

# GREEN GLOBES QUESTIONNAIRE - Healthcare Facility - Hospital

## BASIC INFORMATION

Is this a sample project to test the software?

- Yes, this is a sample to test the software  
 No, we intend to do a full assessment on this building

Who is the project leader?

What is the name of the building?

What is the street address?

City?

State?  Zip Code?

When was the building constructed?  
Tip: Specify year of construction OR choose an era.

- (exact year)  
 prior to 1960  
 prior to 1989  
 after 1990

What is the gross floor area of the building (in square feet)?

Tip: The gross floor area for the purposes of the assessment is the total heated floor area within the perimeter of the exterior walls of the building, including common, mechanical and structural support areas, and excludes unheated parking garage areas.

How many patient beds are there?

How many stories are there?

Is there underground parking?

- Yes  No

What are the main departments?

For example, Long Term Care, Radiology, Dietary, Laundry, Outpatient Clinics, Medsurge, etc.

The building has numerous departments  
The main departments are:

Who is the owner of the building?

Who is the building manager?

Tip: Provide the name and the company of the manager.

Building description?

Tip: Provide a short building description describing also any additional innovative energy and environmental measures.

## ENERGY

### Energy Consumption

The Energy Star Rating for this

- Individual Healthcare Building is:

Healthcare Campus is:

No ES rating

Tip: If the building is individually metered with 12 months of utility consumption data, please enter the details of the individual building utility consumption data, the individual building energy star rating if it is available along with checking the box for an individual building Energy Star Rating. If the building is part of a Healthcare campus rated by Energy Star, please check the box for Healthcare campus ES rating, enter the campus ES rating, and campus energy consumption data.

Does the building have individual metering installed and functional or a plan to install an individual building meter within the next 12 calendar months?

Tip: In the event of campus ES rating, this question will in part determine the pro-rated share of eligible energy performance credits that will be awarded. If your building is master metered on a HC campus, with an ES HC campus rating, your building is eligible for up to 80 points of energy performance credits if an individual meter was installed in the last 12 months, up to 40 points of the energy performance credits if you plan to install a meter within the next year, and up to 20 points if there are no existing individual meters. Buildings with individual building meter data for 12 months or more are not eligible for the award of energy performance credits based on the HC campus ES rating, individual building energy consumption data and/or ES rating must be entered to calculate and award energy performance credits.

- Installed more than 1 year ago
- Installed within the last year
- Plan to Install within the next year
- None/Other

Please specify the ending month of the 12 month period for which energy consumption figures are being entered.

Month	Year
Select	Select

Tip: Please select the month and year corresponding to the last month of the 12 month period for which you will be entering energy consumption figures.

What was the building's total energy bill for the 12 month period specified?

Tip: Include the total figures (including taxes) for the overall energy cost of the building. If detailed information is not available, please provide an estimate.

\$

What was the total energy consumption for each non-renewable fuel type, in total or by month, for the 12 month period specified?

Tip: Provide energy consumption for the specified 12 month period by inputting either total values (in any of the boxes provided), or monthly or bi-monthly amounts.

Energy Star Rating is used for scoring; however providing a 12 month history of energy usage allows the facility to evaluate potential radical changes in energy use, leading to further evaluation and assessment of systems and causes of anomalies in energy use for further remediation implementation.

Gas month 1:	cu. ft.	<input type="text"/>	Cost \$	<input type="text"/>
Gas month 2:	cu. ft.	<input type="text"/>	Cost \$	<input type="text"/>
Gas month 3:	cu. ft.	<input type="text"/>	Cost \$	<input type="text"/>
Gas month 4:	cu. ft.	<input type="text"/>	Cost \$	<input type="text"/>
Gas month 5:	cu. ft.	<input type="text"/>	Cost \$	<input type="text"/>
Gas month 6:	cu. ft.	<input type="text"/>	Cost \$	<input type="text"/>
Gas month 7:	cu. ft.	<input type="text"/>	Cost \$	<input type="text"/>
Gas month 8:	cu. ft.	<input type="text"/>	Cost \$	<input type="text"/>
Gas month 9:	cu. ft.	<input type="text"/>	Cost \$	<input type="text"/>
Gas month 10:	cu. ft.	<input type="text"/>	Cost \$	<input type="text"/>
Gas month 11:	cu. ft.	<input type="text"/>	Cost \$	<input type="text"/>
Gas month 12:	cu. ft.	<input type="text"/>	Cost \$	<input type="text"/>

Electricity month 1:	kWh.	<input type="text"/>	Cost \$	<input type="text"/>
Electricity month 2:	kWh.	<input type="text"/>	Cost \$	<input type="text"/>
Electricity month 3:	kWh.	<input type="text"/>	Cost \$	<input type="text"/>
Electricity month 4:	kWh.	<input type="text"/>	Cost \$	<input type="text"/>
Electricity month 5:	kWh.	<input type="text"/>	Cost \$	<input type="text"/>

Electricity month 6:	kWh.	<input type="text"/>	Cost \$	<input type="text"/>
Electricity month 7:	kWh.	<input type="text"/>	Cost \$	<input type="text"/>
Electricity month 8:	kWh.	<input type="text"/>	Cost \$	<input type="text"/>
Electricity month 9:	kWh.	<input type="text"/>	Cost \$	<input type="text"/>
Electricity month 10:	kWh.	<input type="text"/>	Cost \$	<input type="text"/>
Electricity month 11:	kWh.	<input type="text"/>	Cost \$	<input type="text"/>
Electricity month 12:	kWh.	<input type="text"/>	Cost \$	<input type="text"/>

Propane month 1:	Gal.	<input type="text"/>	Cost \$	<input type="text"/>
Propane month 2:	Gal.	<input type="text"/>	Cost \$	<input type="text"/>
Propane month 3:	Gal.	<input type="text"/>	Cost \$	<input type="text"/>
Propane month 4:	Gal.	<input type="text"/>	Cost \$	<input type="text"/>
Propane month 5:	Gal.	<input type="text"/>	Cost \$	<input type="text"/>
Propane month 6:	Gal.	<input type="text"/>	Cost \$	<input type="text"/>
Propane month 7:	Gal.	<input type="text"/>	Cost \$	<input type="text"/>
Propane month 8:	Gal.	<input type="text"/>	Cost \$	<input type="text"/>
Propane month 9:	Gal.	<input type="text"/>	Cost \$	<input type="text"/>
Propane month 10:	Gal.	<input type="text"/>	Cost \$	<input type="text"/>
Propane month 11:	Gal.	<input type="text"/>	Cost \$	<input type="text"/>
Propane month 12:	Gal.	<input type="text"/>	Cost \$	<input type="text"/>

Oil month 1:	Gal.	<input type="text"/>	Cost \$	<input type="text"/>
Oil month 2:	Gal.	<input type="text"/>	Cost \$	<input type="text"/>
Oil month 3:	Gal.	<input type="text"/>	Cost \$	<input type="text"/>
Oil month 4:	Gal.	<input type="text"/>	Cost \$	<input type="text"/>
Oil month 5:	Gal.	<input type="text"/>	Cost \$	<input type="text"/>
Oil month 6:	Gal.	<input type="text"/>	Cost \$	<input type="text"/>
Oil month 7:	Gal.	<input type="text"/>	Cost \$	<input type="text"/>
Oil month 8:	Gal.	<input type="text"/>	Cost \$	<input type="text"/>
Oil month 9:	Gal.	<input type="text"/>	Cost \$	<input type="text"/>
Oil month 10:	Gal.	<input type="text"/>	Cost \$	<input type="text"/>
Oil month 11:	Gal.	<input type="text"/>	Cost \$	<input type="text"/>
Oil month 12:	Gal.	<input type="text"/>	Cost \$	<input type="text"/>

Steam month 1:	lbs.	<input type="text"/>	Cost \$	<input type="text"/>
Steam month 2:	lbs.	<input type="text"/>	Cost \$	<input type="text"/>

Steam month 3:	lbs.	<input type="text"/>	Cost \$	<input type="text"/>
Steam month 4:	lbs.	<input type="text"/>	Cost \$	<input type="text"/>
Steam month 5:	lbs.	<input type="text"/>	Cost \$	<input type="text"/>
Steam month 6:	lbs.	<input type="text"/>	Cost \$	<input type="text"/>
Steam month 7:	lbs.	<input type="text"/>	Cost \$	<input type="text"/>
Steam month 8:	lbs.	<input type="text"/>	Cost \$	<input type="text"/>
Steam month 9:	lbs.	<input type="text"/>	Cost \$	<input type="text"/>
Steam month 10:	lbs.	<input type="text"/>	Cost \$	<input type="text"/>
Steam month 11:	lbs.	<input type="text"/>	Cost \$	<input type="text"/>
Steam month 12:	lbs.	<input type="text"/>	Cost \$	<input type="text"/>

Chilled Water month 1:	MBTU*	<input type="text"/>	Cost \$	<input type="text"/>
Chilled Water month 2:	MBTU*	<input type="text"/>	Cost \$	<input type="text"/>
Chilled Water month 3:	MBTU*	<input type="text"/>	Cost \$	<input type="text"/>
Chilled Water month 4:	MBTU*	<input type="text"/>	Cost \$	<input type="text"/>
Chilled Water month 5:	MBTU*	<input type="text"/>	Cost \$	<input type="text"/>
Chilled Water month 6:	MBTU*	<input type="text"/>	Cost \$	<input type="text"/>
Chilled Water month 7:	MBTU*	<input type="text"/>	Cost \$	<input type="text"/>
Chilled Water month 8:	MBTU*	<input type="text"/>	Cost \$	<input type="text"/>
Chilled Water month 9:	MBTU*	<input type="text"/>	Cost \$	<input type="text"/>
Chilled Water month 10:	MBTU*	<input type="text"/>	Cost \$	<input type="text"/>
Chilled Water month 11:	MBTU*	<input type="text"/>	Cost \$	<input type="text"/>
Chilled Water month 12:	MBTU*	<input type="text"/>	Cost \$	<input type="text"/>

\*MBTU stands for one million BTUs, which can also be expressed as one decatherm (10 therms).

## Lighting

Does the building incorporate any of the following high-efficiency lighting features:

Tip: Choose as many as apply.

