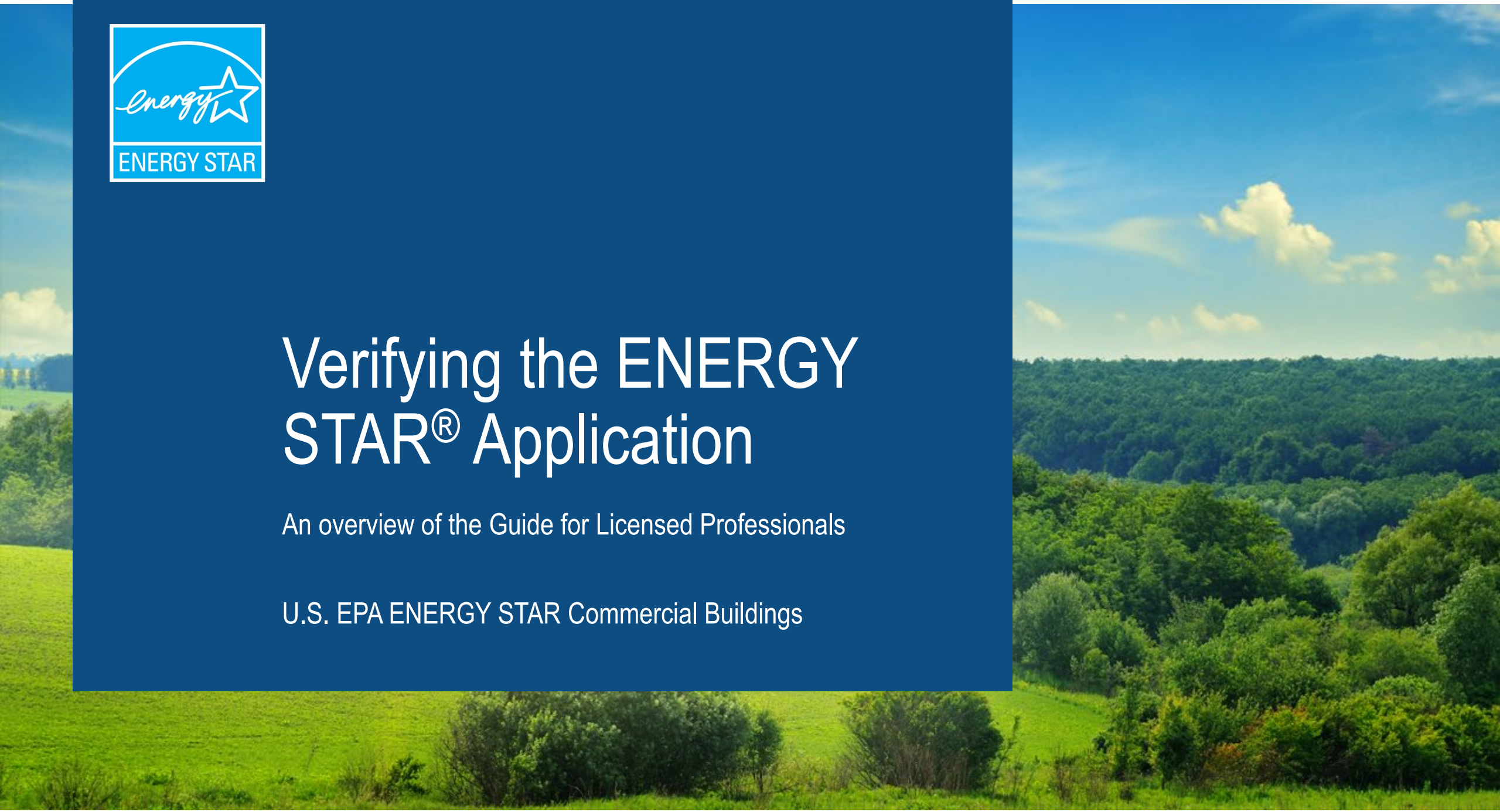


Verifying the ENERGY STAR® Application

An overview of the Guide for Licensed Professionals

U.S. EPA ENERGY STAR Commercial Buildings

Agenda

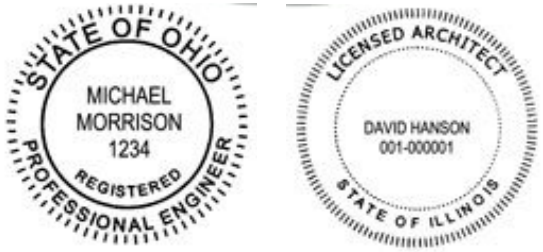
- Role of the Licensed Professional (LP) and the Site Visit
- How to Verify Application Contents
  - Basic Property Information
  - Indoor Environmental Standards
  - Property Use Details
  - Energy Consumption Data
- ENERGY STAR Certification
- Audits

