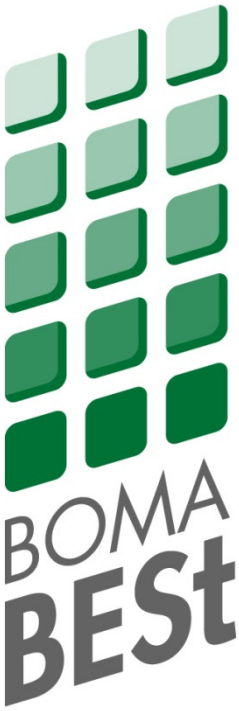

BOMA BESt Assessment: Office Buildings

June 2009

Contents

Total Points	1000

BASIC INFORMATION	
What is the name of the building? Tip: Please enter the name as you would like it to appear on the certificate if the building becomes certified.	
What is the street address?	
	City:
	Province:
	Postal code:
When was the building constructed? Tip: Specify year of construction OR choose an era.	_____(exact year) ☐ prior to 1960 ☐ prior to 1989 ☐ after 1999
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 storeys are there?	
Is there underground parking?	☐Yes ☐No
Who are the main tenants?	☐ The building has numerous tenants The main tenants are:
How many people work in this facility during normal operating hours?	
How many hours per day is the facility open?	
How many days per week is the facility open?	
Who is the owner of the building?	
Who is the building manager? Tip: Provide the name and the company of the manager.	
Building general description? Tip: Short building description including any innovative energy and environmental measures of other significant amentities (eg. Interior landscape). Please include notes on any significant renovations or retrofits within the last 5 years.. .	
Building construction description? Tip: Provide a short description of building construction, including the structural system (eg. Brick or block or prefab steel framing) and building envelope (e.g. single or double glazed windows).	
HVAC system description? Tip: Provide a short description of building HVAC system.	

1.0 ENERGY (35%)			350
1.1 Energy Consumption			**80**
Specify the ending month of the 12 month period for which energy 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 energy consumption figures.		Month _____ Year _____	
What was the building's total energy bill for the 12 month period specified? Tip: This will be calculated automatically if 12 months of detailed data is entered below. Leave this field blank if you wish it to be calculated automatically. If detailed information is not available, please provide an estimate.		$ _____	
What was the energy consumption for each non-renewable fuel type, by month? If you do not have a breakdown of 12 months of information, please enter the building's total energy bill for the entire specified 12 month period in Month 1. Tip: This information is used to calculate the energy intensity (ekWh/sqft/yr). It is then compared to a national benchmark based on NRCan data. The scale is as follows: 8 points-less than 36kWh/sf-yr 16 points-less than 32kWh/sf-yr 24 points-less than 28kWh/sf-yr 32 points-less than 24kWh/sf-yr 40 points-less than 20kWh/sf-yr 48 points-less than 18kWh/sf-yr 56 points-less than 16kWh/sf-yr 64 points-less than 14kWh/sf-yr 72 points-less than 12kWh/sf-yr 80 points-less than 10kWh/sf-yr			
		< 36 kWh/sf-yr	8
		< 32 kWh/sf-yr	8
		< 28 kWh/sf-yr	8
		< 24 kWh/sf-yr	8
		< 20 kWh/sf-yr	8
		< 18 kWh/sf-yr	8
		< 16 kWh/sf-yr	8
		< 14 kWh/sf-yr	8
		< 12 kWh/sf-yr	8
		< 10 kWh/sf-yr	8

Gas month 1:	m^3	Cost $
Gas month 2:	m^3	Cost $
Gas month 3:	m^3	Cost $
Gas month 4:	m^3	Cost $
Gas month 5:	m^3	Cost $
Gas month 6:	m^3	Cost $
Gas month 7:	m^3	Cost $
Gas month 8:	m^3	Cost $
Gas month 9:	m^3	Cost $
Gas month 10:	m^3	Cost $
Gas month 11:	m^3	Cost $
Gas month 12:	m^3	Cost $
Electricity month 1:	kWh.	Cost $
Electricity month 2:	kWh.	Cost $

Electricity month 3:	kWh.	Cost $
Electricity month 4:	kWh.	Cost $
Electricity month 5:	kWh.	Cost $
Electricity month 6:	kWh.	Cost $
Electricity month 7:	kWh.	Cost $
Electricity month 8:	kWh.	Cost $
Electricity month 9:	kWh.	Cost $
Electricity month 10:	kWh.	Cost $
Electricity month 11:	kWh.	Cost $
Electricity month 12:	kWh.	Cost $
Oil month 1:	Litres	Cost $
Oil month 2:	Litres	Cost $
Oil month 3:	Litres	Cost $
Oil month 4:	Litres	Cost $
Oil month 5:	Litres	Cost $
Oil month 6:	Litres	Cost $
Oil month 7:	Litres	Cost $
Oil month 8:	Litres	Cost $
Oil month 9:	Litres	Cost $
Oil month 10:	Litres	Cost $
Oil month 11:	Litres	Cost $
Oil month 12:	Litres	Cost $
Propane month 1:	Litres	Cost $
Propane month 2:	Litres	Cost $
Propane month 3:	Litres	Cost $
Propane month 4:	Litres	Cost $
Propane month 5:	Litres	Cost $
Propane month 6:	Litres	Cost $
Propane month 7:	Litres	Cost $
Propane month 8:	Litres	Cost $
Propane month 9:	Litres	Cost $
Propane month 10:	Litres	Cost $
Propane month 11:	Litres	Cost $
Propane month 12:	Litres	Cost $
Steam month 1:	lbs.	Cost $
Steam month 2:	lbs.	Cost $
Steam month 3:	lbs.	Cost $
Steam month 4:	lbs.	Cost $
Steam month 5:	lbs.	Cost $
Steam month 6:	lbs.	Cost $
Steam month 7:	lbs.	Cost $
Steam month 8:	lbs.	Cost $
Steam month 9:	lbs.	Cost $
Steam month 10:	lbs.	Cost $
Steam month 11:	lbs.	Cost $
Steam month 12:	lbs.	Cost $

Chilled water month 1:	GL	Cost $
Chilled water month 2:	GL	Cost $
Chilled water month 3:	GL	Cost $
Chilled water month 4:	GL	Cost $
Chilled water month 5:	GL	Cost $
Chilled water 6:	GL	Cost $
Chilled water 7:	GL	Cost $
Chilled water 8:	GL	Cost $
Chilled water 9:	GL	Cost $
Chilled water 10:	GL	Cost $
Chilled water 11:	GL	Cost $
Chilled water 12:	GL	Cost $