<ul style="list-style-type: none"> <li>compact fluorescents? Tip: Compact fluorescents are suitable replacement for incandescent lighting, combining small size with a high level of performance.</li> </ul>	<input type="radio"/> 75 - 100% <input type="radio"/> 50 - 74% <input type="radio"/> 1 - 49% <input type="radio"/> none
<ul style="list-style-type: none"> <li>T8 or T5 fluorescent lamps? Tip: T8 or T5 fluorescent lamps are suitable for general lighting, are highly efficient and produce warmer colours than traditional cool white fluorescents.</li> </ul>	<input type="radio"/> 75 - 100% <input type="radio"/> 50 - 74% <input type="radio"/> 1 - 49% <input type="radio"/> none
<ul style="list-style-type: none"> <li>exit signs with light-emitting diodes (LEDs)? Tip: LED exit signs consume only very little electricity, and have a long life.</li> </ul>	<input type="radio"/> 75 - 100% <input type="radio"/> 50 - 74% <input type="radio"/> 1 - 49% <input type="radio"/> none

<ul style="list-style-type: none"> <li>• use of high-intensity fluorescent fixtures?            Tip: Where there are no high levels of light required over large areas, or where changing lamps is not difficult mark "not applicable".</li> </ul>	<input type="radio"/> 75 - 100% <input type="radio"/> 50 - 74% <input type="radio"/> 1 - 49% <input type="radio"/> none <input type="radio"/> N/A
<ul style="list-style-type: none"> <li>• task lighting in community / public spaces?            Tip: Task lighting (e.g. desk lamps) concentrate light in specific areas rather than brightly lighting an entire room.</li> </ul>	<input type="radio"/> Yes <input type="radio"/> No
<ul style="list-style-type: none"> <li>• task lighting in staff work areas?            Tip: Task lighting (e.g. desk lamps) concentrate light in specific areas rather than brightly lighting an entire room.</li> </ul>	<input type="radio"/> Yes <input type="radio"/> No
<ul style="list-style-type: none"> <li>• task lighting in patient rooms?            Tip: Task lighting (e.g. desk lamps) concentrate light in specific areas rather than brightly lighting an entire room.</li> </ul>	<input type="radio"/> Yes <input type="radio"/> No
<ul style="list-style-type: none"> <li>• installation of automated lighting controls?            Tip: These include lighting management software, digital addressable lighting interface (DALI), occupancy controls, daylight sensors or automatic dimmers.</li> </ul>	<input type="radio"/> 75 - 100% <input type="radio"/> 50 - 74% <input type="radio"/> 1 - 49% <input type="radio"/> none
<p>What percentage of all lighting in the facility is "high efficiency lighting"?</p> <p>Tip: Estimate the percentage either by floor area of occupied space or by numbers of lights.</p>	<input type="radio"/> 75 - 100 <input type="radio"/> 50 - 75 <input type="radio"/> 1 - 50 <input type="radio"/> none
<b>Boilers</b>	
<p>Are the boilers 20 years old or more?</p> <p>Tip: The average life cycle of a boiler is 25 years. A boiler older than 20 years may need to be replaced. If there are no boilers, mark "not applicable".</p>	<input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> N/A (no boilers)
<p>What percentage of boilers in the facility are high-efficiency?</p> <p>Tip: These incorporate sealed combustion and pulse technology to obtain efficiencies of 83% to 90%. They can be either condensing (recuperative) or power/fan assisted. If there are no boilers, mark "not applicable".</p>	<input type="radio"/> 50 - 100 <input type="radio"/> 25 - 49 <input type="radio"/> < 25 <input type="radio"/> N/A (no boilers)
<p>Do the boilers have automatic vent dampers?</p> <p>Tip: These are placed in the flue pipe between the heating unit and the chimney to restrict the flow of heated air up the chimney. If there are no boilers, mark "not applicable".</p>	<input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> N/A (no boilers)
<b>Controls</b>	
<p>Is temperature setback and weather compensation implemented in non-critical areas?</p> <p>Tip: These refer to adjustments to the building temperature based on occupancy and outside temperatures, to reduce heating or cooling requirements. Due to critical areas within the hospital, this operating features is not always appropriate.</p>	<input type="radio"/> Yes <input type="radio"/> No
<p>Does the building have building automation systems (BAS)?</p> <p>Tip: These systems optimize the start-up and performance of HVAC equipment, improve the interaction of mechanical subsystems, increase occupant comfort, lower energy use and provide off-site building control. Partial BAS can consist of items such as snow and ice sensing controls that operate garage ramp heaters or domestic hot water system (DHW) controls.</p>	<input type="radio"/> Full Tip: There is full BAS. <input type="radio"/> Partial Tip: There is a partial BAS. <input type="radio"/> None Tip: There is no BAS.
<b>Hot Water</b>	
<p>Does the building have high-efficiency water heating equipment?</p> <p>Tip: Equipment may consist of condensing water heaters, "tankless" (instantaneous) water heaters, heat pump water heaters or solar water heating technology. Note that ASHRAE 90.1B IES tanks are not considered high-efficiency for this assessment.</p>	<input type="radio"/> Yes <input type="radio"/> No
<p>Are there hot water saving devices?</p> <p>Tip: Devices that reduce the rate and duration of water-flow in faucets can lower hot water costs.</p>	<input type="radio"/> Yes <input type="radio"/> No
<p>Are hot water temperatures maintained between 105° and 120° F for clinical areas, 120° F for dietary, and 160° F for laundry?</p> <p>Tip: Measure temperatures at the taps. Reference 2010 Guidelines for Design and Construction of Health Care Facilities.</p>	<input type="radio"/> Yes <input type="radio"/> No
<b>Other Energy Efficiency Features</b>	
<p>Are there other energy efficiency measures such as:</p>	

<p>* Percentage of chillers in the facility that are high-efficiency?  <b>Tip:</b> High efficiency chillers are typically rated at full-load efficiency in the range of 0.46 - 0.65 kW/ton compared to old CFC-11 or CFC-12 chillers which have an efficiency in the range of 0.72 - 0.90 kW/ton. If there is no cooling, mark "not applicable".</p>	<input type="radio"/> 50 - 100 <input type="radio"/> 25 - 49 <input type="radio"/> < 25 <input type="radio"/> N/A (no chillers)
<p>* Variable speed drives?  <b>Tip:</b> These electronic devices control motor speed by varying the frequency of the electrical supply, thereby reducing energy consumption, improving fan or pump control, and extending the life of the equipment.</p>	<input type="radio"/> Yes <input type="radio"/> No
<p>* Combined heat and power (CHP) plants?  <b>Tip:</b> Cogeneration is the simultaneous production of heat and electrical or mechanical power achieved by capturing and recycling the rejected heat that escapes from an electricity generation process in the building. Cogeneration can be used to reduce peak demand.</p>	<input type="radio"/> Yes <input type="radio"/> No
<p>* Energy recovery ventilation systems?  <b>Tip:</b> Energy recovery ventilation systems reclaim waste energy from the exhaust air stream and use that heat to condition the incoming fresh air.</p>	<input type="radio"/> Yes <input type="radio"/> No
<p>Are other energy-saving systems or measures being used?  <b>Tip:</b> Describe any other energy-saving systems or measures (e.g. deep lake cooling, displacement ventilation, underfloor air distribution, dehumidification methods etc.) used to save energy.            Description: <input type="text"/></p>	<input type="radio"/> Yes <input type="radio"/> No
<b>Green Energy</b>	
<p>Is "green electricity" purchased?  <b>Tip:</b> Many energy retailers now offer energy produced from certified solar, water, wind and recovery technologies.</p>	<input type="radio"/> Yes <input type="radio"/> No
<p>Does the building utilize any of the following renewable on-site energy sources:  <b>Tip:</b> Renewable energy sources do not deplete natural resources.</p>	
<p>* Active Solar?  <b>Tip:</b> This is generally used to increase the temperature of large volumes of water or air in commercial and industrial buildings.</p>	<input type="radio"/> Yes <input type="radio"/> No
<p>* Wind?  <b>Tip:</b> Wind turbines are generally used in stand-alone or wind farm applications to generate electricity.</p>	<input type="radio"/> Yes <input type="radio"/> No
<p>* Photo Voltaic?  <b>Tip:</b> Photovoltaics generate electricity. They are most effective when used during the day, avoiding the need for battery or other storage systems.</p>	<input type="radio"/> Yes <input type="radio"/> No
<p>* Ground Source?  <b>Tip:</b> Using the temperature differential between above ground and below ground (or ground water), fluid is circulated in an underground (or underwater) loop. The energy collected is used for air and/or water heating. The system can be reversed in summer to provide cooling instead of heating.</p>	<input type="radio"/> Yes <input type="radio"/> No
<p>* Bio-mass?  <b>Tip:</b> Fuel such as round wood, wood and agricultural waste, prepared wood fuels, landfill gas and digester gas are burned using high efficiency combustion to provide space and/or water heating.</p>	<input type="radio"/> Yes <input type="radio"/> No
<p>What percentage of the building's total energy use is supplied by these renewable sources?  <b>Tip:</b> Enter percentage of total annual energy requirements supplied from above sources.</p>	<input type="radio"/> > 10% <input type="radio"/> < 10% <input type="radio"/> 0%
<b>Envelope</b>	
<p>Has the current performance and condition of the building envelope been assessed in terms of:  <b>Tip:</b> The condition of the building envelope is critical to the building performance. An assessment of the current performance and condition of the envelope should consider the issues of relative humidity temperature and interior pressure.</p>	
<p>* condensation?  <b>Tip:</b> Consider the differences in temperature on the inner surface of the building and the water vapour condensation on the surface of thermal bridges-the mould and mildew control points.</p>	<input type="radio"/> Yes <input type="radio"/> No
<p>* moist air transfer?  <b>Tip:</b> Consider the envelope permeability and the ability of materials to withstand, without deterioration, periods of freezing and thawing.</p>	<input type="radio"/> Yes <input type="radio"/> No
<p>* air flow?  <b>Tip:</b> Consider the air pressure differences and air-leakage characteristics of the envelope.</p>	<input type="radio"/> Yes <input type="radio"/> No
<p>* heat transfer?  <b>Tip:</b> Assess the thermal resistance and quantity of heat transferred through of the envelope.</p>	<input type="radio"/> Yes <input type="radio"/> No
<p>Are there energy-efficient windows and doors?  <b>Tip:</b> Energy-efficient windows consist of, at minimum, double-glazed, low - e windowpanes with frames spacers that have high thermal integrity. High performance weatherstripping on doors and windows also increases their thermal performance.</p>	<input type="radio"/> 81 - 100% <input type="radio"/> 61 - 80% <input type="radio"/> 41 - 60% <input type="radio"/> 21 - 40%

	<input type="radio"/> 1 - 20% <input type="radio"/> none
Does the building have appropriate shading or reflective film installed to reduce the cooling load? <b>Tip: Exterior awnings, exterior and interior solar blinds, green roofs and exterior vegetation, high-albedo (reflective) roofing materials, and low-e film reduce cooling loads and reduce glare.</b>	<input type="radio"/> 67 - 100% <input type="radio"/> 34 - 66% <input type="radio"/> 1 - 33% <input type="radio"/> none