Role of the Licensed Professional (LP) and the Site Visit

Role of the LP

- Confirm building eligibility and adherence to benchmarking guidelines
- Verify completeness and correctness of applications
  - Accurate whole property energy use data
  - Correctly reported Property Use Details
  - Adequate indoor environmental conditions
- Ensure the integrity of ENERGY STAR Certification

LP Eligibility Criteria



- Current Professional Engineer (PE) or Registered Architect (RA) license registered in United States or Canada
  - LP does not have to be registered in same state or province as the building
  - LP can verify applications for buildings in which their organization operates
- Working Knowledge of building systems
  - ASHRAE Standard 55 (thermal comfort)
  - ASHRAE Standard 62.1 (ventilation)
  - IESNA Lighting Handbook
- Understanding of all applicable laws, regulations, and ethics requirements within a property's jurisdiction

ENERGY STAR

Site Visit

- A site visit must be performed by the LP to verify all of the information on the application and ensure that the property provides minimum outside air ventilation, illumination, and thermal comfort
  - Someone working under the direction of the LP may conduct the site visit. This person is allowed to work for the company that is applying for certification.
- It is the responsibility of the LP to verify that information in the application is accurate to the best of their knowledge, based on the site visit, best professional judgment, and in line with the LP Guide and Portfolio Manager definitions
- Link to the LP Guide: https://www.energystar.gov/buildings/tools-and-resources/energy-star-guide-licensed-professionals

Timing of Site Visits

- Site visits may take place anytime within the 12-month application period or 120 days after the period ending date of the application.

- If the site visit is done prior to the end of the period, the LP is still responsible for ensuring that the data entered in Portfolio Manager and the energy data is correct for the entire period, as operational data may have changed since the site visit.

Frequency of Site Visits

- One site visit can be performed for two consecutive application years, as long as the building received an ENERGY STAR certification in the previous year and the site visit conducted in the most recent application year falls within the 12-month application period of the 2022 label year application.

- For example, a building that earned 2021 ENERGY STAR certification for the 12 months ending May 2021 that had a site visit conducted on 9/15/2021 can “re-use” that site visit for their 2022 ENERGY STAR application, which has a period ending date of April 2022.

- The LP is still responsible for verifying that nothing has changed in terms of the operations, confirming that data entered into Portfolio Manager is accurate, and verifying energy bills.

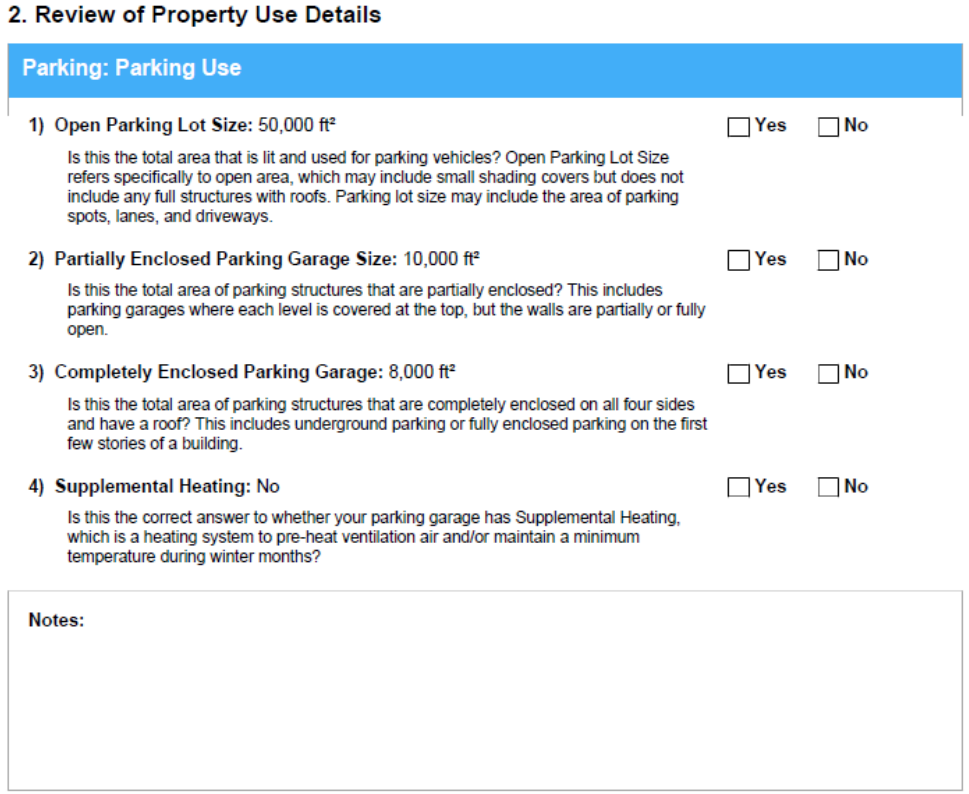
How to Verify Application Contents

Application Contents

1. Review of Whole Property Details
2. Review of Property Use Details
3. Review of Energy Consumption
4. Signature & Stamp of Verifying Licensed Professional
5. Signatory Agreement

Checkboxes ad Notes

- Yes/No checkboxes – the checkboxes are asking you to confirm the values in the application
- Notes – each section contains a Notes box which you should use to make it easier for application reviewers to understand the property



2. Review of Property Use Details

Parking: Parking Use

1) **Open Parking Lot Size:** 50,000 ft² ☐ Yes ☐ No

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.