Energy Efficiency Features		
1.2 Lighting		**25**
Does the building incorporate any of the following high-efficiency lighting features: Tip: Choose as many as apply.		
• compact fluorescents? Tip: Compact fluorescents are suitable replacement for incandescent lighting, combining small size with a high level of performance.	☐Yes ☐No	
• T8 or T5 fluorescent lamps in building areas? Tip: T8 or T5 fluorescent lamps are suitable for general lighting, are highly efficient and produce warmer colours than traditional cool white fluorescents.	☐ 70%-100% ☐ 40%-70% ☐ Under 40%	
• T8 or T5 fluorescent lamps in garage areas? Tip: Where there are no garage areas, mark “not applicable.”	☐ 70%-100% ☐ 40%-70% ☐ Under 40%	
• Exit signs with light-emitting diodes (LEDs)? Tip: LED exit signs consume only very little electricity, and have a long life.	☐ 70%-100% ☐ 40%-70% ☐ Under 40%	
• Other LED light-emitting diodes (LEDs) lighting? Tip: General LED lighting or induction lighting, particularly for signs and exterior is becoming more common. Describe: LED other description	☐Yes ☐No	
• 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”.	☐Yes ☐No ☐ N/A	
• Task lighting? Tip: Task lighting (e.g. desk lamps) concentrate light in specific areas rather than brightly lighting an entire room.	☐ 70%-100% ☐ 40%-70% ☐ Under 40%	
• Automated lighting controls? Tip: These include lighting management software, digital addressable lighting interface (DALI), occupancy controls, daylight sensors or automatic dimmers. Describe controls: Lighting controls description	☐Yes ☐No	

What percentage of all lighting in the facility is "high efficiency lighting"? Tip: Estimate the percentage either by floor area of occupied space or by numbers of lights. High efficiency refers to the type of lighting above.	☐ 80% - 100% ☐ 60% - 80% ☐ 40% - 60% ☐ 20% - 40% ☐ Under 20% ☐ none	
1.3 Major HVAC Equipment		**22**
Are the boilers 20 years old or more? 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".	☐ Yes ☐ No ☐ N/A (no boilers)	
What percentage of boilers in the facility are high-efficiency? Tip: At least 50% of the lead boilers (by numbers) must have a full load "thermal efficiency" of not less than 92%. If there are no boilers, mark "not applicable."	☐ 50– 100 ☐ 25– 49 ☐ < 25 ☐ N/A (no boilers)	
Do the boilers have a control system that allows them to operate through a wide range of loads? Tip: The ability to regulate the air fuel mixture in the burner makes it more efficient for handling variable loads. If there are no boilers, mark "not applicable".	☐ Yes ☐ No ☐ N/A (no boilers)	
Do the boilers have automatic vent dampers? 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".	☐ Yes ☐ No ☐ N/A (no boilers)	
What percentage of chillers in the facility are high-efficiency? Tip: High efficiency chillers are typically rated at full-load efficiency in the range of 0.46 - 0.65 kW/ton (or COP of not less than 4.4) compared to old CFC-11 or CFC-12 chillers that have an efficiency in the range of 0.72 - 0.90 kW/ton. If there is no central cooling plant or chillers, mark "not applicable". Does not apply for buildings under 100,000 square feet.	☐ 50% - 100% ☐ 25%– 49% ☐ < 25% ☐ N/A (no chiller)	
1.4 Controls		**11**
Is temperature setback and weather compensation implemented? Tip: These refer to adjustments to the building temperature based on occupancy and outside temperatures, to reduce heating or cooling requirements.	☐ Yes ☐No	
Does the building have building automation systems (BAS)? 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.	☐ Full ☐ Partial ☐ None	
1.5 Hot Water		**12**
Does the building have high-efficiency water heating equipment? 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.	☐Yes ☐No	

What percentage of hot water faucets have water saving devices? Tip: Devices that reduce the rate and duration of water-flow in faucets can low hot water costs (e.g. low flow faucets with aerators, automatic faucet on/off control, high pressure boosters for loading and garbage area cleaning). Describe: Hot water saving description	☐ 50% - 100% ☐ 25%– 49% ☐ < 25%	
Are domestic hot water temperatures maintained between 50° and 55° Centigrade? Tip: Measure temperatures at the taps.Maintaining water temperature between 50° and 55° Celcius saves energy and prevents scalding and occurrence of Legionella.	☐Yes ☐No	

1.6 Other Energy Efficiency Features		13
Are there other energy efficiency measures such as:		
• Variable speed drives on the following fan and pump systems? Tip: 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. Mark "not applicable, where the systems are not present.		
▪ main supply air systems?	☐Yes ☐No ☐ N/A	
▪ main chilled water and condenser (cooling tower) pump systems?	☐Yes ☐No ☐ N/A	
▪ heating pump systems?	☐Yes ☐No ☐ N/A	
▪ domestic water booster pumps?	☐Yes ☐No ☐ N/A	
▪ cooling tower fan motors?	☐Yes ☐No ☐ N/A	
• Exhaust air heat recovery? Tip: This could be in the form of an air to air exchanger orglycol heat recovery loop,Where heat recovery would not be practical, mark "not applicable.".	☐Yes ☐No	
• Chiller controls that allow the units to operate at a wide range of low and high load conditions? Tip: For example chilled water (CHW) temperature reset controls. Where there are no large central systems, mark "not applicable".	☐Yes ☐No ☐ N/A	
• Cogeneration (building or district scale)? Tip: 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. Where cogeneration would not be economically justified, mark "not applicable."	☐Yes ☐No ☐ N/A	
• Other energy-saving systems or measures? Describe: Other energy saving systems description Tip: Describe any other energy-saving systems or measures used to save energy (e.g. deep lake cooling, solar absorption chillers, CO_2 demand ventilation, displacement ventilation, dehumidification methods, daylight cleaning etc.).	☐Yes ☐No	
1.7 Green Energy		**12**
Is "green electricity" purchased? Tip: Many energy retailers now offer energy produced from certified solar, water, wind and recovery technologies.If not known, check "no."	☐Yes ☐No	
Does the building utilize any of the following renewable on-site energy sources: Tip: Renewable energy sources do not deplete natural resources		
• Active Solar? Describe: Active Solar description Tip: This is generally used to increase the temperature of large volumes of water or air in commercial and industrial buildings.	☐Yes ☐No	

