4) Supplemental Heating: No

Does the parking garage have a heating system to pre-heat ventilation air and/or maintain a minimum temperature during winter months?

Yes No

Notes:

Office: Vacant Office Use

★ This Use Detail is used to calculate the 1-100 ENERGY STAR Score.

★ 1) Gross Floor Area: 20,600

Is this the total size, as measured between the principal exterior surfaces of the enclosing fixed walls of the building(s)? This includes all areas inside the building(s)

Yes No

such as: occupied tenant areas, common areas, meeting areas, break rooms, restrooms, elevator shafts, mechanical equipment areas, and storage rooms. Gross Floor Area should not include interstitial plenum space between floors, which may house pipes and ventilation. Gross Floor Area is not the same as rentable, but rather includes all area inside the building(s). Leasable space would be a sub-set of Gross Floor Area. In the case where there is an atrium, you should count the Gross Floor Area at the base level only. Do not increase the size to accommodate open atrium space at higher levels. The Gross Floor Area should not include any exterior spaces such as balconies or exterior loading docks and driveways.

★ 2) Weekly Operating Hours: 0

Is this the total number of hours per week that the property is occupied by the majority of the employees? It does not include hours when the HVAC system is starting up or shutting down, or when property is occupied only by maintenance, security, cleaning staff, or other support personnel. For properties with a schedule that varies during the year, use the schedule most often followed.

Yes No

★ 3) Number of Workers on Main Shift: 0

Is this the total number of workers present during the primary shift? This is not a total count of workers, but rather a count of workers who are present at the same time. For example, if there are two daily eight hour shifts of 100 workers each, the Number of Workers on Main Shift value is 100. Number of Workers on Main Shift may include employees of the property, sub-contractors who are onsite regularly, and volunteers who perform regular onsite tasks. Number of Workers should not include visitors to the buildings such as clients, customers, or patients.

Yes No

★ 4) Number of Computers: 0

Is this the total number of computers, laptops, and data servers at the property? This number should not include tablet computers, such as iPads, or any other types of office equipment.

Yes No

★ 5) Percent That Can Be Heated: 100

Is this the total percentage of the property that can be heated by mechanical equipment?

Yes No

★ 6) Percent That Can Be Cooled: 100

Is this the total percentage of the property that can be cooled by mechanical equipment? This includes all types of cooling from central air to individual window units.

Yes No

Notes:

3. Review of Energy Consumption

Data Overview			
Site Energy Use Summary		National Median Comparison	
Electric - Grid (kBtu)	5,693,579.3 (100%)	National Median Site EUI (kBtu/ft ²)	73.7

Total Energy (kBtu)	5,693,579.4	National Median Source EUI (kBtu/ft ²)	231.3
Energy Intensity		% Diff from National Median Source EUI	-39.9%
Site (kBtu/ft ²)	44.3		
Source (kBtu/ft ²)	139	Emissions (based on site energy use)	
		Greenhouse Gas Emissions (Metric Tons CO ₂ e)	762.2
Power Generation Plant or Distribution Utility:			
Potomac Electric Power Co [Pepco Holdings Inc]			
Note: All values are annualized to a 12-month period. Source Energy includes energy used in generation and transmission to enable an equitable assessment.			

Summary of All Associated Meters

The following meters are associated with the property, meaning that they are added together to get the total energy use for the property. Please see additional tables in this checklist for the exact meter consumption values.

Meter Name	Fuel Type	Start Date	End Date	Associated With
Electric Grid Meter	Electric	12/01/2012	In Use	Office - Test Application

Total Energy Use Yes No

Do the meters shown above account for the total energy use of this property during the reporting period of this application?

Additional Fuels Yes No

Do the meters above include all fuel *types* at the property? That is, no additional fuels such as district steam, generator fuel oil have been excluded.

On-Site Solar and Wind Energy Yes No

Are all on-site solar and wind installations reported in this list (if present)? All on-site systems must be reported.

Notes:

Summary of Additional Meters

None of the following meters are associated with the property meaning that they are not added together to account for the total energy use of the property.

Meter Name	Fuel Type	Start Date	End Date	Associated With
Uninterruptible Power Supply Meter	Uninterruptible Power Supply (UPS) Output Energy	05/01/2013	In Use	None

Sub (or Ancillary) Meter Energy Use Yes No

Are the meters in this list all sub-meters or other ancillary meters that do not need to be added to the total energy for the reporting period of this application?

Notes:

Electric Meter: Electric Grid Meter (kWh (thousand Watt-hours))

Associated With: Office - Test Application

Start Date	End Date	Usage	Green Power?
04/29/2015	05/30/2015	138,422	No
05/30/2015	06/30/2015	147,508	No
06/30/2015	07/29/2015	155,233	No
07/29/2015	08/30/2015	134,640	No
08/30/2015	09/28/2015	138,422	No
09/28/2015	10/29/2015	141,238	No
10/29/2015	11/30/2015	145,533	No
11/30/2015	12/29/2015	134,640	No
12/29/2015	01/29/2016	136,492	No
01/29/2016	02/28/2016	145,533	No
02/28/2016	03/30/2016	134,640	No
03/30/2016	04/30/2016	125,322	No
Total Consumption (kWh (thousand Watt-hours)):			1,677,623
Total Consumption (kBtu (thousand Btu)):			5,724,049.7

Total Energy Consumption for this Meter Yes No

Do the fuel consumption totals shown above include consumption of all energy tracked through this meter that affect energy calculations for the reporting period of this application (i.e., do the entries match the utility bills received by the property)?

Notes:

4. Signature & Stamp of Verifying Licensed Professional

_____ (Name) visited this site on _____ (Date). Based on the conditions observed at the time of the visit to this property, I verify that the information contained within this application is accurate and in accordance with the Licensed Professional Guide.

Signature: _____ Date: _____

Licensed Professional

License: 12345 in VA

John Engineer
 9300 Lee Highway
 Fairfax, VA 22031
 9737685403
 john.smith@icfi.com



Professional Engineer Stamp

NOTE: When applying for the ENERGY STAR, the signature of the Verifying Professional must match the stamp.

5. Signatory Agreement

I hereby nominate the above described property for award of the ENERGY STAR. I have provided a copy of the Licensed Professionals Guide to the ENERGY STAR for Commercial Buildings to our Licensed Professional (LP) for reference. As documented by the above checklist, this property meets the conditions necessary to qualify as ENERGY STAR. I am submitting this application within four months of the Year Ending Date (April 30, 2016) used to generate the application. I will assist EPA, if requested, in verifying any data included in this application. Furthermore, I agree to associate the ENERGY STAR logo only with this property and to adhere to the ENERGY STAR Identity Guidelines.

Signature (must be a direct employee of the building owner/manager): _____ Date: _____

Signatory Name: John Smith

Property Owner: ICF International

The government estimates the average time needed to fill out this form is 6 hours (includes the time for entering energy data, Licensed Professional facility inspection, and notarizing the SEP) and welcomes suggestions for reducing this level of effort. Send comments (referencing OMB control number) to the Director, Collection Strategies Division, U.S., EPA (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460