Has the building envelope been air-sealed in the following areas:  
**Tip: Stack effect and air leakage through the building envelope can cause significant heat loss and deterioration of the building envelope. One indication of a leaky building is when, in the winter, the occupants in the lower levels complain of draft and cold and those in upper levels complain of over-heating.**

* The top part of the building? <b>Tip: Exterior openings and roof-to-wall connections of mechanical penthouse and floors in the upper part of the building.</b>	<input type="radio"/> Yes <input type="radio"/> No
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* The bottom part of the building? <b>Tip: Exterior openings and floor slab-to-wall connections and service core of the parking areas, entrance doors and the floors in the lower third of the building.</b>	<input type="radio"/> Yes <input type="radio"/> No
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* Vertical shafts and elevators? <b>Tip: Service ducts and conduit penetrations, including excessive cable holes in the elevator shafts.</b>	<input type="radio"/> Yes <input type="radio"/> No
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Does the insulation of the walls comply with the recommendation of the building condition report? <b>Tip: Because of the factors involved, proper application of the insulation should be guided by the federal or state energy building code. Where the insulation meets federal or state energy building code mark "not applicable".</b>	<input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> N/A
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Does the insulation of the roof comply with the recommendation of the building condition report? <b>Tip: Because of the factors involved, proper application of the insulation should be guided by the federal or state energy building code. Where the insulation meets federal or state energy building code mark "not applicable".</b>	<input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> N/A
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### Energy Policy

<p>Is there an energy policy endorsed by senior management?  <b>Tip: This should be a public document that expresses commitments to establish energy targets, assign responsibilities, monitor performance, and undertake an annual review and report.</b></p>	<input type="radio"/> There is a formal energy management plan that includes: * Energy Management Plan * Set Energy Targets * Energy Action Plan <input type="radio"/> No * there is no energy management policy <input type="radio"/> Other * there is no formal (documented) energy management policy, but management operates with a view to avoiding excessive energy use
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### Energy Audit

Has the building had an energy audit within the past three years that included recommendations with costs, savings and a payback period? <b>Tip: An energy audit identifies areas that unnecessarily consume excessive amount energy, and provides the most cost-effective solutions with costs, savings and payback period.</b>	<input type="radio"/> Yes <input type="radio"/> No
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Which of the following systems were audited:  
**Tip: If no audit was done, mark "no" or "n/a".**

* lighting system?	<input type="radio"/> Yes <input type="radio"/> No
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* heating plant?	<input type="radio"/> Yes <input type="radio"/> No
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* cooling plant?	<input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> N/A
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* domestic hot water system?	<input type="radio"/> Yes <input type="radio"/> No
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* HVAC distribution system?	<input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> N/A
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* major medical equipment?	<input type="radio"/> Yes <input type="radio"/> No
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* staff & personal use appliances?	<input type="radio"/> Yes <input type="radio"/> No
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* building envelope?	<input type="radio"/> Yes <input type="radio"/> No
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* solar and renewable resource potential?	<input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> N/A
<b>Energy Management, Monitoring and Targeting</b>	
Is there a energy management (reduction) plan to address issues raised in the energy audit that includes: Tip: If no energy audit was done, mark "no".	
* base line energy usage & summary? Tip: If no energy audit was done, mark "no".	<input type="radio"/> Yes <input type="radio"/> No
* target goals? Tip: If no energy audit was done, mark "no".	<input type="radio"/> Yes <input type="radio"/> No
* steps to meet target goals? Tip: If no energy audit was done, mark "no".	<input type="radio"/> Yes <input type="radio"/> No
* evaluation and summary of outcomes after plan implementation? Tip: If no energy audit was done, mark "no".	<input type="radio"/> Yes <input type="radio"/> No
Is energy use being monitored? Tip: Monitoring should be reviewed monthly. This can be done by installing sub-meters in several locations, or by listing all energy intensive equipment and corresponding hours that it is being used.	<input type="radio"/> Yes <input type="radio"/> No
Are energy usage targets set? Tip: Targets are best expressed as a percentage in decrease of energy used.	<input type="radio"/> Yes <input type="radio"/> No
Is there evidence of movement towards these energy targets by tracking patient unique types over time to better understand the usage and costs comparable with the user needs? Tip: Review energy figures for the past 3 years. If there are no energy figures or no targets, mark "no". Understanding patient unique types and number of staff required for specific functions, allows a facility to identify energy increases and decreases in consumption that are not solely based upon the energy consumption data, but also take into consideration the acuity of patients being cared for and the potential increase of staff required to care for higher acuity patients. These two factors provide additional insight when evaluating peaks and valleys in energy usage.	<input type="radio"/> Yes <input type="radio"/> No
Have steps been taken to analyze and reduce peak energy demand? Tip: This means monitoring total monthly energy use and peak demand in 15-30 minute increments using an interval meter on a week day and a weekend-day for each season. Finding measures to flatten the load profile makes the facility more attractive to power vendors.	<input type="radio"/> Yes <input type="radio"/> No
<b>Energy Training</b>	
Is the building staff, including new employees, regularly trained and updated every six months on the design and implementation of an energy efficiency improvement program? Tip: Training needs should be identified for each staff member. Training updates should be provided on a regular, ongoing basis. New employees should be familiarized with the building's operations.	<input type="radio"/> Yes <input type="radio"/> No
<b>Financial Resources</b>	
Are there financial resources to improve the energy efficiency of the building or is the building participating in a program for energy efficiency upgrades? Tip: This could be an energy efficiency improvement budget or participation in a program that provides financial assistance for energy upgrades.	<input type="radio"/> Yes <input type="radio"/> No
<b>Sub-metering</b>	
Is the building sub metered by departments or designated floors?	<input type="radio"/> 50 - 100% <input type="radio"/> 25 - 49% <input type="radio"/> 1 - 24% <input type="radio"/> None <input type="radio"/> N/A
Does the building have sub-metering of the following major energy uses: Tip: This is critical to managing energy for it makes it possible to establish the building-load profile and demand structure.	
* gas? Tip: This is critical to managing energy for it makes it possible to establish the building-load profile and demand structure.	<input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> N/A
* electric? Tip: This is critical to managing energy for it makes it possible to establish the building-load profile and demand structure.	<input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> N/A
* water? Tip: This is critical to managing energy for it makes it possible to establish the building-load profile and demand structure.	<input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> N/A
* MRI / radiology equipment? Tip: This is critical to managing energy for it makes it possible to establish the building-load profile and demand structure.	<input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> N/A
* Research / Lab Space? Tip: This is critical to managing energy for it makes it possible to establish the building-load profile and demand structure.	<input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> N/A

<b>Operating Manual</b>	
Is there a readily available operating manual covering standard control settings and operating instructions for all services equipment that may affect the energy consumption? Tip: A user-friendly manual listing all the building services, and describing their function, with operating instructions, standard control settings, and basic trouble-shooting makes it possible to handle minor problems and make adjustments without interrupting the service or having to call in the contractor.	<input type="radio"/> Yes <input type="radio"/> No
<b>Maintenance Schedules</b>	
Does the regular mechanical systems maintenance schedule include: Tip: The maintenance schedules should be documented and records maintained.	
* measurement of boiler efficiency? Tip: If there are no boilers, mark "not applicable".	<input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> N/A
* checks on the correct operation of ventilation and cooling controls? Tip: If there is no HVAC, mark "not applicable".	<input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> N/A
* checking of temperature, humidity and fresh air controls to ensure they are set correctly and are responding as intended?	<input type="radio"/> Yes <input type="radio"/> No
* identification and investigation of all occurrences of excess energy use?	<input type="radio"/> Yes <input type="radio"/> No
* checking of air supply grilles to ensure they are not blocked and are delivering fresh air as required?	<input type="radio"/> Yes <input type="radio"/> No
* checks for refrigerant leaks? Tip: If there is no central cooling plant, mark "not applicable".	<input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> N/A
* checks on air-handling units, cooling towers and boilers? Tip: If there is no air handling unit, mark "not applicable".	<input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> N/A
* replacement of filters? Tip: If there is no air handling unit, mark "not applicable".	<input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> N/A
* cleaning and sterilizing of wet regions in the air conditioning system and checking for accumulation of dirt? Tip: If there is no air handling unit, mark "not applicable".	<input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> N/A
Is there a preventive maintenance program for building systems, which takes into account their lifecycle? Tip: Preventive maintenance differs from regular maintenance in that it takes into account that certain systems components require overhauling or replacement after a certain age or at certain intervals.	<input type="radio"/> Yes <input type="radio"/> No

<b>Public Transportation</b>	
Does the building have access to public transport within 0.3 miles? Tip: Good access to public transport is defined as at least one bus or streetcar stop, or train or underground station within 500 meters of the building.	<input type="radio"/> Yes <input type="radio"/> No

Is there service at least every 15 minutes during rush hour? Tip: Commuters expect public transport service at least every 15 minutes during rush-hour periods. If the facility is located in a rural area that does not have a rush hour, mark "not applicable".	<input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> N/A
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<b>Cycling Facilities</b>	
Are there bike racks sheltered from rain? Tip: Providing bicycle facilities for min 5% of occupants at destinations encourages cycling to work.	<input type="radio"/> Yes <input type="radio"/> No
Are there changing facilities and showers for staff? Tip: Although cyclists and joggers can change in washrooms and store their clothes in the workplace, dedicated facilities do more to encourage use of bicycles for regular commuting. Provide changing facilities and showers for min 5% of occupants.	<input type="radio"/> Yes <input type="radio"/> No

<b>Other Measures</b>	
Are there other measures to reduce car dependency: Tip: By providing a database where staff and tenants can share postal code information, this enables them to make carpooling arrangements. Building-wide purchase of transit passes can provide public transportation at reduced rate. Improving the site access for pedestrian and bikes through signage and/or landscaping can also help to decrease car dependency.	
* car pooling?	<input type="radio"/> Yes <input type="radio"/> No
* staff transit passes?	<input type="radio"/> Yes <input type="radio"/> No
* hospital vans for patients?	<input type="radio"/> Yes <input type="radio"/> No
* patient transit passes?	<input type="radio"/> Yes <input type="radio"/> No
* designated car pool vehicle parking?	<input type="radio"/> Yes <input type="radio"/> No

## WATER

### Water Consumption

Please specify the ending month of the 12 month period for which water consumption figures are being entered.

Tip: Please select the month and year corresponding to the last month of the 12 month period for which you will be entering water consumption figures.

Month  Year

What was the building's total water bill for the 12 month period specified?

Tip: Include the figures for the overall water cost of the building. If detailed information is not available, please provide an estimate.