• Wind? Describe: Wind description Tip: This is generally used togenerate electricity to offset electricity purchased from the electric utility..	☐Yes ☐No	
• Photo Voltaic? Describe: Photo voltaic description Tip: Photovoltaicsconvert the sun's energy to usable electricity. . They are most effective when used during the day, avoiding the need for battery or other storage systems.	☐Yes ☐No	
• Ground Source "Heat Pump"? Describe: Ground source description Tip: 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.	☐Yes ☐No	
• Bio-mass? Describe: Bio-mass description. Tip: 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.	☐Yes ☐No	
What percentage of the building's total energy use is supplied by these renewable sources? Describe the source and enter percentage of total annual energy requirements supplied: Description re renewable energy percentage Tip: Enter percentage of total annual energy requirements supplied from above sources.	☐ > 10% ☐ < 10% ☐ 0%	
1.8 Envelope		**35**
Has the current performance and condition of the building envelope been assessed in terms of: Tip: 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.		
• water infiltration and condensation? Tip: 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.	☐Yes ☐No	
• moist air transfer? Tip: Consider the envelope permeability and the ability of materials to withstand, without deterioration, periods of freezing and thawing.	☐Yes ☐No	
• air flow? Tip: Consider the air pressure differences and air-leakage characteristics of the envelope.	☐Yes ☐No	
• heat transfer? Tip: Assess the thermal resistance and quantity of heat transferred through of the envelope.	☐Yes ☐No	

Are there energy-efficient windows and doors? Describe: Doors and windows description Tip: Energy-efficient windows consist of, at minimum, double-glazed, low-e windowpanes with frames spacers that have high thermal integrity. High performance weather stripping on doors and windows also increases their thermal performance.	☐Yes ☐No	
Does the building have appropriate shading or reflective film installed to reduce the cooling load? Describe: Shading film description 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.	☐Yes ☐No	
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? Tip: Exterior openings and roof-to-wall connections of mechanical penthouse and floors in the upper part of the building.	☐Yes ☐No	
• The bottom part of the building? 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.	☐Yes ☐No	
• Vertical shafts and elevators? Tip: Service ducts and conduit penetrations, including excessive cable holes in the elevator shafts.	☐Yes ☐No	
Has a Building Condition Report been produced within the last 3 years? Tip: A loss of integrity of the building envelope, such as cracking in sealing, corrosion in exterior panel hangers or leaks roofs to occur in ten to fifteen year old buildings. At this point, a building condition survey, including infared scans and hot spot searches, is desirable. In buildings less than 10 years old and not requiring a Building Condition Report mark “not applicable.”	☐Yes ☐No ☐ N/A	
Were the recommendations of the Building Condition Report for the envelope carried forward into a Capital Plan? Tip: In buildings less than 10 years old and not requiring a Building Condition Report mark “not applicable.” In buildings older than 10 years, with no report within the last 7 years, mark “no.”	☐Yes ☐No ☐ N/A	
Were the recommendations of the Building Condition Report for the roof carried forward into a Capital Plan? Tip: In buildings less than 10 years old and not requiring a Building Condition Report mark “not applicable.” In buildings older than 10 years, with no report within the last 7 years, mark “no.”	☐Yes ☐No ☐ N/A	
1.9 Energy Management		**80**
Energy Policy		

Is there an energy policy endorsed by senior management? 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.	☐ Yes there is a formal energy management policy ☐ No there is no energy management policy ☐ Other there is no formal (documented) energy management policy, but management operates with a view to avoiding excessive energy use	

Energy Audit		
Has the building had an energy audit within the past three years that included recommendations with costs, savings and a payback period? Tip: This is a minimum requirement for BOMA BESt. An energy audit identifies areas that unnecessarily consume excessive amounts energy. The energy audit report must include: • Utility billing analysis with benchmarking observations • Summary of major equipment and type of lighting systems in the buildings • List of potential energy conservation opportunities based on walk-through audit of the facility • Building owner and manager information, building name and address, date of energy study completion • Building description In particular situations, where the building meets criteria set out in the BOMA BESt Application Guide for an acceptable equivalent, mark "A BOMA-accepted equivalent".	☐Yes ☐No ☐ A BOMA-accepted equivalent	
Which of the following systems were audited: Tip: If no audit was done, mark "no" or "n/a".		
• lighting system?	☐Yes ☐No	
• heating plant?	☐Yes ☐No	
• cooling plant? Tip: If there is no cooling plant, mark "not applicable."	☐Yes ☐No ☐ N/A	
• HVAC fans, pumps and distribution system? Tip: If there is no major duct distribution system or heating/cooling piping systems mark "not applicable."	☐Yes ☐No ☐ N/A	
• domestic hot water system?	☐Yes ☐No	
• major equipment?	☐Yes ☐No	
• plug load equipment?	☐Yes ☐No	
• building envelope?	☐Yes ☐No	
• renewable energy systems (e.g. solar, wind, geothermal)?	☐Yes ☐No	
Energy Management, Monitoring and Targeting		

Is there an energy management (reduction) plan to address issues raised in the energy audit? Tip: This is a minimum requirement for BOMA BESt. An energy management/reduction plan should identify measures, allocate resources, and identify implementation timelines.	☐Yes ☐No	
Is there a regular review of energy consumption by a qualified person to identify anomalies or excessive consumption and take corrective action as needed? Tip: Energy use should be monitored. This means that monthly energy bills should be actually reviewed for anomalies or excessive consumption.	☐Yes ☐No	
Are energy usage targets set? Tip: Targets are best expressed as a percentage decrease of energy used.	☐Yes ☐No	
Is there evidence of movement towards these energy targets over time? Tip: Review energy figures for the past 3 years.If there is no marked energy use decrease or there are no energy figures, mark "no."	☐Yes ☐No	
Have steps been taken to analyze and reduce peak energy demand? Tip: Electricity demand should be monitored., either through monthly utility bills or the use of more frequent load measurements (such as daily, hourly or 15 minute interval readings), to assess undesirable trends and peaks. Measures should be implemented to reduce peak demand.	☐Yes ☐No	
Energy Training		
Is there a formalized training plan for building staff, including new employees, on how to implement energy and equipment monitoring and preventive maintenance, as well as energy efficiency improvements? 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, and energy efficient practices and goals. List the training courses or internal training taken by staff in last two years: Energy Training description	☐Yes ☐No	
Financial Resources		
Are there financial resources to improve the energy efficiency of the building or is the building participating in a program for energy efficiency upgrades? Describe: Financial Resources description Tip: This could be an energy efficiency improvement budget or participation in a program that provides financial assistance for energy upgrades.	☐Yes ☐No	
Sub-metering		
Have sub-meters been installed to accurately measure and record tenants' energy usage? Tip: Submetering not only encourages energy conservation by tenants, it also enables the owner to charge them fairly. If there is only one tenant or individual metering, mark "not applicable." Describe: Tenant submetering description	☐ 50% – 100% ☐ 25% – 49% ☐ < 25% ☐ N/A	
Have sub-meters been installed to measure major energy uses (e.g. lighting, chilled or heating water flow, specific equipment and motors etc.), or is the building automation system (BAS) used to track major energy uses? Tip: This is critical to managing energy because it makes it possible to establish the building load profile and demand structure.	☐Yes ☐No	
Operating Manual		

