BOMA BEST® Building Environmental Standards

# BOMA BEST Sustainable Buildings 3.0

# Universal Questionnaire

Updated Dec 2021

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# BUILDING INFORMATION

1. Is the building being recertified?
    - Yes
    - No
2. In what era was the building constructed?
    - Prior to 1900
    - 1900-1950
    - 1951-1989
    - 1990-2004
    - After 2005
3. Please choose the preferred unit of area for building measurements.
    - Square metres
    - Square feet
4. What is the building's interior floor area?

Floor area measurements have many different names (Gross Measured Area, Interior Gross Area, and Exterior Gross Area). For the purposes of benchmarking energy and water BOMA BEST, the term Gross Floor Area (GFA) will be used to refer to the floor measurement that includes the following areas:

- Lobbies
- Tenant Areas
- Common Areas
- Meeting Rooms
- Break Rooms
- Atriums (ground floor only)
- Restrooms
- Elevator Shafts
- Stairwells
- Mechanical Equipment Areas
- Basements
- Storage Rooms

The following spaces should not be included in this measurement:

- Exterior spaces
- Balconies
- Patios
- Exterior Loading Docks
- Driveways
- Covered Walkways
- Outdoor Courts (Tennis, Basketball, etc.)
- The interstitial plenum space between floors (which house pipes and ventilation)
- Crawl Spaces
- Parking (indoor or outdoor)

5. Does the Gross Floor Area provided include any areas that should have been excluded?

Please list the areas that should have been excluded.

6. What measurement standard was used to obtain the Gross Floor Area?
    - BOMA 1996 Office Standard (refers to the “Gross Measured Area”) – This measurement includes major vertical penetrations (i.e. “virtual floors”). These must be excluded from the values entered here.
    - BOMA 2010 Office Standard (refers to the “Interior Gross Area”) – This measurement includes the parking areas. These must be excluded from the values entered here.
    - BOMA 2009 Gross Area Standard (refers to the “Exterior Gross Area”) – This measurement includes the parking areas. These must be excluded from the values entered here.
    - BOMA 2010 Retail Standard – This measurement includes the parking areas. These must be excluded from the values entered here.
    - Other that provides an accurate measurement of the required spaces.

If None is selected, indicate how the floor area is known.

7. Where is the building located?
    - Central Business District (CBD)
    - Suburban Area
    - Rural Area
8. How many floors are there?
    - Above ground
    - Below ground

Enter the number of floors for each in the space provided.

9. Is there mechanically ventilated underground parking?
    - Yes
    - No

    Enter number of levels.

10. Is the building owner-occupied or leased?
    - Owner-occupied
    - Owner-occupied and leased
    - Leased (1-5 tenants)
    - Leased (5+ tenants)
    - Other
11. What was the occupancy rate over the past 12 months (in percentage)?

*Occupancy Rate* refers to the amount of leasable area that is leased divided by the total leasable area in the building (i.e. it is the percentage of the total rentable space that has been occupied)

12. What are the building hours of operation?
    - Monday to Friday:
    - Saturday:
    - Sunday:

Provide hours of operation when the building is 75% occupied.

13. Who are the anchor tenants? Describe
14. What types of other use are present and what are their respective areas?

Enter area in the unit previously selected.

- Restaurant/food court area
- Hotel
- Gym
- Other

15. Provide a brief general description of the building.

Provide a short description of the building. Note massing, placement on the lot, landscaping, any significant physical, historical or functional characteristics, and any significant renovations or retrofits within the last five (5) years.

# BEST PRACTICES

## ENERGY

| BEST Practice 1 | Is a Preventative Maintenance Program in place at the building? | |
|---|---|---|
| **Explanation & Evaluation** | This question is a BEST Practice and is required for all levels of certification.<br>**Description:** Preventative maintenance recognizes that certain systems and their components require scheduled periodic maintenance, as well as overhauling or replacement after a certain age, at certain intervals, or due to specific causes. The Preventative Maintenance Program is a systematic approach that outlines what equipment under the landlord's control must be reviewed, the corrective action that must be taken and how frequently this must occur.<br>**Requirements:** The Preventative Maintenance Program must outline when preventative and corrective maintenance is required to be performed on the building's equipment. Demonstration of implementation is required. The program must have been updated in the last five (5) years. Consult the BEST Practice Guidelines for a complete list of requirements concerning this BEST Practice.<br>**Additional Information:** Preventative maintenance involves inspecting and testing units for operation and faults. Corrective maintenance involves repairing a unit to bring it back to operability at its most efficient capability. | |
| **Scoring** | Yes | Certification is permitted |
| | No | Certification is not permitted |