\$

What was the total water consumption, in total or by month, for the 12 month period specified?

Tip: Provide water consumption for the specified 12 month period by inputting either total values (in any of the boxes provided), or monthly or bi-monthly amounts.

Water month:	cu. ft.	Cost \$
Water month 1:	<input type="text"/>	<input type="text"/>
Water month 2:	<input type="text"/>	<input type="text"/>
Water month 3:	<input type="text"/>	<input type="text"/>
Water month 4:	<input type="text"/>	<input type="text"/>
Water month 5:	<input type="text"/>	<input type="text"/>
Water month 6:	<input type="text"/>	<input type="text"/>
Water month 7:	<input type="text"/>	<input type="text"/>
Water month 8:	<input type="text"/>	<input type="text"/>
Water month 9:	<input type="text"/>	<input type="text"/>
Water month 10:	<input type="text"/>	<input type="text"/>
Water month 11:	<input type="text"/>	<input type="text"/>
Water month 12:	<input type="text"/>	<input type="text"/>

### Water Conserving Features

Are there the following water-conserving fixtures:

\* low flow toilets that use 1.28 GPF or less water?

- 81 - 100%
- 61 - 80%
- 41 - 60%
- 21 - 40%
- 1 - 20%
- none

\* ultra low flush urinals that use .5 GPF or less?

- 81 - 100%
- 61 - 80%
- 41 - 60%
- 21 - 40%
- 1 - 20%
- none

\* automatic valve controls and/or proximity detectors?

- 81 - 100%
- 61 - 80%
- 41 - 60%
- 21 - 40%
- 1 - 20%
- none

\* low flow or laminar flow faucets (2.2 GPM) for public restrooms?

- Yes  No

\* low flow or laminar flow faucets (1.5 GPM) for patient room bathrooms?

- Yes  No

* digital x-ray versus film x-ray?	<input type="radio"/> Yes <input type="radio"/> No
* low flow shower heads?	<input type="radio"/> Yes <input type="radio"/> No
* utilization of microfiber cleaning systems? Tip: Microfiber cleaning programs include the advantage of reducing risk of spread of infection and less water chemical usage.	<input type="radio"/> Yes <input type="radio"/> No
* hand sanitizers / rubs?	<input type="radio"/> Yes <input type="radio"/> No
* re-use of water from medical or mechanical equipment?	<input type="radio"/> Yes <input type="radio"/> No
* water saving kitchen dishwashing equipment?	<input type="radio"/> Yes <input type="radio"/> No
* water saving sterilization process/equipment?	<input type="radio"/> Yes <input type="radio"/> No
Does the landscaping minimize the need for irrigation? Tip: Xeriscaping involves the use of plant species that require little watering, and techniques that help reduce the amount of water needed for irrigation. If the building covers more than 80% of the site area, i.e. there is no land available for landscaping, mark "not applicable".	<input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> N/A
Are other sources of water used for irrigation such as:	
* Rainwater? Tip: Rainwater is a water collected specifically for irrigation in rain cisterns. If the building covers more than 80% of the site area, i.e. there is no land available for landscaping, mark "not applicable".	<input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> N/A
Does the building use once-through water-cooled units? Tip: Some equipment is cooled by a single-pass flow of water, often from a municipal water supply. After passing through and cooling the equipment, the water is discarded.	<input type="radio"/> Yes <input type="radio"/> No
<b>Water Management</b>	
Is there a written policy intended to minimize water use and encourage water conservation that includes: Tip: Water Conservation Policy should express the commitments to reduction of demand for water and for establishment of goals and strategies to reduce water consumption.	
* base line water usage & summary? Tip: Water Conservation Policy should express the commitments to reduction of demand for water and for establishment of goals and strategies to reduce water consumption.	<input type="radio"/> Yes <input type="radio"/> No
* water reduction target goals & steps to meet targets? Tip: Water Conservation Policy should express the commitments to reduction of demand for water and for establishment of goals and strategies to reduce water consumption.	<input type="radio"/> Yes <input type="radio"/> No
* evaluation and summary of outcomes after plan implementation? Tip: Water Conservation Policy should express the commitments to reduction of demand for water and for establishment of goals and strategies to reduce water consumption.	<input type="radio"/> Yes <input type="radio"/> No
Is water consumption being monitored? Tip: Monitoring can only be done provided there is a meter. Metering and checking bills help to verify consumption and to redflag occurrences of unusual and excessive consumption, which should be investigated and corrected - resulting in savings.	<input type="radio"/> Yes <input type="radio"/> No
Has a water audit been done within the last three years? Tip: The water audit report must include:	
<ul style="list-style-type: none"> <li>  Water billing analysis with benchmarking observations</li> <li>  A summary of major water-consuming systems in the buildings</li> <li>  A list of potential water conservation opportunities based on walk-through audit of the facility</li> </ul>	<input type="radio"/> Yes <input type="radio"/> No
An audit should provide recommendations for maintenance procedures that may need to be revised, and identify water-using equipment that should be upgraded.	
Are there water-reduction targets? Tip: Water targets should be established in gallons/ft <sup>2</sup> , or as a percentage reduction in gallons/person.	<input type="radio"/> Yes <input type="radio"/> No
Are there regular procedures for checking and fixing leaks? Tip: Periodic checks for leaks can be done by recording the water-meter reading before and after any long period when there is no water use, for example late at night and again early in the morning.	<input type="radio"/> Yes <input type="radio"/> No

## RESOURCES

## Facilities for Storing and Handling Recyclable Materials

Are there separate storage / handling facilities for:

Tip: A separate designated area for storage will help to avoid recycled waste being inadvertently hauled away with other refuse.

\* paper products (other than cardboard)?

Tip: A separate designated area for storage will help to avoid recycled waste being inadvertently hauled away with other refuse.

Yes  No

\* cardboard?

Tip: A separate designated area for storage will help to avoid recycled waste being inadvertently hauled away with other refuse.

Yes  No

\* glass?

Tip: A separate designated area for storage will help to avoid recycled waste being inadvertently hauled away with other refuse.

Yes  No

\* metal?

Tip: A separate designated area for storage will help to avoid recycled waste being inadvertently hauled away with other refuse.

Yes  No

\* plastic beverage and/or food containers?

Tip: A separate designated area for storage will help to avoid recycled waste being inadvertently hauled away with other refuse.

Yes  No

\* pharmaceutical plastic bottles?

Tip: A separate designated area for storage will help to avoid recycled waste being inadvertently hauled away with other refuse.

Yes  No

\* saline and other types of IV bags?

Tip: A separate designated area for storage will help to avoid recycled waste being inadvertently hauled away with other refuse.

Yes  No

\* furniture?

Tip: A separate designated area for storage will help to avoid recycled waste being inadvertently hauled away with other refuse.

Yes  No

\* electronics and batteries?

Tip: A separate designated area for storage will help to avoid recycled waste being inadvertently hauled away with other refuse.

Yes  No

\* re-usable sharps containers?

Tip: A separate designated area for storage will help to avoid recycled waste being inadvertently hauled away with other refuse.

Yes  No

Are there collection points for sorting the following near areas where the waste is generated and / or stored:

Tip: Unless there are collection points near the areas where waste is generated, it is unlikely that occupants will recycle.

\* paper products (other than cardboard)?

Tip: Unless there are collection points near the areas where waste is generated, it is unlikely that occupants will recycle.

Yes  No

\* cardboard?

Tip: Unless there are collection points near the areas where waste is generated, it is unlikely that occupants will recycle.

Yes  No

\* glass?

Tip: Unless there are collection points near the areas where waste is generated, it is unlikely that occupants will recycle.

Yes  No

\* metal?

Tip: Unless there are collection points near the areas where waste is generated, it is unlikely that occupants will recycle.

Yes  No

\* plastic beverage and/or food containers?

Tip: Unless there are collection points near the areas where waste is generated, it is unlikely that occupants will recycle.

Yes  No

\* pharmaceutical plastic bottles?

Tip: Unless there are collection points near the areas where waste is generated, it is unlikely that occupants will recycle.

Yes  No

\* saline and other types of IV bags?

Tip: Unless there are collection points near the areas where waste is generated, it is unlikely that occupants will recycle.

Yes  No

\* furniture?

Tip: Unless there are collection points near the areas where waste is generated, it is unlikely that occupants will recycle.

Yes  No

\* electronics and batteries?

Tip: Unless there are collection points near the areas where waste is generated, it is unlikely that occupants will recycle.

Yes  No

\* re-usable sharps containers?

Tip: Unless there are collection points near the areas where waste is generated, it is unlikely that occupants will recycle.

Yes  No

Is there a composting program in place?

Tip: Composting may be done on-site or at a special centralized facility.

Yes  No

## Waste Reduction Workplan

Has a waste audit been done within the last three years?

Tip: A waste audit can be conducted in-house, or using a waste-management firm. It should identify the types and quantities of waste generated in the building and assess which waste materials are produced in sufficient quantities to warrant recycling.

Yes  No

Is regular monitoring of waste conducted?

Tip: This is done by recording the weight or volume of garbage that is leaving the building.

Yes  No

<p>What is the current diversion rate?  <b>Tip: Diversion rate is used by commercial contractors to report the rate at which non-hazardous solid waste is diverted from entering a disposal facility.</b></p>	<input type="radio"/> >85% <input type="radio"/> 75-84% <input type="radio"/> 50-74% <input type="radio"/> 25-49% <input type="radio"/> Unknown or below 25%
<p>Are there waste-reduction targets?  <b>Tip: Waste measurements should be expressed both in absolute terms (e.g. the total amounts of garbage and recycling) as well as per capita amounts (e.g. the amounts of garbage and recycling per occupant).</b></p>	<input type="radio"/> Yes <input type="radio"/> No
<p>Is there a construction, renovation and demolition waste management policy?  <b>Tip: The U.S. Environmental Protection Agency (EPA) estimates that 136 million tons of building-related construction and demolition debris was generated in the United States in 1996. This can be reduced by implementing source separation and recycling programs on site. The program should meet the minimal requirements of the jurisdiction (e.g. 3R Code of Practice). The waste specification should address recycling of corrugated cardboard, metals, concrete blocks, clean dimensional wood, plastic, glass, gypsum board and carpet.</b></p>	<input type="radio"/> Yes <input type="radio"/> No