Is there a readily available operating manual covering standard control settings and operating instructions and basic trouble shooting 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. While electronic manuals may be available, it is useful, as a precaution, to have printed copies of basic instructions in an accessible location, so that in the event that computers are down or regular staff is not available, someone who is not entirely familiar with the systems can take over.	☐Yes ☐No	
Maintenance and Commissioning		
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".	☐Yes ☐No ☐N/A	
• checks on the correct operation of ventilation and cooling controls? Tip: If there is no HVAC, mark "not applicable".	☐Yes ☐No ☐N/A	
• systematic checking of temperature, humidity and fresh air controls to ensure they are set correctly and are responding as intended?	☐Yes ☐No	
• identification and investigation of all occurrences of excess energy use?	☐Yes ☐No	
• checking of air supply grilles to ensure they are not blocked and are delivering correct air quantity?	☐Yes ☐No	
• checks for refrigerant leaks? Tip: If there is no cooling plant, mark "not applicable".	☐Yes ☐No ☐N/A	
• checks on cooling towers? Tip: If there are no cooling towers, mark "not applicable".	☐Yes ☐No ☐N/A	
• filter replacement schedule, and filter size and type for all systems? • Tip: If there is no air handling unit, mark "not applicable".	☐Yes ☐No ☐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".	☐Yes ☐No ☐N/A	
Is there a preventive maintenance program for the HVAC (heating, ventilation, air-conditioning)? Tip: This is a minimum requirement for BOMA BESt. Preventative 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. More detailed suggested practices are available from BOMA Canada, including maintenance to be performed monthly, quarterly, semi-annually, annually, and every 5 years.	☐Yes ☐No	

Are commissioning principles (e.g. continuous commissioning) and practices implemented in response to changes to facility occupancy, usage, repair or retrofits? Describe: Commissioning principles description Tip: Continuous commissioning or recommissioning is an ongoing process that goes beyond an operations and maintenance program, which serves to resolve operating problems, improve comfort and optimize energy use. Recommissioning is required at the time of major retrofits and occupancy changes. It focuses on improving overall system control and operation for the building. It does not ensure that the systems function as originally designed, but ensures that the systems operate optimally to meet the current requirements. The optimal operational parameters and schedules are developed based on actual building conditions and current occupancy requirements. Installing an energy management system that allows continuous commissioning through hourly or larger data collection points allows a facility management team to keep a building "tuned" without the cost of commissioning.	☐Yes ☐No	

1.10 Transportation		**60**
Public Transportation		
Does the building have access to public transport within 500 meters? 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.	☐Yes ☐No	
Is there service at least every 15 minutes during rush hour? Tip: Commuters expect public transport service at least every15 minutes during rush-hour periods.	☐Yes ☐No	
Cycling Facilities		
Are there bicycle racks for minimum 5% of occupants? Tip: Providing bicycle facilities for minimum 5% of occupants at destinations encourages cycling to work	☐Yes ☐No	
Are bike racks, sheltered from rain? Tip: Sheltering bicycles from rain protects personal assets and further encourages cycling to work.	☐Yes ☐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 minimum 5% of permanent occupants.	☐Yes ☐No	
Other measures		
Are there other measures to reduce car dependency (e.g. car-pooling, purchase of transit passes, auto share services on-site)? Describe:_____ Other transit measures description 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. Locating a rental vehicle on the premises reduces the need to take a car to work. Improving the site access for pedestrian and bikes through signage and/or landscaping can also help to decrease car dependency.	☐Yes ☐No	

2.0 WATER (8%)			**80**
2.1 Water Consumption			**30**
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:This will be calculated automatically if detailed data is entered below. . If detailed information is not available, please provide an estimate.		$ _____	
What was the water consumption and costs, in total or by month, for the 12 month period specified? If you do not have the breakdown by month, please enter the total consumption 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. This will be rated automatically based on the following scale: 18 points- less than 2.0 m3/m2/year 24 points- less than 1.0 m3/m2/year 30 points- less than 0.5 m3/m2/year			
Water month 1:	m^3	Cost $	
Water month 2:	m^3	Cost $	
Water month 3:	m^3	Cost $	
Water month 4:	m^3	Cost $	
Water month 5:	m^3	Cost $	
Water month 6:	m^3	Cost $	
Water month 7:	m^3	Cost $	
Water month 8:	m^3	Cost $	
Water month 9:	m^3	Cost $	
Water month 10:	m^3	Cost $	
Water month 11:	m^3	Cost $	
Water month 12:	m^3	Cost $	
2.2 Water Conserving Features			**32**
For each category of fixture, indicate what percentage of the fixtures are water efficient:			
• low flow toilets that use less than 6L/flush?		☐ 70% - 100% ☐ 40% - 70% ☐ Under 40%	
• ultra low flush urinals that use less than 3L/flush?		☐ 70% - 100% ☐ 40% - 70% ☐ Under 40%	
• automatic valve controls and/or proximity detectors on toilets and urinals?		☐ 70% - 100% ☐ 40% - 70% ☐ Under 40%	
• low flow faucets (7.5 L/min) and/or proximity detectors on faucets?		☐ 70% - 100% ☐ 40% - 70% ☐ Under 40%	

• other water-saving features? Description:_____ Other water saving features description Tip: Other water-saving devices include low flow showerheads (9.0 liters/min.), waterless urinals, greywater systems etc.	☐Yes ☐No	
Does the landscaping minimize the need for irrigation? Description:_____ Xeriscaping description Tip: Landscaping that requires low or no supplemental irrigation, sometimes refer to as xeriscaping involves the use of plant species, often native, 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".	☐Yes ☐No ☐N/A	
Are the following non-potable sources of water used for irrigation:		
• Rainwater? Tip: Rainwater is a water collected specifically for irrigation in rain cisterns. Rainwater collection systems can be located either inside or outside the building. Green roof would also qualify as a capture system for rainwater. If the building covers more than 80% of the site area, i.e. there is no land available for landscaping, mark "not applicable".	☐Yes ☐No ☐N/A	
• Graywater? Tip: Gray water is treated waste-water from sinks and showers (not toilets) that has had soils and undesirable bacteria removed.While a graywater system often requires an outside treatment field, the graywater system, sometimes referred to as dual plumbing, can be located either inside or outside the building. If the building covers more than 80% of the site area, i.e. there is no land available for landscaping, mark "not applicable".	☐Yes ☐No ☐N/A	
Is the following water efficient technology used for irrigation: Tip: If there is no landscapting, or where landscaping does not require any irrigation, mark "not applicable."		
• Drip irrigation?	☐Yes ☐No ☐N/A	
• Root-fed irrigation?	☐Yes ☐No ☐N/A	
• Other water efficient technology? Describe: Other irrigation measures description	☐Yes ☐No ☐N/A	
Are moisture sensors used to control irrigation?	☐Yes ☐No ☐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.	☐Yes ☐No	
2.3 Water Management		**18**
Is there a written policy intended to minimize water use, and encourage water conservation? Tip: This is a minimum requirement for BOMA BESt. A water conservation policy should express a commitment to reducing demand for water and to establish goals and strategies to reduce water consumption.	☐Yes ☐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.	☐Yes ☐No	
Has a water audit been done within the last three years? Tip: This is a minimum requirement for BOMA BESt. The water audit report must include: • Water billing analysis with benchmarking observations • Summary of major water-consuming systems in the buildings • List of potential water conservation opportunities based on walk-through audit of the facility • Building owner and manager information, building name and address, date of study completion • Building description An audit should provide recommendations for maintenance procedures that may need to be revised, and identify water-using equipment that should be upgraded. The water audit report may be incorporated into the energy audit report.	☐Yes ☐No	
Are there water-reduction targets? Tip: Water targets should be established in litres/m², or as a percentage reduction in litres/person.	☐Yes ☐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.	☐Yes ☐No	