2) **Partially Enclosed Parking Garage Size:** 10,000 ft² ☐ Yes ☐ No

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.

3) **Completely Enclosed Parking Garage:** 8,000 ft² ☐ Yes ☐ No

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.

4) **Supplemental Heating:** No ☐ Yes ☐ No

Is this the correct answer to whether your parking garage has Supplemental Heating, which is a heating system to pre-heat ventilation air and/or maintain a minimum temperature during winter months?

Notes:

Basic Property Information

- Property Name for Registry
- Property Type
- Location
- Gross Floor Area
- Average Occupancy (%)
- Number of Buildings
- Whole Property Verification

Property Type

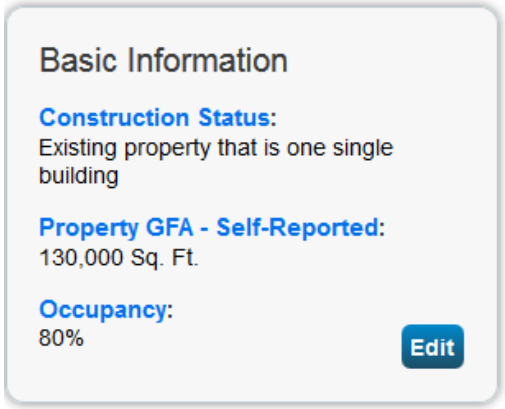
- EPA-Calculated Property Type
  - Determined by EPA based on property use details and shown on application
  - Represents property use that comprises >50% of gross floor area
  - If no single property use type is >50% of total floor area, type is listed as “Mixed Use Property” and is usually not eligible for certification
- Self-Selected Property Type
  - Selected by the user at the property level and can be changed
  - This type is not shown in the application
- Up to the LP to verify that the selected property uses are correct and in line with the Portfolio Manager definitions
  - Example: K-12 Schools must have more than 75% of students in Kindergarten or higher grade

Gross Floor Area

- Gross Floor Area (GFA) is the size of the building as measured from the principal exterior walls
- Gross Floor Area ≠ rentable or leasable floor area
- Includes: mechanical space, storage rooms, lobbies
- Does not include: space in between floors, balconies, exterior loading docks

Gross Floor Area

- “Property GFA” covers the entire property. If separately metered, parking should be excluded from this area
- “Use Total GFA” is the sum of the GFA for all property uses, except for parking uses.
- A change in the floor area of one Property Use must be accounted for in another property use to maintain the total building GFA



Name	Property Use Type	Gross Floor Area	Action
Office Use	Office	123,000 ft²	I want to...
Parking Use	Parking	50,000 ft²	I want to...
Data Center Use	Data Center	7,000 ft²	I want to...
	Property GFA (Buildings):	**130,000** (used to calculate EUI)	
	Property GFA (Parking):	50,000	

Average Occupancy (%)

Property Type	Occupancy Threshold for Score
Office/Bank/Courthouse/Financial Office	> 55% average occupancy
Hotel	> 60% average occupancy
Multifamily Housing	> 80% average occupancy
K-12 School	Open at least 8 months

- If occupancy level fluctuates, calculate average occupancy over the last 12-month period
- Office properties with vacant space should create a separate Property Use with appropriate square footage, and zero values for workers, hours, and computers

Property Configuration

- Most Property Types must apply for certification as a single structure
  - A "single structure" is a building where all of its parts share an actual, physical connection that is complete and indivisible. In other words, two buildings must share ***functional*** space that cannot be divided among the buildings (such as underground parking, an atrium, or a lobby) to be considered a single structure.
- Certain Property Types must apply for certification as a campus
  - Hospital
  - Hotel
  - K-12 School
  - Multifamily Housing
  - Senior Living Community
- Send us a question if you're not sure about the configuration of your property, because your certification eligibility could be affected.

Single Structures Example

3 office buildings connected by enclosed walkways should be benchmarked as 3 individual buildings

FAQ on What Constitutes a Single Structure: [What constitutes a single structure? What if multiple buildings are connected via walkways or common space? (force.com)]

Campus Configuration

- **Campus, or multi-building property**
  - *Only* Hospitals, Hotels, K-12 Schools, Multifamily Housing, and Senior Living Communities may apply as a campus.
  - These Property Types are often located in campus settings, which is accounted for in EPA's 1-100 ENERGY STAR Score for these Property Types.
  - *For certification, an applicant must include all owned or managed properties on a single shared site.
- "How to Benchmark a Campus" guide: https://www.energystar.gov/buildings/tools-and-resources/how-benchmark-campus