| BEST Practice 2 | Has an ASHRAE Level 1 Energy Assessment been conducted in the last five (5) years? | |
|---|---|---|
| **Explanation & Evaluation** | This question is a BEST Practice and is required for all levels of certification.<br>**Description:** An ASHRAE Level 1 assessment refers to a simple audit of the building's configuration and energy systems. If focuses on the identification of the potential for energy efficiency improvements.<br>**Requirements:** An ASHRAE Level 1 Energy Assessment must have been conducted on the building in the last five (5) years.<br>The Energy Assessment report must contain the following elements:<br>• Analysis of energy consumption through monthly utility bill review and benchmarking. For benchmarking purposes utility bills must cover a minimum of 12 months of continuous data. If major renovations or retrofits to the building systems have occurred, use data after the time of major renovation, if possible. Major renovations include upgrades to mechanical systems, upgrades to building envelope systems and electric system upgrades including procurement of new lighting for more than 50% of the building's lighting fixtures.<br>• List major current performance of energy-consuming equipment.<br>• Prioritized list of proposed low-cost and no cost energy conserving measures (ECMs) to enable greater energy efficiency.<br>• Provision of estimates of financial savings the building owner will realize as a result of investing in ECMs. At a minimum, savings and cost estimates should be based on a generalized understanding of the systems.<br>Data used for this assessment must represent complete building data for all building spaces and uses.<br>Consult the BEST Practice Guidelines for a complete list of requirements concerning this BEST Practice.<br>**Additional Information:** The BOMA-Accepted Equivalent is available for buildings where 75% or more of the building's energy is purchased directly by tenants or if the building has been occupied for fewer than two (2) years. | |
| **Scoring** | Yes | Certification is permitted |
| | BOMA Accepted Equivalent | Certification is permitted |
| | No | Certification is not permitted |

| BEST Practice 3 | Is an Energy Management Plan in place at the building? | |
|---|---|---|
| **Explanation & Evaluation** | This question is a BEST Practice and is required for all levels of certification.<br>**Description:** Energy management is the continuous process of managing behavioral, organizational and technical change to improve the building's energy performance.<br>**Requirements:** The Energy Management Plan must have been reviewed and updated in the last three (3) years.<br>Create a plan that identifies Energy Conservation Measures (ECM) for the building (such as those provided in the Energy Audit, as available). For each initiative, identify the following:<br>• Whether a particular ECM will be pursued or not;<br>• The person responsible for the implementation of the ECM;<br>• The budget associated with the ECM; and<br>• A timeline for completion.<br>If a particular measure will not be followed-up for the building, indicate why this is the case.<br>Although demonstration of implementation is preferable, it is not necessary. The plan can be common to a portfolio or campus of buildings however building-specific information is required.<br>Consult the BEST Practice Guidelines for a complete list of requirements concerning this BEST Practice.<br>**Additional Information:** In the case of Recertification, building managers are expected to demonstrate which ECMs listed in the previous Reduction Management Plan have been implemented since certification.<br>The BOMA-Accepted Equivalent is available for buildings that have been occupied for fewer than two (2) years. | |
| **Scoring** | Yes | Certification is permitted |
| | BOMA Accepted Equivalent | Certification is permitted |
| | No | Certification is not permitted |

| BEST Practice 4 | Is an energy reduction target in place at the building? | |
|---|---|---|
| **Explanation & Evaluation** | This question is a BEST Practice and is required for all levels of certification.<br>**Description:** Clear, long-term outcome-oriented targets can help shape expectations and create the conditions in which all actors have the confidence to develop solutions to common problems. By establishing targets and indicators, progress can be assessed, and appropriate actions taken.<br>**Requirements:** An energy reduction target must be identified along with a timeframe for completion.<br>Targets must be put into writing, signed by senior management and reviewed annually, as well as be integrated into the Energy Management Plan.<br>Consult the BEST Practice Guidelines for a complete list of requirements concerning this BEST Practice.<br>**Additional Information:** The energy reduction target can be established to encompass either all utilities as a whole or divided into each type (electricity, gas) of utility under the property owner's control.<br>In the case of Recertification, building managers are expected to demonstrate what targets have been reached since certification.<br>The BOMA-Accepted Equivalent is available for buildings where 75% or more of the building's energy is purchased directly by tenants. | |
| **Scoring** | Yes | Certification is permitted |
| | BOMA Accepted Equivalent | Certification is permitted |
| | No | Certification is not permitted |

## WATER

| BEST Practice 5 | Has a Water Assessment been conducted in the last five (5) years? | |
|---|---|---|
| **Explanation & Evaluation** | This question is a BEST Practice and is required for all levels of certification.<br>**Description:** A water assessment refers to a simple audit of the building's configuration and water systems. It focuses on the identification of potential water conserving measures.<br>**Requirements:** A water assessment must have been conducted on the building in the last five (5) years.<br>The water assessment report must contain the following elements:<br>• Analysis of water consumption through monthly utility bill analysis and benchmarking. For benchmarking purposes utility bills must cover a minimum of 12 months of continuous data.<br>• List of current performance of water-consuming equipment.<br>• Prioritized list of proposed low-cost and no cost water conserving measures (WCMs) to enable greater water efficiency.<br>• Provision of estimates of financial savings the building owner will realize as a result of investing in WCM.<br>Consult the BEST Practice Guidelines for a complete list of requirements concerning this BEST Practice.<br>**Additional Information:** The BOMA-Accepted Equivalent is available for buildings where 75% or more of the building's energy is purchased directly by tenants or if the building has been occupied for fewer than two (2) years. | |
| **Scoring** | Yes | Certification is permitted |
| | BOMA Accepted Equivalent | Certification is permitted |
| | No | Certification is not permitted |