3.0 WASTE REDUCTION AND SITE (11%)		**110**
3.1 Waste Reduction and Recycling		**55**
Recycling, Handling and Storing Recyclable Materials		
Is there a recycling program that incorporates the recycling of office paper, newspaper, cardboard, bottles, plastic and cans, for tenants, shoppers and operations at the site, to the extent that local infrastructure is available to accommodate these materials? Tip: This is a minimum requirement of BOMA BESt. . The property must have an active recycling program.	☐Yes ☐No	
Are there separate storage/handling facilities for used paper products, glass, metal and plastic? 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 paper, glass, metal and plastic in the areas where waste is generated? Tip:. Collection points near the areas where waste is generated typically increase recycling rates. All collection should separate recyclables form waste garbage as per local or hauler requirements.	☐Yes ☐No	
Is there a recycling program for:	☐Yes ☐No	
batteries?	☐Yes ☐No	
fluorescent lamp?	☐Yes ☐No	
electronic waste?	☐Yes ☐No	
Does the building have a composting program for organic waste? Tip: Composting may be done on-site or off-site at a special centralized facility. Mark “not applicable” where there are no facilities available to divert compost.	☐Yes ☐No	
Waste Reduction Program		
Has a waste audit been done within: 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.	☐ The last year? ☐ The last 3 years? ☐ 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	
What is the current diversion rate? 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.	☐ above 90% ☐ 80% - 90% ☐ 70% - 79% ☐ 60% - 69% ☐ 50% - 59% ☐ 30% - 49% ☐ Under 30% ☐ Unknown	
OPTIONAL – Entering monthly waste figures is encouraged, but not required. Waste figures should include all waste from the property.		
Please specify the ending month of the 12 month period for which solid waste figures are being entered.	Month _____ Year _____	
If you do not have monthly data, what was the building's total waste/recycling bill for the 12 month period specified? Tip: This will be calculated automatically if detailed data is entered below.	$ _____	

What was the total waste/recycling, in total or by month, for the 12 month period specified? Tip: Enter the total amount of waste in metric tonnes (aggregate garbage and recycling) for each month or as a total amount for the 12 month period specified.			
Waste/recycling month 1:	MT	Cost $	
Waste/recycling month 2:	MT	Cost $	
Waste/recycling month 3:	MT	Cost $	
Waste/recycling month 4:	MT	Cost $	
Waste/recycling month 5:	MT	Cost $	
Waste/recycling month 6:	MT	Cost $	
Waste/recycling month 7:	MT	Cost $	
Waste/recycling month 8:	MT	Cost $	
Waste/recycling month 9:	MT	Cost $	
Waste/recycling month 10:	MT	Cost $	
Waste/recycling month 11:	MT	Cost $	
Waste/recycling month 12:	MT	Cost $	
Are there waste-reduction targets? Tip: A Waste reduction workplan should identify resources needed to achieve waste reduction targets and assign responsibilities.		☐Yes ☐No	
Is there a written policy intended to minimize construction waste being sent to landfill? Tip: This is a minimum requirement of BOMA BESt. Construction and demolition waste – which accounts for about 30% of Canada's landfill – can be reduced by implementing source separation and recycling programs on-site. The program should meet the minimal requirements of the jurisdiction (eg. 3R Code of Practice). The Waste specification should identify the materials actually addressed (eg. Corrugated cardboard, metals, concrete blocks, clean dimensional wood, plastic, glass, gypsum board and carpet).		☐Yes ☐No	

3.2 Site		55
Site Pollution		
Is the building site free of contamination? Tip: There should be evidence that the site is free of contamination; or that it has been remediated to an acceptable level.	☐Yes ☐No ☐Unknown	
If the site is known to be free of contamination, which of the following is this based on:		
• Document Search? 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).	☐Yes ☐No	
• Phase 1 Environmental Assessment? Tip: A Phase 1 Environmental Site Assessment has been conducted that proves the site to be free of contamination.	☐Yes ☐No	
• Confirmation Phase 2 Environmental Site Assessment or Phase 3 Clean Up Report? Tip: The site was once contaminated, but has been remediated to an acceptable level, as indicated by a Phase 3 Cleanup Report.	☐Yes ☐No	
If the site is known to be contaminated, are efforts being made to clean it up? Tip: If the site is known to be uncontaminated, mark "not applicable".	☐Yes ☐No ☐N/A	
Site Enhancement		

Are there indications that the site ecological value has been enhanced? Describe measures: Site enhancement description Tip: The ecological value can be enhanced by increasing rooftop vegetation and the number of indigenous plant species, by reducing the outdoor light pollution, by participating in the FLAP program or by creating a small natural "oasis" on the site. If the building occupies over 90% of the site area, mark this "not applicable".	☐Yes ☐No	