### Site Pollution

<p>Is the building site free of contamination?</p>	<input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Unknown
<p>If the site is known to be free of contamination, which of the following is this based on:  <b>Tip: There should be evidence that the site is free of contamination; or that it has been remediated to an acceptable level.</b></p>	
<p>• Document Search?  <b>Tip: A document search has been conducted and there is no reason to suspect that the site is contaminated (i.e. it has never had underground storage tanks (USTs) or outside storage tanks (ASTs), it was always an office or other facility that did not use chemicals, it is not situated near gas stations or other problem industries, there have been no previous potential problem businesses on the site).</b></p>	<input type="radio"/> Yes <input type="radio"/> No
<p>• Phase 1 Environmental Assessment?  <b>Tip: A Phase 1 Environmental Site Assessment has been conducted that proves the site to be free of contamination.</b></p>	<input type="radio"/> Yes <input type="radio"/> No
<p>• Confirmation Phase 2 clean site or Phase 3 Clean Up Report?  <b>Tip: The site was once contaminated, but has been remediated to an acceptable level, as indicated by a Phase 3 Cleanup Report.</b></p>	<input type="radio"/> Yes <input type="radio"/> No
<p>If the site is known to be contaminated are efforts being made to clean it up?  <b>Tip: If the site is known to be uncontaminated, mark "not applicable".</b></p>	<input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> N/A

### Site Enhancement

<p>Are there indications that the site has been enhanced, such as an increase of indigenous species, the re-establishment of vegetation corridors or the implementation of erosion-control measures?  <b>Tip: The ecological value can be enhanced by increasing the rooftop vegetation, number of indigenous plant species, "lights-out" policies and programs to protect birds, or creating a small natural "oasis" on the site. If the building occupies over 90% of the site area, mark this "not applicable".</b></p>	<input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> N/A
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## EMISSIONS, EFFLUENTS AND POLLUTION CONTROLS

### Boiler Emissions

<p>What percentage of the building's boilers have low NOx emission rates?  <b>Tip: A low-NOx emitting boiler produces less than 30ppm of NOx emissions (0.037 lb NOx) per million BTU of heat input. If there are no boilers, mark "not applicable".</b></p>	<input type="radio"/> None <input type="radio"/> 25% <input type="radio"/> 50% <input type="radio"/> 75% <input type="radio"/> 100% <input type="radio"/> N/A
<p>Are boiler maintenance records kept for the following:  <b>Tip: The maintenance should take place once or twice per year. If there are no boilers, mark "not applicable".</b></p>	
<p>• cleaning burners?  <b>Tip: The maintenance should take place once or twice per year. If there are no boilers, mark "not applicable".</b></p>	<input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> N/A
<p>• monitoring of controls?  <b>Tip: The maintenance should take place once or twice per year. If there are no boilers, mark "not applicable".</b></p>	<input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> N/A
<p>• flue gas analysis?  <b>Tip: The maintenance should take place once or twice per year. If there are no boilers, mark "not applicable".</b></p>	<input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> N/A

applicable”.

\* work order process?

Tip: The maintenance should take place once or twice per year. If there are no boilers, mark “not applicable”.

Yes  No  N/A

## Refrigerants

Select applicable

R11

Tip: R11 (CFC 11), ODP = 1.0, GWP = 1500

R12

Tip: R12 (CFC 12), ODP = 1.0, GWP = 4500

R22

Tip: R22 (HCFC22), ODP = 0.05, GWP = 510

HCFC123

Tip: HCFC123, ODP = 0.014, GWP = 29

HFC134a

Tip: HFC134a, ODP = 0, GWP = 420

Other

Tip: Other refrigerants with an ODP of 0

N/A

Tip: The building does not use any refrigerants

What type of refrigerant is used for most of the cooling in the building chiller system?

Tip: The ODP for a substance is the measure of its contribution to ozone depletion relative to that of CFC11 - the higher the value, the more damaging it is to the ozone layer. Another concern with regards to refrigerants is global warming potential (GWP). If there are no ODS, or if the building is using a distributed system (e.g. heat pumps), mark “not applicable”.

Are there automatic refrigerant leak detectors?

Tip: There should be refrigerant sensors in machinery rooms where refrigerant vapor from a leak may be concentrated. In well-ventilated areas, leak detection should consist of air-sampling lines connected to specific parts of the refrigeration system, such as the compressor housing. If there are no ODS, mark “not applicable”.

Yes  No

N/A

Is the system capable of pumping down all the refrigerant into a suitable container?

Tip: Recovery can be to a system receiver or to a certified recycling or recovery machine. Refrigerant recovery should take place prior to opening equipment for maintenance, service, repair or disposal. It should be done according to procedures set out in the Air-Conditioning and Refrigeration Institute (ARI) Standard 740, “Refrigerant Recovery/Recycling Equipment”. If there are no ODS, mark “not applicable”.

Yes  No

N/A

## Management of Ozone Depleting Refrigerants

Does the management program for ODS include:

Tip: Maintenance of the refrigeration system can reduce operating costs by improving the chiller performance, avoiding costly repairs, and reducing the need for refrigerant replacement. If there are no ODS, mark “not applicable”.

\* inventory of refrigerants and records?

Yes  No

N/A

\* maintenance reports, loss reports, and leak test results?

Yes  No

N/A

\* operational staff training?

Yes  No

N/A

\* periodic leak testing?

Yes  No

N/A

Is there a phase-out plan for ozone-depleting refrigerants?

Tip: Under Title VI of the Clean Air Act Amendments of 1990, the US must reduce the amount of HCFCs imported and produced nationwide by 35 percent in 2004. If there are no ODS, mark “not applicable”.

Yes  No

N/A

Is there a maintenance contract with a certified contractor or in-house certified staff to complete regular maintenance for

<p>the cooling system?  <b>Tip: The contract should be for regular maintenance and monitoring of the refrigeration system, the pipework and the leak detection system. If there are no ODS, mark "not applicable".</b></p>	<input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> N/A
<b>Halons</b>	
<p>Are there halon fire-protection systems in the building?  <b>Tip: If present, these are most likely to be found in older, central computer rooms. Halons are potent ozone destroyers. Halon 1211 (or BCF) has an ODP of approximately 3, while halon 1301 (or BTM), has an ODP of approximately 10.</b></p>	<input type="radio"/> Yes <input type="radio"/> No
<b>Waste Water Effluents</b>	
<p>Are floor drains protected in areas where chemicals are stored?  <b>Tip: At a minimum, there should be containment of chemicals used in building operations, such as oils, solvents, rust inhibitors, biocides and pesticides. This can consist of plastic trays to store the materials.</b></p>	<input type="radio"/> Yes <input type="radio"/> No
<p>Are roof drains connected to sanitary or combined sewers?  <b>Tip: Disconnecting roof drains from sanitary or combined sewers avoids unnecessarily loading the community wastewater treatment facilities.</b></p>	<input type="radio"/> Yes <input type="radio"/> No
<p>Are storm management measures implemented to reduce water run-off from roofs and hard surfaces, such as parking areas?  <b>Tip: Measures include allowing the water to soak into the ground or collecting and re-using it. If the building covers more than 80% of the site, mark "not applicable".</b></p>	<input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> N/A
<p>Are there procedures in place to ensure that glycol discharges from the flushing of cooling coils are minimized or eliminated?  <b>Tip: Used glycol and water from cooling towers should be tested to ensure that they meet local sewer-use by-laws before being discharged into the drain system. Ethylene glycol, used as an anti-corrosion agent, and freezing point depressant in air conditioning systems, is toxic to humans and animals. Mark "not applicable" only if glycol is not being used.</b></p>	<input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> N/A
<b>Asbestos</b>	
<p>If the building was completed at a time when asbestos was used in construction (up to 1975), is there an up-to-date inventory based on an asbestos survey, that includes records of locations and the condition of all asbestos?  <b>Tip: If there is no asbestos in the building mark "not applicable".</b></p>	<input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> N/A
<p>Is there any friable asbestos in the building that has not been encapsulated (i.e. Is there any possibility that asbestos fibers could become air-borne)?  <b>Tip: The presence of asbestos-containing materials does not, in itself, constitute a health hazard, provided the asbestos is intact. Friable asbestos can crumble. Encapsulating it avoids the health hazards, which can occur when asbestos fibers become airborne. If the building was completed after 1981, mark "not applicable".</b></p>	<input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> N/A
<p>Is there a documented asbestos management plan that includes precautions to be taken during repairs and renovations?  <b>Tip: If the building was completed after 1981, mark "not applicable".</b></p>	<input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> N/A
<b>Lead</b>	
<p>Is there a documented lead management plan that includes precautions to be taken during repairs and renovations?</p>	<input type="radio"/> Yes <input type="radio"/> No
<b>Mercury</b>	
<p>Is there a documented mercury reduction plan?</p>	<input type="radio"/> Yes <input type="radio"/> No
<b>Radon</b>	
<p>Is the building located outside a high risk area or has a radon survey been done which indicates levels below 4 pCi/L?  <b>Tip: Radon is a colorless, odorless, naturally occurring, radioactive gas produced by radium decay that is believed to cause lung cancer. The most common source of indoor radon is the uranium in the soil or rock upon which facilities are built. Areas considered high-risk in the US are: Alabama, Santa Barbara, Colorado, southern Connecticut, Idaho, Illinois, Indiana, Iowa, Kansas, Maine, Minnesota, Montana, Northern New Jersey, southern New York, North Dakota, mid Ohio, Eastern Pennsylvania, southern Rhode Island, eastern part of South Dakota, eastern Utah, Virginia, and Wyoming.</b></p>	<input type="radio"/> Yes <input type="radio"/> No
<b>PCBs</b>	
<p>Are there any PCBs present in the building?  <b>Tip: Until the early 1980s, PCBs were used in fluorescent lamp ballasts for interior lighting and in some high-intensity discharge (HID) ballasts for exterior lighting. There are also electrical transformers and capacitors still in operation that contain PCBs. If the building was constructed after 1980 mark, "not applicable".</b></p>	<input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> N/A
<p>Is there a PCB management plan that designates responsibilities, requires inventory of all materials containing PCBs, including transformers, as well as records showing locations of major PCB-containing equipment, stipulates storage requirements, and describes a strategy for phasing out and disposing of PCB-containing equipment?  <b>Tip: If there are no PCBs mark "not applicable". Mark "yes" only if the plan contains <u>all</u> of the above elements.</b></p>	<input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> N/A
<p>Are there procedures in place to ensure that any PCB containing materials are safely stored, regular inspection of storage sites is conducted by designated persons and spill response includes training for staff?  <b>Tip: If there are no PCBs mark "not applicable". Mark "yes" only if there are procedures for <u>all</u> of the above.</b></p>	<input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> N/A
<b>Storage Tanks</b>	