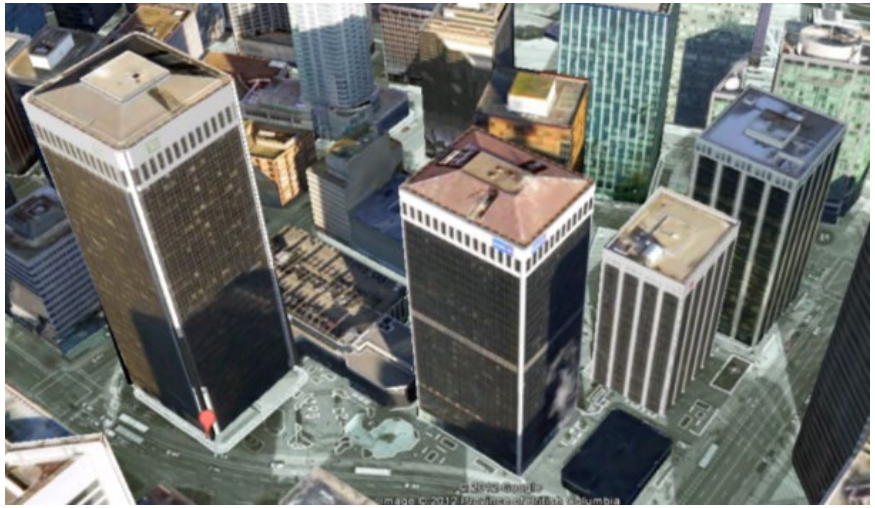
Hospital Campus Configuration

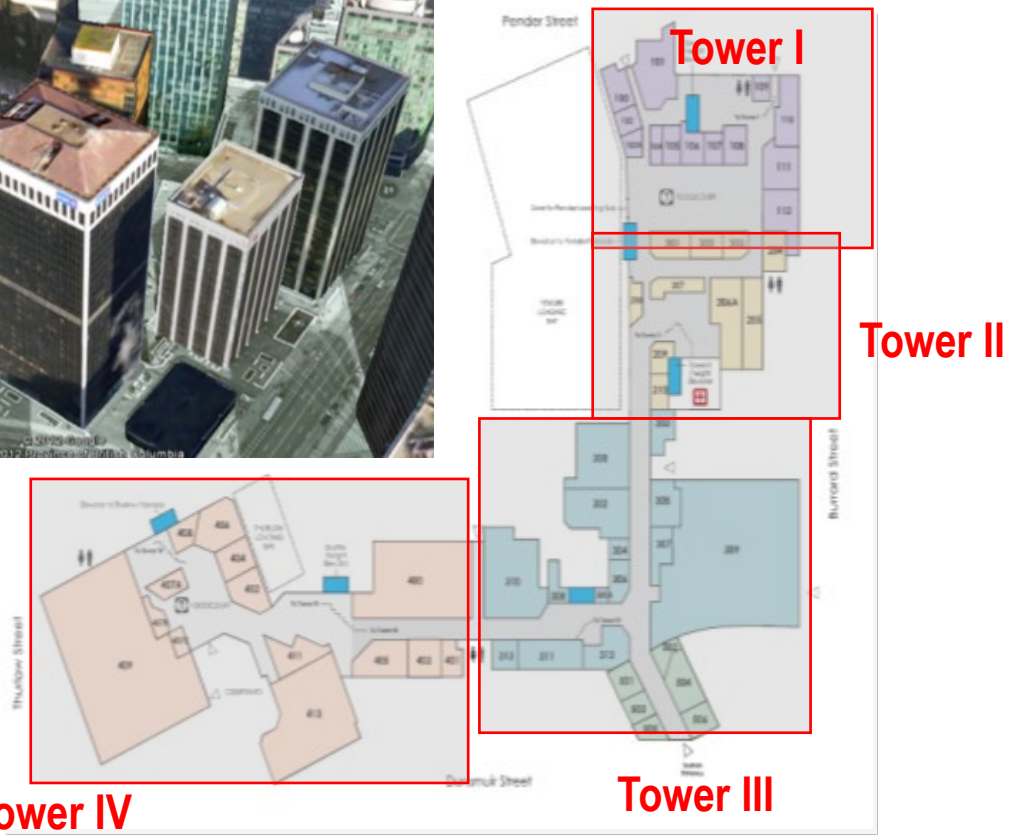
- Clinical and non-clinical spaces that support the primary function of the hospital

Single Structure OR Campus Example

Towers connected by an underground mall

- Apply as a single structure if not sub-metered
- Apply as separate properties if the mall is sub-metered





Indoor Environmental Standards

- Assessment protocols outlined in LP Guide
- Overall purpose to ensure comfort and safety of building has not been compromised for energy conservation
- No specific number of measurements required – may depend on configuration of building, occupancy types, etc.
- Discretion involved in determining evaluation approach, which is why we require expertise of licensed engineer or architect