4.0 EMISSIONS AND EFFLUENTS (17.5%)		**175**
4.1 Air Emissions		**30**
Boiler Emissions		
What percentage of the building's boilers have low NOx emission rates? Tip: A low-NOx emitting boiler produces less than 26 g/GJ NOx (100 mg NOx/kWh). If there are no boilers, mark "not applicable".	☐None ☐25% ☐50% ☐75% ☐100% ☐N/A	
Are records kept of cleaning of burners, monitoring of controls, and analysis of flue gas? Tip: The maintenance should take place once or twice per year. If there are no boilers, mark "not applicable".	☐Yes ☐No ☐N/A	
4.2 Emissions – Ozone Depletion		**45**
Refrigerants		
What type of refrigerant is used for most of the cooling in the building chiller system? Select applicable ☐ R11 ☐ R12 ☐ R22 ☐ HCFC123 ☐ HFC134 ☐ R410A ☐ R410B ☐ Other Describe:_____ Other refrigerant with ODP=0 ☐ N/A Tip: Mark all that apply. 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	
If the building has on-site ozone-depleting substances (ODS), are there recovery facilities that comply with federal guidelines and requirements? 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		
Is there a documented management plan for Ozone Depleting Substances (ODS) that includes: Tip: This is a minimum requirement for BOMA BESt. 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: This is a minimum requirement for BOMA BESt. Until December 31, 2009, charging a chiller with CFCs following an overhaul will still be authorized if the owner agrees to convert or replace his system within 12 months after it has been charged so that it no longer contains CFCs..Effective January 1, 2015, operating or allowing the operation of a chiller containing CFCs will be prohibited. If there are no ODS, mark "not applicable".	☐Yes ☐No ☐N/A	
Is there a maintenance contract for the cooling system with a certified contractor? 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".	☐Yes ☐No ☐N/A	
Halons		
Are there halon fire-protection systems in the building? 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.	☐Yes ☐No	

4.3 Emissions – Water Effluents		**20**
Waste Water Effluents		
Are floor drains protected in areas where chemicals are stored? 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.Where there are no chemicals in the building, mark "not applicable."	☐Yes ☐No ☐N/A	
Are roof drains connected to sanitary or combined sewers? Tip: Disconnecting roof drains from sanitary or combined sewers avoids unnecessarily loading the community wastewater treatment facilities.	☐Yes ☐No	
Are storm management measures implemented to reduce water run-off from roofs and hard surfaces, such as parking areas? Describe measures: Storm water management description 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".	☐Yes ☐No ☐N/A	
Are there documented procedures in place to ensure that glycol discharges from the flushing of cooling coils are minimized or eliminated? 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.	☐Yes ☐No ☐N/A	

4.4 Emissions - Hazardous Materials		45
Hazardous Materials Survey		
Has a hazardous building materials survey been completed and has an inventory of these materials been maintained? Tip: This is a minimum requirement for BOMA BESt. The survey should indicate if asbestos-containing materials, PCBs, lead paint or mercury are present in the building.	☐Yes ☐No	
Asbestos		
If the building was completed at a time when asbestos was used in construction (up to 1981), is there an up-to-date inventory based on an asbestos survey, that includes records of locations and the condition of all asbestos? Tip: If there is no asbestos in the building mark "not applicable".	☐Yes ☐No ☐N/A	
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)? 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".	☐Yes ☐No ☐N/A	
Is there a documented asbestos management plan that includes training and the precautions to be taken during repairs and renovations? Tip: If the building was completed after 1981, mark "not applicable".	☐Yes ☐No ☐N/A	
Radon		
Is the building located outside a high risk area or has a radon survey been done which indicates levels below 200 Bq/m^3? Where applicable, describe precaution taken: Radon measures Tip: Radon is a colourless, odourless, 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 Canada are Winnipeg, Calgary, Vancouver, Sherbrooke, Saint John and Sudbury. A Phase 1 Environmental Site Assessment will typically make reference to radon levels.	☐Yes ☐No	
PCBs		
Are there any PCBs present in the building? 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".	☐Yes ☐No	
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? Tip: If there are no PCBs mark "not applicable". Mark "yes" only if the plan contains all of the above elements.	☐Yes ☐No ☐N/A	

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? Tip: If there are no PCBs mark "not applicable". Mark "yes" only if there are procedures for all of the above.	☐Yes ☐No ☐N/A	
Storage Tanks		
Are there any above-ground (AST) or under-ground (UST) storage tanks? 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.	☐Yes ☐No	
Is there a storage tank management plan, which ensures legal compliance and includes the following operation and maintenance procedures: Tip: Choose as many procedures as apply. If there are no storage tanks mark "not applicable".		
• tank system registration and annual reporting as required under CEPA Regulations (e.g. AST greater than 4,000 L and/or all UST)? Tip: All underground storage tank systems and all outdoor aboveground storage tank systems that have a single or combined capacity of 4,000 litres or more should be registered. If there are no storage tanks or if the single or combined capacity of the storage tank systems is less than 4,000 litres, mark "not applicable".	☐Yes ☐No ☐N/A	
• inventory (reconciliation) control? Tip: Establishing an inventory of tank systems is the first step in preparing tank management plan. If there are no storage tanks, mark "not applicable".	☐Yes ☐No ☐N/A	
• tank upgrading and replacement schedule? Tip: The components that are subject to upgrade are leak detection, secondary containment, corrosion protection, overfill protection and spill containment. Mark "non-applicable" if there are no storage tanks. Mark "yes" if tanks were already replaced or upgraded.	☐Yes ☐No ☐N/A	
• system testing? Tip: System tests include leak tests and dipping for diesel in water and for water in diesel. If there are no storage tanks, mark "not applicable".	☐Yes ☐No ☐N/A	
• filling, transferring operations and spill protection? Tip: The Technical Guidelines and Codes of Practice may require property managers to install systems for spill containment, overfill protection, secondary containment, dispenser sump and leak detection. Various systems are available for both aboveground and underground storage tank systems. If there are no storage tanks, mark "not applicable".	☐Yes ☐No ☐N/A	
• emergency preparedness? 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. If there are no storage tanks, mark "not applicable".	☐Yes ☐No ☐N/A	
• record keeping? Tip: All inspections and maintenance, alterations and upgrading should be documented. If there are no storage tanks, mark "not applicable".	☐Yes ☐No ☐N/A	
• tank closure, abandonment or removal? Tip: A storage tank system must be properly decommissioned when replaced or taken out of service. If there are no storage tanks, mark "not applicable".	☐Yes ☐No ☐N/A	

4.5 Emissions – Hazardous Products and WHMIS		35
WHMIS Program		
Are MSDSs spill clean-up kits, and safety equipment such as eye-wash stations located in an accessible place near the chemical storage areas? Tip: Material Safety Data Sheets (MSDS) contain information about the properties and safe handling of each hazardous product.	☐Yes ☐No	
Are the MSDSs less than 3 years old? Tip: Data sheets should not be more than 3 years old.	☐Yes ☐No	
Are WHMIS labels present on regulated products? Tip: Implementing the Workplace Hazardous Materials Information System (WHMIS) is a Canada-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.	☐Yes ☐No	
Health & Safety and Management of Hazardous Products		
Are chemicals and hazardous materials stored under appropriate conditions in secure locations? 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.	☐Yes ☐No	
Is a hazardous products (hazardous chemicals) management plan in place? Tip: This is a minimum requirement for BOMA BESt. A hazardous products management plan should indicate how controlled products are received at the facility, how they are to be used and disposed of. It should also include WHMIS sheets for all products identified in the inventory.	☐Yes ☐No	
Are education and training provided for the person responsible for the management of chemicals and for staff who may be required to work with them? Tip: WHMIS education refers to the instruction of workers in general information such as how WHMIS works and the hazards of controlled products, whereas training refers to the instruction in site-specific information such as work and emergency procedures.	☐Yes ☐No	
Is there a designated person responsible for managing hazardous products? Tip: The designated person should be responsible for: (1) advising workers of potential and actual hazards (2) ensuring that workers use prescribed protective equipment devices, and (3) taking every reasonable precaution for the protection of workers.	☐Yes ☐No	
Are there inventory and records of the hazardous products/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.	☐Yes ☐No	