<p>Are there any above-ground or under-ground storage tanks?  <b>Tip: Most tank systems are used for storing heating fuel, but they are also used to store fuel for electric generators and vehicles; solvents, lubricants and other petrochemicals; and other hazardous substances, such as corrosive or noxious chemicals.</b></p>	<input type="radio"/> Yes <input type="radio"/> No
<p>Is there a storage tank management plan, which ensures legal compliance and includes the following operation and maintenance procedures:  <b>Tip: Choose as many procedures as apply. If there are no storage tanks mark "not applicable".</b></p>	
<p>• tank system registration and annual reporting as required under US EPA Regulations?  <b>Tip: According to the US EPA, all underground storage tank systems that are greater than 110 gallons should be registered. If the single or combined capacity of the storage tank systems is less than 110 gallons, mark "not applicable".</b></p>	<input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> N/A
<p>• inventory control?  <b>Tip: Establishing an inventory of tank systems is the first step in preparing tank management plan.</b></p>	<input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> N/A
<p>• tank upgrading and replacement schedule?  <b>Tip: The components that are subject to upgrade are leak detection, secondary containment, corrosion protection, overflow protection and spill containment. Mark "non-applicable" if the tanks were already replaced or upgraded.</b></p>	<input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> N/A
<p>• system testing?  <b>Tip: Tank systems can be tested for leaks as part of the tank management plan.</b></p>	<input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> N/A
<p>• filling, transferring operations and spill protection?  <b>Tip: The US EPA may require property managers to install systems for spill containment, overflow protection, secondary containment, dispenser sump and leak detection. Various systems are available for both aboveground and underground storage tank systems.</b></p>	<input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> N/A
<p>• emergency preparedness?  <b>Tip: An emergency preparedness plan should identify response personnel who are to be trained, and their responsibilities in the event of a leak or spill.</b></p>	<input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> N/A
<p>• record keeping?  <b>Tip: All inspections and maintenance, alterations and upgrading should be documented.</b></p>	<input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> N/A
<p>• tank closure, abandonment or removal?  <b>Tip: A storage tank system must be properly decommissioned when replaced or taken out of service.</b></p>	<input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> N/A
<b>Drinking Water (lead and bacteria)</b>	
<p>Is the drinking water safe?  <b>Tip: There should be evidence of test results for lead and other regulated contaminants under the US Safe Drinking Water Act, including bacteria. If necessary, bottled drinking water should be provided. Note: Joint Commission accreditation requires that a cross connection certification be obtained on a prescribed schedule for healthcare facilities to ensure potable water is protected.</b></p>	<input type="radio"/> Yes <input type="radio"/> No
<b>HCS Program</b>	
<p>Are MSDSs, spill clean-up kits, and safety equipment such as eye-wash stations located in an accessible place near the chemical storage areas?  <b>Tip: Material Safety Data Sheets (MSDS) contain information about the properties and safe handling of each hazardous product.</b></p>	<input type="radio"/> Yes <input type="radio"/> No
<p>Are the MSDSs available electronically and less than 3 years old?  <b>Tip: Data sheets should not be more than 3 years old.</b></p>	<input type="radio"/> Yes <input type="radio"/> No
<p>Are HCS labels present on regulated products?  <b>Tip: Implementing the Hazard Communication Standard (HCS) and the Workplace Hazardous Materials Information System (WHMIS) is a US-wide legal requirement designed to ensure that chemicals and other hazardous substances are handled safely and that information about them including the relevant protective measures is disseminated to workers and employers.</b></p>	<input type="radio"/> Yes <input type="radio"/> No
<b>Health &amp; Safety and Management of Hazardous Products</b>	
<p>Are chemicals and hazardous materials stored under appropriate conditions in secure locations?  <b>Tip: Chemicals used in buildings that are classified as hazardous include oils, biocides, solvents, insecticides, pesticides and herbicides. They should be stored in rooms with proper ventilation, controlled temperatures, drain protection and adequate shelf space. Containers should be capped to avoid possible spills and fumes, properly labeled and kept in securely locked areas.</b></p>	<input type="radio"/> Yes <input type="radio"/> No
<p>Is education and training provided for the person responsible for the management of chemicals and for staff who may be required to work with them?  <b>Tip: HCS/WHMIS education refers to the instruction of workers in general information as how HCS works and the hazards of certain chemicals, where as training refers to the instruction in site-specific information such as work and emergency procedures.</b></p>	<input type="radio"/> Yes <input type="radio"/> No
<p>Is there a designated person responsible for managing hazardous materials?  <b>Tip: The designated person should be responsible for: (1) advising workers of potential and actual hazards (2) ensuring</b></p>	

that workers use prescribed protective equipment devices, and (3) taking every reasonable precaution for the protection of workers.	<input type="radio"/> Yes <input type="radio"/> No
Are there inventory and records of the hazardous materials/waste, including their removal and disposal? Tip: The inventory must identify the hazardous waste streams, the operations in the building that produce them, how and where the hazardous waste is handled and stored, and who is responsible for it. The records should show that the organization tracks the hazardous waste from the facility through a provincially licensed or certified carrier to a waste disposal facility that is also licensed or certified by the province to accept hazardous waste.	<input type="radio"/> Yes <input type="radio"/> No
Is there a Health and Safety Committee that meets regularly and carries out regular inspections of the property? Tip: Inspections should cover ventilation, spill containment and clean-up provisions as well as compatibility of the hazardous materials that are being stored together, and security of access. The committee should include representatives from the tenants as well as management and should meet on a regular basis to deal with health and safety issues. If a Health and Safety Committee is not required by regulation (i.e. if there are fewer than 20 people), mark as "not applicable".	<input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> N/A
<b>Pesticides</b>	
Are there suitable measures to ensure that food or food waste is well contained and that there are no unprotected openings, to minimize access by rodents? Tip: One way to minimize pesticides usage indoors is through the planned elimination of sources of food and pest habitats.	<input type="radio"/> Yes <input type="radio"/> No
Do landscaping practices minimize the use of pesticides, herbicides, fertilizer and petroleum-based products? Tip: Pesticide" refers to insecticides, herbicides, fungicides, rodenticides, disinfectants, anti-foulants and plant growth regulators. Use of local, resistant plants in landscaping may lead to a minimal need for pesticides. If there is no landscaping, mark as "not applicable".	<input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> N/A
Do pest control contracts require that the staff be licensed and use integrated pesticide management methods? Tip: The contract should require that records be kept on the type and frequency of applications of pesticides, alternative pest management approaches, compliance with legislation, and communication to tenants to notify them of pesticide applications in locations that they use. If there is no landscaping, mark as "not applicable".	<input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> N/A

## INDOOR ENVIRONMENT

<b>Ventilation System</b>	
Are air intakes located far from sources of pollution such as parking areas, bus stops, cooling towers or stagnant water? Tip: If inlets are on the roof, check for stagnant pools of water, insects and pigeon droppings, as well as proximity and wind direction with regard to the spray from cooling towers. If near the ground level, also check for sources of vehicle emissions (parking and idling), industrial or commercial pollution.	<input type="radio"/> Yes <input type="radio"/> No
Are air intakes located at least 30 ft. away from building exhaust outlets? Tip: Separating air intakes from exhaust avoids "re-entrainment" (short-circuiting) of exhaust air. Also consider the prevailing direction of the wind relative to the intakes and exhaust.	<input type="radio"/> Yes <input type="radio"/> No
Are outdoor air intakes checked regularly to ensure that the openings are protected and free from obstruction? Tip: Check that the grilles on the fresh-air supply inlets are free from obstruction by leaves, snow, insects and pigeon droppings.	<input type="radio"/> Yes <input type="radio"/> No
Is there free-standing water which cannot drain away in the condensate drip trays? Tip: Verify that there is no free-standing water in the air-conditioning ductwork, particularly in the condensate drip trays of cooling coils, downstream from humidifiers, which can result in contamination of ducts by bacteria and fungi. If there is no air-conditioning, mark "non-applicable".	<input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> N/A
Are there signs of corrosion, loose material (such as damaged filter bags) or sound attenuation material in the air-handling unit (AHU)? Tip: Inspect the air-handling units (air-mixing chambers, coils and fan blades) and duct interiors including any crawlspaces, tunnels or other areas that are used as ducts or which may be in contact with the ventilation air stream. Investigate whether commissioning took place. If there are no air-handling units, mark "non-applicable".	<input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> N/A
Are measured CO <sub>2</sub> levels less than 850 ppm in public areas of the hospital? Tip: Measure CO <sub>2</sub> concentration using a Draeger pump or CO <sub>2</sub> data logger. Be sure to take enough readings to establish a representative profile for a wide range of spaces in the building.	<input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Unknown
Are measured CO <sub>2</sub> levels less than 850 ppm in patient rooms? Tip: Measure CO <sub>2</sub> concentration using a Draeger pump or CO <sub>2</sub> data logger. Be sure to take enough reading to establish a representative profile for patient rooms located throughout the hospital in various locations; including different floors and wings.	<input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Unknown
Is there permanent carbon dioxide monitoring or are there sensors to maintain pre-set levels of carbon dioxide? Tip: Monitoring should be located in areas with high occupant densities and at the ends of the longest runs of the distribution ductwork. CO <sub>2</sub> monitoring can be installed as an independent system or be a function of the building automation system,	<input type="radio"/> Yes <input type="radio"/> No

preferably with feedback on space ventilation performance and operation of the air intake vents.

Do the patients have personal control over the ventilation rates in the their rooms, either through hybrid systems (operable windows) and/or personalized HVAC controls?  
Tip: Personal controls refers to individual patient space within single or multiple occupancy room. Note that personal controls may be set within a comfort range to align with energy management policy; while maintaining patient comfort, personal control and choice as the priority.

- Yes  
 No

Do the staff have personal control over the ventilation rates in the area in which they work, either through hybrid systems (operable windows) and/or personalized HVAC controls?  
Tip: Personal controls refer to individual office or open office setting with 4 to 6 work stations or less.

- Yes  
 No

### Filtration System

Are filters able to remove particles from incoming air based upon the following:

Tip: The efficiency of filters is usually indicated on filter packages.

\* prefilter before coil for non-aseptic and aseptic areas: MERV 6 - 8 (25-40% dust spot)?  
Tip: The efficiency of filters is usually indicated on filter packages.

- Yes  
 No

\* pre/final filter before coil for non-aseptic and aseptic areas: MERV 14 (80 - 85% dust spot)?  
Tip: The efficiency of filters is usually indicated on filter packages.

- Yes  
 No

\* final filter after blower-terminal filter for non-aseptic areas: MERV 16 (95% DOP/ 99% dust spot)?  
Tip: The efficiency of filters is usually indicated on filter packages.

- Yes  
 No

\* final filter after blower-terminal filter for aseptic areas: MERV 17 (?99.97% DOP)?  
Tip: The efficiency of filters is usually indicated on filter packages.

- Yes  
 No

Are manometers fitted to indicate when filters should be changed?