Indoor Environmental Quality

1) Outdoor Air Ventilation Does this property meet the minimum ventilation rates according to ANSI/ASHRAE Standard 62.1, Ventilation for Acceptable Indoor Air Quality?	☐ Yes	☐ No
2) Thermal Environmental Conditions Does this property meet the acceptable thermal environmental conditions according ANSI/ ASHRAE Standard 55, Thermal Environmental Conditions for Human Occupancy?	☐ Yes	☐ No
3) Illumination Does this property meet the minimum illumination levels as recommended by the Illuminating Engineering Society of North America (IESNA) Lighting Handbook?	☐ Yes	☐ No

Property Use Details

- Verify ALL Values Used to Calculate the 1-100 Score
- Selected Examples
  - Weekly Operating Hours
  - Vacant Space
  - Data Center Inputs
  - Retail Stores
  - Parking

Weekly Operating Hours

- Number of hours that the majority of building occupants are in the building
  - For buildings open to the public (Retail Stores, Bank Branches, etc.), weekly operating hours should reflect only hours when business is open to the public
- Does not include HVAC start up/shut down time or time that only maintenance and security staff are present
- Hours designated on tenant leases are an acceptable alternative if occupied hours are not tracked, provided LP can verify that those hours line up with when majority of workers are present

Pop Quiz!

1. A Retail Store is open 7 days a week, 10 AM to 8 PM. Staff arrive at 8 AM every day to prepare the store for opening, and staff also remain in the store until midnight (12 AM) each night to clean up after the store closes. Once a week, an overnight shift comes in from midnight (12 AM) until 8 AM to restock and organize the store. HVAC runs 24/7 because some of the store's products are temperature-sensitive. What is the number of weekly operating hours that should appear on this store's ENERGY STAR application?
   a. 70 hours
   b. 112 hours
   c. 120 hours
   d. 168 hours

Pop Quiz!

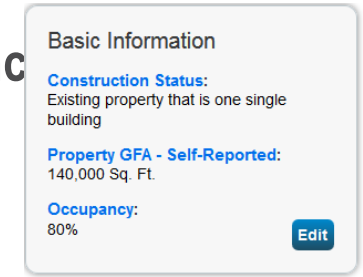
1. A Retail Store is open 7 days a week, 10 AM to 8 PM. Staff arrive at 8 AM every day to prepare the store for opening, and staff also remain in the store until midnight (12 AM) each night to clean up after the store closes. Once a week, an overnight shift comes in from midnight (12 AM) until 8 AM to restock and organize the store. HVAC runs 24/7 because some of the store's products are temperature-sensitive. What is the number of weekly operating hours that should appear on this store's ENERGY STAR application?
   a. 70 hours
   b. 112 hours
   c. 120 hours
   d. 168 hours

For a Retail Store, operating hours should only reflect the hours when the store is open to the general public.

ENERGY STAR

Vacant Space

Only applies to Offices and Property Types using the Office model (Bank Branc ınd Financial Office)



- Information about occupancy is tracked in two ways
  - **Whole Property Value** – one value for the property, edited in the Basic Information section on your Details tab.
    - Should reflect total percentage of the building that is occupied (i.e. in use)
  - **Specific Use Details** – Vacant space is represented by a separate use with:
    - Zero Workers
    - Zero Hours
    - Zero Computers
- You must maintain data in both places: Changes in one place do not automatically affect records elsewhere

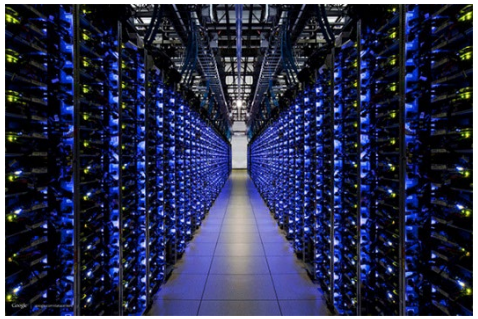
Data Centers

- The “Data Center” Property Use is intended for sophisticated computing and server functions which include:
  - High density computing equipment (such as server racks used for data storage and processing, typically greater than 75kW of demand)
  - Dedicated cooling systems
  - Uninterruptible power supplies (UPS)
  - Raised floors
- It is not intended for:
  - Server closets
  - Computer training areas
  - Telecom closets
  - Print/copy rooms