Is there a Heath 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".	☐Yes ☐No ☐N/A	
Pesticides		
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.	☐Yes ☐No	
Do landscaping practices minimize the use of pesticides, herbicides, fertilizer and petroleum-based products? Describe the extent to which these products are used, and any alternative methods being employed on both the exterior and interior: Landscaping (pesticides) description. 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".	☐Yes ☐No ☐N/A	
Are pest-control inspections done monthly? Tip: If there is no landscaping or pest-control management is not required, mark "not applicable."	☐Yes ☐No ☐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."	☐Yes ☐No ☐N/A	

5.0 INDOOR ENVIRONMENT (17.5%)		175
Indoor Air Quality		**133**
5.1 Indoor Air Quality - Ventilation System		**24**
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.	☐Yes ☐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.	☐Yes ☐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.	☐Yes ☐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".	☐Yes ☐No ☐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".	☐Yes ☐No ☐N/A	
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_2 monitoring can be installed as an independent system or be a function of the building automation system, preferably with feedback on space ventilation performance and operation of the air intake vents.	☐Yes ☐No	
Are the CO_2 monitors annually calibrated? Tip: If there are no CO2 monitors, mark "not applicable."	☐Yes ☐No ☐N/A	
Are measured CO_2 levels less than 850 ppm (assuming outdoor levels 400 ppm)? Tip: Measure CO_2 concentration using a Draeger pump or CO_2 data logger. Be sure to take enough readings to establish a representative profile for a wide range of spaces in the building.	☐Yes ☐No ☐Unknown	
Do the occupants have personal control over the ventilation rates in the area in which they work, either through hybrid system (operable windows) or personalized HVAC controls? Describe: Personal ventilation controls description. Tip: Personal controls refer to 4-6 workstations or less.	☐Yes ☐No	

5.2 Indoor Air Quality - Filtration System		11
Are filters able to remove particles as small as 0.3 micrometers from incoming air (Efficiency Grade between 60% and 85% Dust Spot or a Minimum Efficiency Reporting Value (MERV) of 8)? Tip: The efficiency of filters is usually indicated on filter packages.	☐Yes ☐No	
Are manometers or pressure sensors 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. Does not apply for buildings under 100,000 square feet.	☐Yes ☐No ☐N/A	
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. Does not apply for buildings under 100,000 square feet.	☐Yes ☐No	
Do 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. Does not apply for buildings under 100,000 square feet.	☐Yes ☐No	
5.3 Indoor Air Quality - Humidification System		**15**
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". Does not apply for buildings under 100,000 square feet.	☐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". Does not apply for buildings under 100,000 square feet.	☐Yes ☐No ☐N/A	
5.4 Indoor Air Quality - Cooling Towers		**15**
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 spray that could contain Legionella. Eliminators can be internal or external to the cooling tower. If there are no cooling towers, mark "not applicable".	☐Yes ☐No ☐N/A	

Is there at least monthly inspection of cooling towers for evidence of mould or slime, which could indicate elevated levels of bacteria; regular treatment of the cooling tower water; and complete cleaning and disinfection of each cooling tower at least every six months? 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	

5.5 Indoor Air Quality - Parking and Receiving		**10**
Are enclosed parking areas mechanically ventilated? Tip: Closed garages are generally underground and require mechanical ventilation to avoid carbon monoxide, oil and gas 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".	☐Yes ☐No ☐N/A	
Are there measures to prevent intake of exhaust fumes from the loading dock and parking areas? Tip: Measures include posting notices to turn off vehicles; having well-sealed doors between the parking and occupied areas; ensuring that offices 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".	☐Yes ☐No ☐N/A	
Is there a carbon monoxide detection and monitoring system:		
• In enclosed parking garages?	☐Yes ☐No ☐N/A	
• Near gas or fuel-fired heating boilers?	☐Yes ☐No ☐N/A	
5.6 Indoor Air Quality - Control of Pollutants at Source		**33**
Have there been ongoing observations or complaints of symptoms of mould or excess moisture: Tip: 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?	☐Yes ☐No	
• Musty odours?	☐Yes ☐No	
• Damp or musty carpets?	☐Yes ☐No	
Do large printing rooms, cafeteria, kitchens, chemical storage and washrooms have effective local exhaust? Tip: 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.	☐Yes ☐No	

Are there documented measures to control pollutants at source in areas such as washrooms, kitchens, printing areas, chemical storage and general storage areas? Describe: Pollution control docs description. Tip: 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.	☐Yes ☐No	
Does the contract with the building cleaning staff or contractors specifically state that they are to use environmentally friendly cleaning materials? Tip: These are cleaning materials which do not greatly sacrifice performance and which are biodegradable, do not contain phosphates, or do not fall under the Hazardous Products Act. This requirement should be documented in the cleaning contract.	☐Yes ☐No	
Is there a designated smoking area outside that is away from entrances and will limit the spread of smoke to the inside of the building? Tip: Banning smoking is the most effective way to avoid environmental tobacco smoke - a source of irritation and a known carcinogen.	☐Yes ☐No	
Is there a checklist of items connected to Indoor Air Quality that must be discussed with architects, engineers, contractors, and other professionals prior to renovations and repairs? Describe: Renovation checklist description Tip: Discussion is essential to avoid design features that could interfere with ventilation or thermal comfort, or which could 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 and to avoid sealants, finishes, carpets and furnishings that emit volatile organic compounds (VOCs).	☐Yes ☐No	
5.7 Indoor Air Quality Management		**25**
Does building management have in place a documented means for addressing tenants/occupant concerns regarding indoor air quality (such as a complaint form and incident log)? Tip: This is a minimum requirement for BOMA BESt. Building management must have in place a documented means for addressing tenants/occupant concerns regarding indoor air quality.	☐Yes ☐No	
Has the building had an Indoor Air Quality 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 Indoor Air Quality that include: Tip: Building management must have a heating, ventilation and air conditioning (HVAC) procedures and preventive maintenance program in place.		
• HVAC operations? Tip: There should be daily, weekly and monthly schedules.	☐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	
• 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	
• Mould management? Tip: Key elements of this program should be: 1)Detect moisture and mould growth early to minimize property damage and liability; 2) Provide guidance for preventing and responding to moisture /water or mold growth conditions; and 3) Outline the minimum required procedures for responding to a moisture/water or mould growth condition.	☐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	
Describe procedures for maintaining good Indoor Air Quality: IAQ maintenance procedures description.		
Is building management sufficiently trained to implement an Indoor Air Quality program to address tenant concerns? Tip: The training should be adequate to enable staff to identify, prevent and solve indoor air quality problems. IAQ problems can be complex. Staff should also have a clear understanding of when it is advisable to call in a professional and the authorization to do so.	☐Yes ☐No	
Are the following being monitored continuously: Tip: The building should conform to ASHRAE 55-1992 Addenda 1995 for thermal comfort.		
• Temperature?	☐Yes ☐No	
• Humidity?	☐Yes ☐No	