Tip: A manometer, which measures the pressure drop across the filters, indicates when these need cleaning or replacing. Manometers connected to BAS give even better warning.

- Yes  
 No

Is there easy access for cleaning and inspecting filters?

Tip: Easy access makes it easier to visually check whether air is bypassing the filters and to determine whether they are properly installed.

- Yes  
 No

Do the filters fit snugly within the filter supports?

Tip: Verify that there is a snug fit, that the filters are the right size and that they are installed in the correct direction.

- Yes  
 No

### Humidification System

What type of humidification system does the building use?

Tip: Because of the risk of microbial contamination associated with spray humidification, a preferred method is humidification by steam. If there is no humidification, mark "not applicable".

- Steam  
 Spray  
 N/A

If steam humidification is used, is clean steam rather than treated boiler water utilized?

Tip: Steam humidification should be provided from an independent source, as there are some concerns with steam generated as a by-product, because of potential air contamination from boiler additives used to control scale and corrosion. If no steam humidification is used, mark "not applicable".

- Yes  
 No  
 N/A

If spray humidification is used, is the system rigorously maintained and free of rust, algae, or loose contaminants of any kind?

Tip: Verify that there are **documented** maintenance procedures and records. If no spray humidification is used, mark "not applicable".

- Yes  
 No  
 N/A

### Cooling Towers

Are the cooling towers located away from fresh air intakes and flue outlets?

Tip: Check the relative positions of ventilation intakes to cooling tower drift, and the prevailing wind direction. If there are no cooling towers, mark "not applicable".

- Yes  
 No  
 N/A

Are there drift eliminators?

Tip: Drift eliminators remove water droplets generated by the cooling tower. This saves water and reduces the risk of downdraft of a spray that could contain Legionella. If there are no cooling towers, mark "not applicable".

- Yes  
 No  
 N/A

Is there a program of regular maintenance and cleaning of the cooling towers that includes monthly inspection for evidence of mold or slime?

Tip: There should be at least monthly inspections of cooling towers that include checking for evidence of slime or mould (which could indicate an elevated level of bacteria), regular treatment of the cooling tower water, and complete cleaning and disinfection of each cooling tower at least every six months. If there are no cooling towers, mark "not applicable".

- Yes  
 No  
 N/A

### Parking and Receiving

Are enclosed parking areas mechanically ventilated?

Tip: Closed garages are generally underground and require mechanical ventilation to avoid carbon monoxide, oil and gas

- Yes

fumes becoming concentrated in the garage and entering the building. Open or partially open garages, which are typically above-grade, may not need mechanical ventilation. If there are no enclosed parking areas, mark "not applicable".	<input type="radio"/> No <input type="radio"/> N/A
Are there measures to prevent intake of exhaust fumes from the loading dock and parking areas? <b>Tip:</b> Measures include posting notices to turn off vehicles; having well-sealed doors between the parking and occupied areas; ensuring that occupied spaces near parking garages and loading docks are under positive pressure; and increasing exhaust ventilation in the garage and loading docks. If there is no loading dock nor parking areas, mark "not applicable".	<input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> N/A
Is there carbon monoxide monitoring in garages and near boilers? <b>Tip:</b> Carbon monoxide monitoring should occur in the parking garage and near boilers. If there are no enclosed parking areas and no boilers, mark "not applicable".	<input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> N/A
<b>Control of Pollutants at Source</b>	
Have there been unremediated or continual observations or complaints of any of the following symptoms of mold or excess moisture: <b>Tip:</b> Check for visual or odour clues in the following areas: crawl spaces, sub-floor cavities and service tunnels, cold surfaces such as under windows and in corners formed by exterior walls, uninsulated cold water piping, bathrooms, indoor areas in the vicinity of known roof or wall leaks, floors and ceilings under plumbing, duct interiors near humidifiers, cooling coils, outdoor air-intakes and under carpets.	
* Stained ceilings or walls?	<input type="radio"/> Yes <input type="radio"/> No
* Musty odors?	<input type="radio"/> Yes <input type="radio"/> No
* Damp or musty carpets?	<input type="radio"/> Yes <input type="radio"/> No
Do the following areas have effective local exhaust: <b>Tip:</b> Some special-use areas may require additional local exhaust to prevent air pollutants from accumulating in or spreading beyond a local area. Fans should operate continuously when the source is present, not only when the room is occupied. Test the exhaust effectiveness with chemical smoke or light tissue paper.	
* kitchens and food service exhaust? <b>Tip:</b> Some special-use areas may require additional local exhaust to prevent air pollutants from accumulating in or spreading beyond a local area. Fans should operate continuously when the source is present, not only when the room is occupied. Test the exhaust effectiveness with chemical smoke or light tissue paper.	<input type="radio"/> Yes <input type="radio"/> No
* soiled utility and housekeeping closets and storage areas? <b>Tip:</b> Some special-use areas may require additional local exhaust to prevent air pollutants from accumulating in or spreading beyond a local area. Fans should operate continuously when the source is present, not only when the room is occupied. Test the exhaust effectiveness with chemical smoke or light tissue paper.	<input type="radio"/> Yes <input type="radio"/> No
* public restrooms and patient room bathrooms? <b>Tip:</b> Some special-use areas may require additional local exhaust to prevent air pollutants from accumulating in or spreading beyond a local area. Fans should operate continuously when the source is present, not only when the room is occupied. Test the exhaust effectiveness with chemical smoke or light tissue paper.	<input type="radio"/> Yes <input type="radio"/> No
Are there documented measures to control pollutants at source in areas such as rest rooms, bathrooms, kitchens, printing areas, chemical storage and general storage areas? <b>Tip:</b> Measures to reduce pollution at source should be documented and maintenance records kept, otherwise they may be implemented in a haphazard fashion. For example, in washrooms that are not frequently used, toilets should be flushed and water run in the sinks so that water does not stagnate in the supply lines; fume hoods should be installed over printing areas; cooking activities managed carefully to avoid indoor air quality problems; gas appliances vented and checked for leaks, dumpsters properly located to avoid odors and so on.	<input type="radio"/> Yes <input type="radio"/> No
Does the contract and/or in-house policy specifically state that environmentally preferable cleaning materials are to be used? <b>Tip:</b> These are cleaning materials which do not greatly sacrifice performance and which are biodegradable, do not contain phosphates, or do not fall under the Resource Conservation and Recovery Act (Sub chapter 3: Hazardous waste management). This requirement should be documented in the cleaning contract.	<input type="radio"/> Yes <input type="radio"/> No
Is smoking permitted in the building? <b>Tip:</b> Banning smoking is the most effective way to avoid environmental tobacco smoke - a source of irritation and a known carcinogen.	<input type="radio"/> Yes <input type="radio"/> No
If smoking is permitted, is there a designated smoking area that will prevent contamination of smoke to the rest of the building? <b>Tip:</b> A smoking room should be maintained under negative pressure, with a dedicated exhaust system.	<input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> N/A
Is there a smoking policy that regularly evaluates designated and undesignated areas for evidence of inappropriate smoking and/or disposal of smoking implements that can potentially contaminate building and site?	<input type="radio"/> Yes <input type="radio"/> No
Is there a checklist of items connected to IAQ that must be discussed with architects, engineers, contractors, and other professionals prior to renovations and repairs? <b>Tip:</b> Discussion is essential to avoid design features that could interfere with ventilation or thermal comfort, or which could	<input type="radio"/> Yes

cause condensation, or result in the selection of inappropriate materials or systems. Renovation procedures should also be discussed to avoid the release dust and hazardous materials.  No

### IAQ Management

Does building management have documented means for addressing patient and staff concerns regarding indoor air quality that include the following:

Tip: Building management must have in place documented means for addressing tenants/occupant concerns regarding indoor air quality.

\* complaint forms?  
Tip: Building management must have in place documented means for addressing tenants/occupant concerns regarding indoor air quality.  Yes  
 No

\* incident log including process and time frame for resolution?  
Tip: Building management must have in place documented means for addressing tenants/occupant concerns regarding indoor air quality.  Yes  
 No

Has the building had an IAQ audit in the past year?  
Tip: The audit should have been detailed enough for management to gain a comprehensive understanding of the current IAQ situation in the building, including all of the factors that could influence the building's IAQ.  Yes  
 No

Are there procedures for maintaining good IAQ that include:

Tip: Building management must have heating, ventilation and air conditioning (HVAC) procedures and a preventive maintenance program in place.

\* HVAC operations?  
Tip: There should be daily, weekly and monthly schedules.  Yes  
 No

\* Housekeeping procedures?  
Tip: These should identify all areas that should be cleaned, specify the products that are to be used and their appropriate application, and provide a cleaning schedule.  Yes  
 No

\* Preventive maintenance?  
Tip: This should include a scheduled program for monitoring, cleaning and replacing HVAC components such as outside air intakes, outside air dampers, air filters, drain pans, heating and cooling coils, the interior of air handling units, fan motors and belts, air humidification, controls and cooling towers.  Yes  
 No

\* Procedures for unscheduled maintenance?  
Tip: Procedures for unscheduled maintenance should be documented in the event of equipment failures which may require the prolonged deactivation or modification of the building's HVAC equipment.  Yes  
 No

Is building management regularly trained to implement an IAQ program to address staff concerns?  
Tip: The training should be adequate to enable staff to identify, prevent, and solve IAQ problems.  Yes  
 No

Is building management regularly trained to implement an IAQ program to address patient concerns?  
Tip: The training should be adequate to enable staff to identify, prevent, and solve IAQ problems.  Yes  
 No

Are the following being monitored continuously:

Tip: The building should conform to ASHRAE 55-2004 for thermal comfort.

\* Temperature?  Yes  
 No

\* Humidity?  Yes  
 No

### Lighting Features

Are high frequency ballasts fitted to luminaires?

Tip: Electronic ballasts help prevent eyestrain and headaches which are often associated with the flicker produced by standard magnetic ballasts. In addition they can result in 10 to 15% energy reduction compared to conventional ballasts.  Yes  No

Are there controllable internal or external blinds and do light fixtures prevent glare at Visual Display Terminals?

Tip: Internal shading devices limit the glare resulting from solar radiation. They should be adjustable to allow occupants to regulate the amount of direct light entering their space. The cut-off angle of downward light should reduce glare on VDT screens.  Yes  No

If there is acute or ambulatory care, do lighting levels meet ANSI/IESNA Publication RP-29-06: Recommended Practices for Lighting for Hospitals and Health Care Facilities?