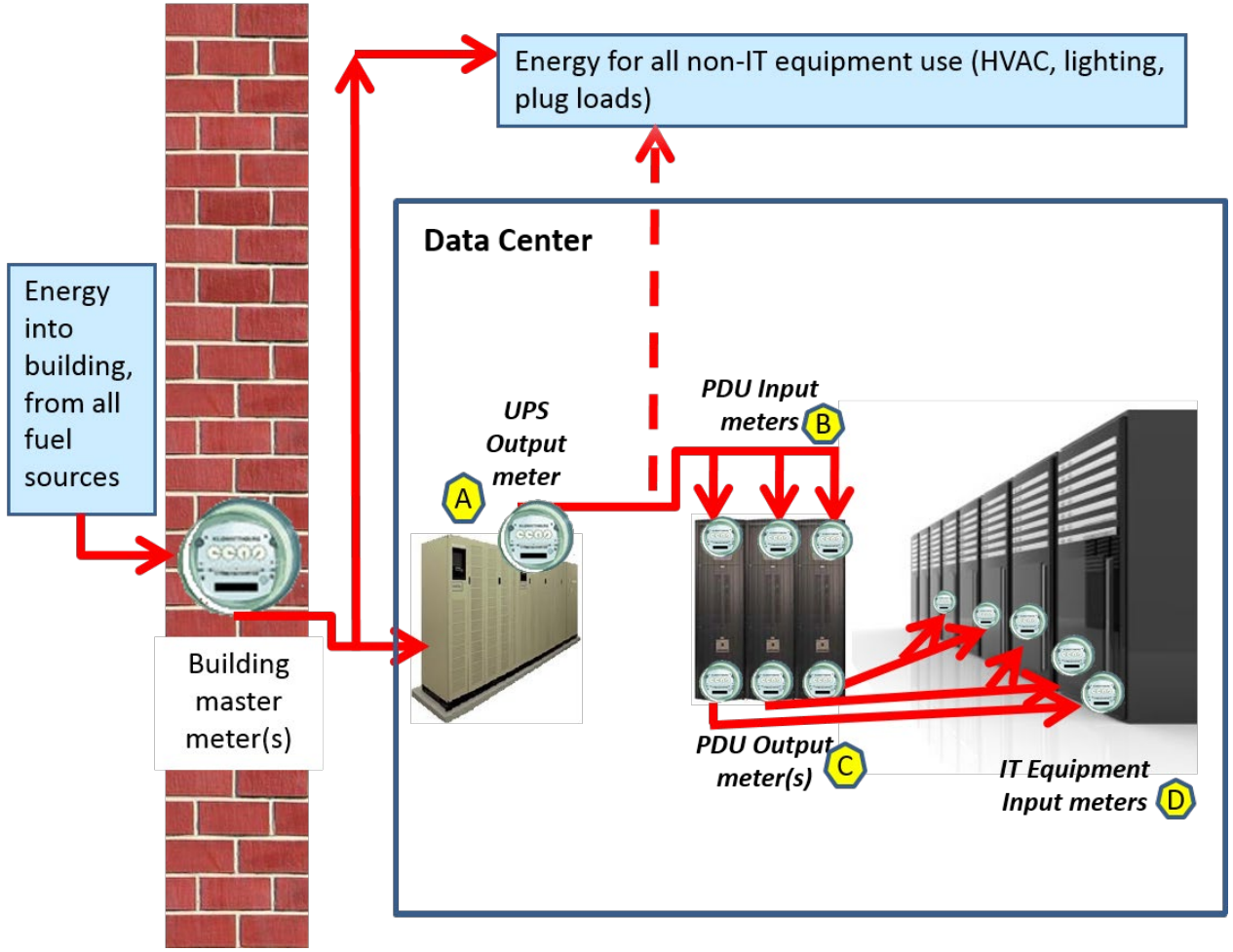
IT Energy Meter Configuration

- **IT energy must be metered from the output of a UPS**; Two exceptions to this rule where you can provide the IT energy metered at the input to the PDU:
  - If no UPS is present
  - If the UPS supports non-IT loads that are GREATER than 10% of its load (e.g., the HVAC is on the UPS meter)
- It is the responsibility of the LP to verify correct IT energy meter location and kWh values
- If IT energy cannot be metered, Data Center Energy Estimates are available.

For more detailed information on Data Centers, visit check out our Data Center FAQ list