5.8 Lighting		**32**
Lighting Features		
Are high frequency ballasts fitted to luminaries? 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	
Do lighting levels meet IES (Illuminating Engineering Society of North America) guidelines of 500-800 lux (50-75 footcandles) for office space? Tip: To measure lighting levels, use an illuminance light meter. General (ambient) lighting - the most common type of office 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. Lower lighting levels with no glare are often better to view the computer screens.	☐Yes ☐No ☐Unknown	

Is individually controlled task lighting provided? Tip: This is lighting which shines directly from the luminaire to the task. It includes desk and table lights.	☐Yes ☐No	
Does the floor plan of the building potentially allow for 80% of a typical working area to have access to day-lighting or are approximately 40% of workstations within 7 meters from the windows? Tip: Although tenants may erect barriers that prevent daylight from penetrating in the area, consider whether the building plan could allow easy access to daylight	☐Yes ☐No	
Are there good lighting controls? Tip: Each control should be for no more than four workstations, assuming 7 m² per workspace.	☐Yes ☐No	
Lighting Management		
Is there a planned schedule of cleaning light fixtures? 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. Does not apply for buildings under 100,000 square feet.	☐Yes ☐No	
Is there a group-relamping program? 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 Does not apply for buildings under 100,000 square feet.	☐Yes ☐No	

5.9 Noise		**10**
Noise		
Is it easy, in open office areas, to engage in a conversation using a normal voice, understand a phone conversation, and have a private conversation using lowered voices? Tip: To measure sound levels, use an integrated sound-level meter with 'A' weighting in accordance with the CSA Standards Z 107.51 and Z 107.53. The readings should be no more than 50 dB LAeq,T.	☐Yes ☐No	
Is there sufficient acoustic privacy? Tip: In open offices, speech should be heard but not generally understood in adjacent work stations, and it should be possible to have a private conversation using lowered voices. In enclosed offices, it should be possible to maintain confidentiality using normal voice levels.	☐Yes ☐No	

6.0 ENVIRONMENTAL MANAGEMENT SYSTEM (11%)		110
6.1 Environmental Management System (EMS) Documentation		**30**
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.	☐ Energy conservation? ☐ Water conservation? ☐ Waste reduction and recycling? ☐ Environmental purchasing? ☐ Reduction in use and proper handling of hazardous products? ☐ Training and education?	
Are there action plans to improve the environmental and energy performance of the building? Describe: Action Plan description. 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	
As tenants renew their leases or where there is a tenant turnover, do the new leases contain a section on energy and environmental responsibilities (Green Lease)? Tip: Green Leases increase the responsibility of tenants to operate efficiently within their space and to maximize environmental benefits of the building. For owner occupied buildings, mark "not applicable."	☐Yes ☐No ☐N/A	
6.2 Environmental Purchasing		**25**
Does building management have a written environmental-purchasing policy? Tip: The policy should give direction to a plan that assigns responsibilities, ensures that those who do purchasing have adequate training; refers to products used by in-house staff; stipulates requirements for cleaning contractors; and provide seducation to tenants.	☐Yes ☐No	
Is there a list of preferred products used in housekeeping and building maintenance? Identify who maintains the list:_____ Ecopurchaser list maintainer Provide examples of products being used:_____ Preferred products examples. 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 efficient building equipment? Provide examples: Energy efficient equipment purchased examples. Tip: The policy should include the requirement that any purchases of appliances and HVAC should involve consulting the EnerGuide and /or purchase of Energy Star rated products..	☐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	
Does building management have a written policy for the selection of building materials that attempts to reduce any potential negative impact on the environment? Tip: This is a minimum requirement for BOMA BESt. The policy committing the organization to using low environmental impact building materials and equipment in its facilities should also be part of the tenant construction guidelines or an appendix to a lease where tenant improvement restrictions are mentioned. Examples of low impact building materials include materials with high recycled content or low off-gassing carpeting and furnishings.	☐Yes ☐No	
6.3 Emergency Response		**20**
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	
Are there contingency plans for both short-term and long-term power failures? Tip: Planning for power failures should address the following elements: communication to tenants; security; provision of emergency power and water; and, if necessary, evacuation	☐Yes ☐No	
Is there a site map showing the location of environmentally significant features such as shut-off valves, underground and above ground storage tanks etc.? 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. Does not apply for buildings under 100,000 square feet.	☐Yes ☐No	

6.4 Tenant Awareness		35
Is there a well understood system for communicating with tenants/occupants regarding environmental initiatives and practices in the building? Tip: This is a minimum requirement for BOMA BESt. Building management must have in place a well-understood system for communicating with tenants/occupants on environmental issues specific to the building. Tenants should be provided with information, and should have a forum or hotline to discuss the environmental concerns and to coordinate their activities. Describe the system: Tenant communications system description.	☐Yes ☐No	
Are there communications to tenants on the environmental measures that they can implement in the building to contribute to: Tip: Guidance on energy and environmental issues should be provided in the Tenants' Manual.		
• Energy conservation plug load reduction? Tip: An inexpensive way to reduce energy costs is by developing energy efficiency procedures and personal habits. Provide information to occupants 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).	☐Yes ☐No	
• Waste reduction and recycling? Tip: This can include promotional materials such as brochures and newsletters to keep tenants informed about how they can reduce the amount of waste being sent to landfill through such things as recycling and composting.	☐Yes ☐No	
• Proper handling, storage and disposal of toxic products? Tip: The information should be of a general nature and should communicate that each toxic product has its own characteristics, which require proper handling, storage and disposal. This can include newsletters, postings on bulletin boards, signage, memos or participation in events that promote responsible environmental stewardship.	☐Yes ☐No	
Has a tenant satisfaction survey been completed in the last 3 years? Tip: Tenant satisfaction survey enables property managers to prioritise efforts and maximize the performance of their assets. Does not apply for buildings under 100,000 square feet.	☐Yes ☐No	