Tip: To measure lighting levels, use an illuminance light meter. General (ambient) lighting - the most common type of lighting - can be provided by indirect lighting from the luminaires that bounces off the ceiling or walls, direct lighting that shines directly from the luminaire to the task, or a combination of both. If there is no acute or ambulatory care, mark "not applicable".  Yes  No  
 Unknown  
 N/A

If there is long term care, domiciliary, hospice or palliative care, do lighting levels meet ANSI/IESNA RP-28-07: Recommended Practices for Lighting and the Visual Environment for Senior Living?

Tip: To measure lighting levels, use an illuminance light meter. General (ambient) lighting - the most common type of lighting - can be provided by indirect lighting from the luminaires that bounces off the ceiling or walls, direct lighting that shines  Yes  No  
 Unknown

directly from the luminaire to the task, or a combination of both. If there is no long term care, domiciliary, hospice or palliative care, mark "not applicable".  N/A

Is it individually controlled task lighting provided?  Yes  No  
Tip: This is lighting which shines directly from the luminaire to the task. It includes desk and table lights.

Does the floor plan of the building potentially allow for 65% of staff areas to have access to day-lighting?  Yes  No  
Tip: Consider whether the building plan could allow easy access to daylight.

Do 80% of the patient rooms have a natural or scenic view?  Yes  No  
Tip: Consider whether the building plan could allow easy access to daylight.

### Lighting Management

Is there a planned schedule of cleaning light fixtures?  Yes  No  
Tip: Cleaning luminaires can increase light output and quality, resulting in the need for fewer lamps and significant energy savings over the life of the facility. Recommended cleaning intervals for luminaires in offices are one or two times a year.

Is there a group-relamping program?  Yes  No  
Tip: Lamps that are changed before they burn out produce greater light output, resulting in better quality light, the need for fewer lamps and corresponding energy savings.

### Noise

Is it easy to engage in a conversation using normal voice, understand a phone conversation, and have a private conversation using lowered voices in the following spaces:  
Tip: To measure sound levels, use an integrated sound-level meter with 'A' weighting. The readings should be no more than 50 dB LAeq,T.

\* waiting areas?  Yes  No  
Tip: To measure sound levels, use an integrated sound-level meter with 'A' weighting. The readings should be no more than 50 dB LAeq,T.

\* nursing stations?  Yes  No  
Tip: To measure sound levels, use an integrated sound-level meter with 'A' weighting. The readings should be no more than 50 dB LAeq,T.

\* open office spaces?  Yes  No  
Tip: To measure sound levels, use an integrated sound-level meter with 'A' weighting. The readings should be no more than 50 dB LAeq,T.

\* emergency room?  Yes  No  
Tip: To measure sound levels, use an integrated sound-level meter with 'A' weighting. The readings should be no more than 50 dB LAeq,T.

\* patient rooms?  Yes  No  
Tip: To measure sound levels, use an integrated sound-level meter with 'A' weighting. The readings should be no more than 50 dB LAeq,T.

Is there sufficient acoustic privacy in single/private patient rooms:  76 - 100%  
 51 - 75%  
Tip: Multiple occupancy rooms do not promote privacy and adherence to HIPAA, whereas private or single occupancy rooms do promote privacy and more positive patient outcomes.  26 - 50%  
 1 - 25%  
 None

Is there sufficient acoustic privacy in the following public spaces:  
Tip: In open areas, speech should be heard but not generally understood in adjacent areas, and it should be possible to have a private conversation using lowered voices. In enclosed areas, it should be possible to maintain confidentiality using normal voice levels.

\* dining areas?  Yes  No  
Tip: Quieter dining spaces provide opportunities for family and staff respite.

\* lobby / entrances?  Yes  No  
Tip: Minimizing noise at reception areas potentially reduce anxiety and stress on patients and families seeking directions and information from staff.

Is there sufficient acoustic privacy for Medication Distribution area?  Yes  No  
Tip: Minimizing distractions (including noise and interruptions) within medication preparation and distribution areas has been found through research to reduce potential medical error.

Is there an overhead paging system?  Yes  No  
Tip: Overhead paging systems are distracting to both staff and patients; impacting staff's ability to hear other instructions or critical information and continually disrupts patients' potential to rest. If an overhead paging system is provided; consider implementing a policy for utilization that includes only specific uses for specific emergencies.

## ENVIRONMENTAL MANAGEMENT SYSTEM

## Environmental Management System (EMS) Documentation

Does building management have a written environmental policy?

Tip: The policy should be a public document that is easily accessible to staff and tenants. It should express a commitment to: comply with relevant laws or other requirements; continuous improvement; and pollution prevention. It should also be signed by senior management.

Yes  No

Are there stated goals and targets documented in the policy manual with respect to each of the following:

Tip: Goals and specific targets to improve or maintain the facility's environmental performance should be **documented** as part of the "environmental vision" for the building.

<input type="checkbox"/>	Energy conservation?
<input type="checkbox"/>	Water conservation?
<input type="checkbox"/>	Waste reduction and recycling?
<input type="checkbox"/>	Environmental purchasing?
<input type="checkbox"/>	Reduction in use and proper handling of hazardous products?
<input type="checkbox"/>	Training and education?

Are there action plans to improve the environmental and energy performance of the building?

Tip: The action plans should outline implementation strategies, timelines, training and resources needed to achieve stated targets. They should be reviewed, revised and updated on a regular, scheduled basis.

Yes  No

## Environmental Purchasing

Does building management have a written environmental purchasing plan that includes the following:

Tip: The environmental purchasing plan should: assign responsibilities; ensure that those who do purchasing have adequate training; refer to products used by in-house staff; stipulate requirements for cleaning contractors; and provide education to staff.

\* outline of regularly scheduled updates as products and processes change?

Tip: The environmental purchasing plan should: assign responsibilities; ensure that those who do purchasing have adequate training; refer to products used by in-house staff; stipulate requirements for cleaning contractors; and provide education to staff.

Yes

No

\* process for determining environmentally preferable products?

Tip: The environmental purchasing plan should: assign responsibilities; ensure that those who do purchasing have adequate training; refer to products used by in-house staff; stipulate requirements for cleaning contractors; and provide education to staff.

Yes

No

\* role of infection control and EMS for determining product selection?

Tip: The environmental purchasing plan should: assign responsibilities; ensure that those who do purchasing have adequate training; refer to products used by in-house staff; stipulate requirements for cleaning contractors; and provide education to staff.

Yes

No

Is there a list of preferred products used in housekeeping and building maintenance?

Tip: Staff need a list of feasible environmentally friendly substitutes and their suppliers. Because products are frequently discontinued and new products introduced to the market, the list should be regularly reviewed and updated.

Yes

No

Does the purchasing policy include the requirement for purchasing energy saving equipment?

Tip: The policy should include the requirement that any purchases of appliances and HVAC should involve consulting *EnergyStar*.

Yes

No

Are MSDSs reviewed by staff who purchase hazardous products?

Tip: Those responsible for purchasing should ensure that up-to-date Material Safety Data Sheets (MSDS) for controlled products are reviewed and are available to employees. They should not be dated more than 3 years previous to the receiving date.

Yes

No

## Emergency Response

Are procedures documented and staff trained to deal with and obtain prompt assistance for emergencies such as fire, spills, power failures and illness?

Tip: Procedures must be detailed for quick and effective action in the event of an emergency. They should include up-to-date contacts to obtain assistance promptly and to report the emergency. There should also be a protocol to assess the risks of re-occupying a building in the case of evacuation.

Yes  No

Do the emergency plans refer to all applicable legislation regarding emergency procedures, reporting and record-keeping?

Tip: The emergency response plan must ensure compliance with applicable regulations. A first step is to define accountability with respect to permits, record-keeping and reporting.

Yes  No

Is there equipment on-site to deal with environmental emergencies?

Tip: The environmental emergency response plan should require that equipment such as spill control kits, absorbents, and personal protection equipment be on-site for quick and easy access.

Yes  No

<p>Are there contingency plans for both short-term and long-term power failures?  <b>Tip: Planning for power failures should address the following elements: communication to tenants; security; provision of emergency power and water; and, if necessary, evacuation.</b></p>	<input type="radio"/> Yes <input type="radio"/> No
<p>Is there a site map showing the location of environmentally significant features?  <b>Tip: Site plans should identify environmentally significant features such as hazardous waste storage rooms, PCB-containing equipment, sanitary and storm sewer lines, CFC equipment, storage tanks as well as emergency equipment.</b></p>	<input type="radio"/> Yes <input type="radio"/> No

<b>Patient and Staff Awareness</b>	
<p>Is there a communication strategy with patients and families regarding environmental initiatives and practices in the building and to respond to patient and family concerns?  <b>Tip: Hospital management must have in place a well-understood system for communicating with staff and patients on environmental issues specific to the building. Staff and patients should be provided with information, and should have a forum or hotline to discuss the environmental concerns and to coordinate their activities.</b></p>	<input type="radio"/> Yes <input type="radio"/> No
<p>Is there a communication strategy with staff regarding environmental initiatives and practices in the building and to respond to staff concerns?  <b>Tip: Hospital management must have in place a well-understood system for communicating with staff and patients on environmental issues specific to the building. Staff and patients should be provided with information, and should have a forum or hotline to discuss the environmental concerns and to coordinate their activities.</b></p>	<input type="radio"/> Yes <input type="radio"/> No
<p>Are there communications to patients and staff on the environmental measures that they can implement in the building to contribute to:</p>	
<p>• Energy conservation?  <b>Tip: An inexpensive way to reduce energy costs is by developing energy efficiency procedures and personal habits. Provide information to staff and patients on energy use and means of saving energy (such as information on turning off lights in unoccupied spaces, after normal office hours and the correct use of blinds).</b></p>	<input type="radio"/> Yes <input type="radio"/> No
<p>• Waste reduction and recycling?  <b>Tip: This can include promotional materials such as brochures and newsletters to keep staff and patients informed about how they can reduce the amount of waste being sent to landfill through such things as recycling and composting.</b></p>	<input type="radio"/> Yes <input type="radio"/> No
<p>• Proper handling, storage and disposal of medical waste and toxic products?  <b>Tip: This can include newsletters, postings on bulletin boards, signage, memos or participation in events that promote responsible environmental stewardship.</b></p>	<input type="radio"/> Yes <input type="radio"/> No
<p>Has a patient satisfaction survey been completed in the last 3 years?  <b>Tip: A patient satisfaction survey enables managers to prioritise efforts and maximise the performance of their assets.</b></p>	<input type="radio"/> Yes <input type="radio"/> No
<p>Has a staff satisfaction survey been completed in the last 3 years?  <b>Tip: A staff satisfaction survey enables managers to prioritise efforts and maximise the performance of their assets.</b></p>	<input type="radio"/> Yes <input type="radio"/> No

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If you need assistance, please contact Customer Service: 1-503-274-0448 | [info@thegbi.org](mailto:info@thegbi.org)