Example of Data Center Metering Setup



Retail Stores

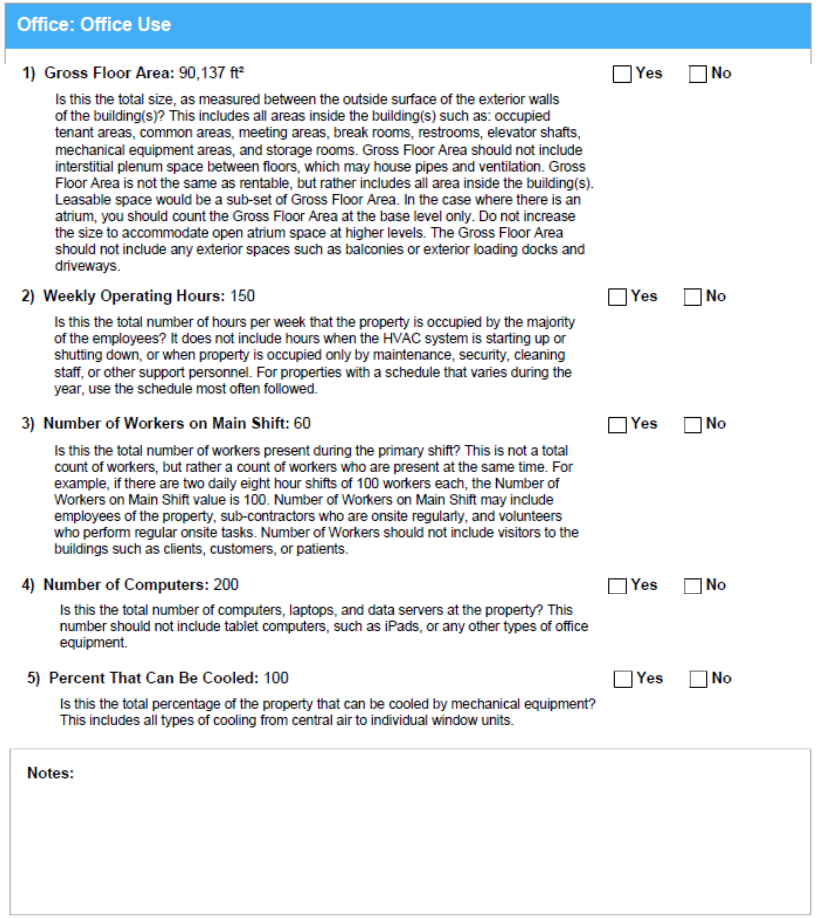
- Retail Store definition only applies to each individual store that is at least 5,000 sq ft, sells non-food consumer goods, and has an exterior entrance to the public
- Common benchmarking errors
  - Classification errors - Stand alone properties like coffee shops, dry cleaners and key repair shops should be classified as “restaurant” or “services”
  - Unnecessarily breaking out space – if an office building includes a small gift shop on the first floor, benchmark the entire property as Office

Parking

- Parking is a separate property use.
- If a property's parking area is sub-metered, EPA recommends *excluding* parking energy use and square footage.
  - This results in the most accurate ENERGY STAR score.
  - Otherwise, EPA estimates the parking energy and subtracts it from your total energy use.
- If parking area is not sub-metered, include total energy use and square footage as separate Parking property use.

Verify all Values in the Application

- Values on the application are used to calculate the 1-100 ENERGY STAR score
- It is the responsibility of the applicant and LP to review and confirm all values shown within the application



Office: Office Use

1) **Gross Floor Area:** 90,137 ft² ☐ Yes ☐ No

Is this the total size, as measured between the outside surface of the exterior 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.

2) **Weekly Operating Hours:** 150 ☐ Yes ☐ No

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.

3) **Number of Workers on Main Shift:** 60 ☐ Yes ☐ No

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.

4) **Number of Computers:** 200 ☐ Yes ☐ No

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.

5) **Percent That Can Be Cooled:** 100 ☐ Yes ☐ No

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.

Notes:

Verify Energy Consumption Data

- List of Associated Meters
- List of Additional Meters
- Total Energy Use
- Additional Fuels
- On-Site Solar and Wind Energy

Verify Energy Consumption Data

Summary of All Associated Energy 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. **Note: please review all meter entries, making note of any unusual entries, and, if they are correct, provide a manual note to explain.**

Meter Name	Fuel Type	Start Date	End Date	Associated With:
Electric Grid Meter	Electric - Grid	01/01/2000	In Use	Example Property - TEST DMW
Natural Gas	Natural Gas	01/01/2000	In Use	Example Property - TEST DMW
Electric Grid Meter	Electric - Grid	01/01/2017	In Use	Example Property - TEST DMW

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:

Verify List of Associated Meters

- The LP must verify that the energy use for all energy meters associated with the property have been included with the correct consumption amount and units (kWh, therms, gallons, etc.).
- It is recommended that the LP check a sampling of utility bills from the application period.

Verify List of Additional (Non-Associated) Meters (if applicable)

- “Additional/Non-Associated meters” are meters that have been entered in Portfolio Manager, but are not included in the total building energy use.
- The LP must verify that these are submeters or other ancillary meters, and that they should not be included in the property’s total energy use.
- Not all applications will have these.

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:
Electric Grid Meter # 2	Electric - Grid	01/01/2000	In Use	None
Electric Solar Meter	Electric - Solar	01/01/2015	In Use	None
Uninterruptible Power Supply (UPS) Output Meter	Uninterruptible Power Supply (UPS) Output Meter	01/01/2015	In Use	None
Electric Solar Meter	Electric - Solar	01/01/2018	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?

Verify Total Energy Use

- During the site visit, the LP should verify that the meters listed in the application account for all energy used at the property.
- If there are Retail or Restaurant Property Uses that have separate meters, these meters should also be included in the application.

Verify List of Additional Fuels and On-Site Energy Generation

- The Additional Fuels and On-Site Generation checks are used to verify that all fuel sources at the property are included.
- All renewable sources are required to be entered using metered consumption values.
- Ensure no energy consumption has been excluded.
- Refer to Green Power Technical Reference for more information on entering on-site renewable energy:
  - https://portfoliomanager.energystar.gov/pdf/reference/Green%20Power.pdf

Have Property Owner Correct any Errors

- If the LP finds errors in the application, the property owner should:
  - Make corrections in Portfolio Manager
  - Determine if property is still eligible for certification
  - If eligible, regenerate an application before LP provides stamp

Stamp & Sign Application

- The LP must apply their professional seal or stamp and sign the application to confirm that the information in the application is accurate.
- The person signing as the Signatory must be a direct employee of the building owner or manager.
- If LP works for the building owner, their may sign the application twice – once as the LP and once as the Signatory.

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.

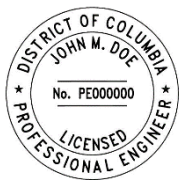
Signature _____

Date _____

Licensed Professional
License: U.S. License 554534534 in AK

Jane The LP
1010 School Street
Fairfax, VA 22031
703-555-4321
janethelp@example.com

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



Professional Engineering 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 (March 31, 2018) used to generate the application. I will assist EPA/NRCan, 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: Joe Owner
Property Owner: DMW Office Co.

Submit Complete Application

- Every box must be checked “Yes” or detail must be confirmed with a written note.
- LP must sign and stamp.
- Application must be signed by a building owner or manager employee.
- Upload and submit via Portfolio Manager
  - File size must be less than 5 MB
    - When you scan the paper copy, use low resolution – 150 dpi
    - To reduce a file’s size using Adobe Acrobat: File → Save as → Reduced Size PDF → Make compatible with Acrobat 7.0 and later → Save

Final Steps

- Certification Review Team will notify Primary Contact for the Application when application has been approved or denied.
- Review Team may have questions about the application; if so, they will reach out to Primary Contact and LP
  - If resolved, award is sent within 4-6 weeks of approval.
  - If application is denied, Primary Contact will be notified and provided with recommendations for further action.

ENERGY STAR Certification

Re-certification

- Eligible to certify again 11 months after “Year Ending” date of last approved application.

- The re-certification process is the same as the initial certification and another site visit by an LP is required
  - Unless the property achieved certification in the previous year with a site visit, which would allow the site visit to be re-used.

Audits

Audits: Purpose and Goals

- Protect the integrity of the ENERGY STAR brand and assure that the existing application and review process is not awarding certification to properties that don't qualify.
- Use the audit process to identify ways to improve the certification process.

Audits: Requirements

- 12 months of utility bills for all meters and all fuel sources (invoices for bulk purchases)
- Explanation of how Property Use Details were verified
- Explanation of how Indoor Environmental Standards were verified
  - Indoor Air Quality
  - Thermal Comfort
  - Illumination
  - This will include submission of Indoor Environmental Quality Measurement Form

Audits in 2023

- Audit frequency is based on application quality
- All LPs should expect at least one audit annually
- LPs can expect to receive **at least two** audits in 2023 if the following criteria is met:
    1. LPs who did not complete the audit process for applications submitted in calendar year 2022, or had revisions required or received denials.
    2. LPs who did not complete the use detail verification process for applications submitted in calendar year 2022, or had revisions required or received denials.
    3. LPs meeting the follow up criteria from the 10/14/2022 or 3/30/2023 LP Accuracy Reports (5+ applications submitted, at least 10% with errors)

Audits: Error Identification

- If an error in the application is identified, EPA will work with the Primary Contact to determine if the property is still eligible for certification.
- If an LP is found to have falsified information on a building's certification application, EPA reserves the right to pursue recourse through the professional licensing authorities granting that individual's license, and under federal law.

Pop Quiz!

2. What should you keep on file/ensure that you'll have access to, in case your application is audited (select all that apply)?
    a. Notes from the site visit describing how all use details (number of main shift workers, number of computers, weekly operating hours, etc.) were verified
    b. Completed copy of the Indoor Environmental Quality Measurement Form (or recordings of all required measurements so the form can be filled in if needed)
    c. Deed to the building/documentation of ownership
    d. Copy of all utility bills covering the 12-month application period

Pop Quiz!

2. What should you keep on file/ensure that you'll have access to, in case your application is audited (select all that apply)?
    a. Notes from the site visit describing how all use details (number of main shift workers, number of computers, weekly operating hours, etc.) were verified
    b. Completed copy of the Indoor Environmental Quality Measurement Form (or recordings of all required measurements so the form can be filled in if needed)
    c. Deed to the building/documentation of ownership
    d. Copy of all utility bills covering the 12-month application period

ENERGY STAR Quiz for Licensed Professionals

- Test your knowledge of the rules and policies for verifying ENERGY STAR Certification applications for commercial buildings by taking the ENERGY STAR Quiz for Licensed Professionals

Thank you for Attending!

Questions?

Slides will be sent to all webinar registrants after today's session

If you have any questions about Portfolio Manager or the ENERGY STAR program, contact us at: www.energystar.gov/BuildingsHelp