| BEST Practice 6 | Is a Water Management Plan in place at the building? | |
|---|---|---|
| **Explanation & Evaluation** | This question is a BEST Practice and is required for all levels of certification.<br>**Description:** Water management is the continuous process of managing behavioural, organizational and technical change to improve the building's water performance.<br>**Requirements:** The Water Management Plan must have been reviewed and updated in the last three (3) years. Create a plan that identifies Water Conservation Measures (WCM) for the building (such as those provided in the Water Assessment, as available). For each initiative, identify whether a particular WCM will be pursued, the person responsible for its implementation, the associated budget and a timeline for completion. If a particular measure will not be followed-up for the building, indicate why this is the case.<br>Although demonstration of implementation is preferable, it is not necessary. The plan can be common to a portfolio or campus of buildings however building-specific information is required.<br>Consult the BEST Practice Guidelines for a complete list of requirements concerning this BEST Practice.<br>**Additional Information:** In the case of Recertification, building managers are expected to demonstrate which WCMs listed in the previous Water Management Plan have been implemented since certification.<br>The BOMA-Accepted Equivalent is available for buildings that have been occupied for fewer than two (2) years. | |
| **Scoring** | Yes | Certification is permitted |
| | BOMA Accepted Equivalent | Certification is permitted |
| | No | Certification is not permitted |

## AIR

| BEST Practice 7 | Is an Indoor Air Quality Monitoring Plan in place at the building? | |
|---|---|---|
| **Explanation & Evaluation** | This question is a BEST Practice and is required for all levels of certification.<br>**Description:** Indoor Air Quality (IAQ) is achieved through the selection of appropriate and achievable air quality goals, regular surveillance and testing to verify HVAC performance and hygiene, efficient and effective procedures for addressing occupant IAQ concerns and training for all property management and maintenance personnel.<br>**Requirements:** The Air Quality Monitoring Plan must contain the following elements:<br>• Determine and state the IAQ goals for the building including targets for air quality parameters such as carbon dioxide, carbon monoxide, temperature, relative humidity, dust, volatile organic compounds and other known contaminants of concern.<br>• Set a schedule for HVAC inspection and maintenance tasks to ensure good hygiene (cleanliness, no standing water, etc.).<br>• Identify HVAC systems that will impact the IAQ goals listed above.<br>• Create a preventative maintenance schedule for these systems (may overlap with the Preventative Maintenance Program BEST Practice). Equipment and systems should be checked at least annually.<br>• Develop procedures for responding to occupant IAQ concerns, including identifying key personnel and their responsibilities, contact information, documentation, and follow-up plan (may overlap with Occupant Service Request Program BEST Practice).<br>• Identify training requirements for property management and building maintenance staff relating to IAQ. and<br>• Review the plan annually and update as necessary.<br>Consult the BEST Practice Guidelines for a complete list of requirements concerning this BEST Practice.<br>**Additional Information:**<br>The BOMA-Accepted Equivalent is available for buildings where ventilation systems are owned and maintained exclusively by the tenants. In these cases, the building owner or manager must provide tenants with an Indoor Air Quality Monitoring Plan for their use.<br>Refer to the USEPA I-BEAM for more information on developing an IAQ Monitoring Plan. | |
| **Scoring** | Yes | Certification is permitted |
| | BOMA Accepted Equivalent | Certification is permitted |
| | No | Certification is not permitted |

## COMFORT

| BEST Practice 8 | Is an Occupant Service Request Program in place? | |
|---|---|---|
| **Explanation & Evaluation** | This question is a BEST Practice and is required for all levels of certification.<br>**Description:** Service request for maintenance are used to identify issues pertaining to the building. Having a formal process in place allows tracking of various Key Performance Indicators such as critical equipment maintenance and critical building maintenance.<br>**Requirements:**<br>Establish an Occupant Service Request Program for the building. The Program must include the following components:<br>• A mechanism to ensure that all service requests are reviewed and acted upon within 1-2 weeks, unless otherwise specified (e.g., critical area or critical equipment).<br>• Information on the origins of the service request;<br>• Information on the status of the service request (e.g. in progress, resolved, etc.); and<br>• Information on the corrective action taken.<br>Documentation must be kept on file for a minimum of three (3) months. Demonstration of implementation is required. The program can be common to a portfolio or campus of buildings however implementation must be building-specific.<br>Consult the BEST Practice Guidelines for a complete list of requirements concerning this BEST Practice.<br>**Additional Information:** Service requests can be made by all building occupants, including tenants, visitors and staff. | |
| **Scoring** | Yes | Certification is permitted |
| | No | Certification is not permitted |

## HEALTH AND WELLNESS

| BEST Practice 9 | Is a Hazardous Building Materials Management Program in place at the building? | |
|---|---|---|
| **Explanation & Evaluation** | This question is a BEST Practice and is required for all levels of certification.<br>**Description:** The presence and condition of hazardous building materials must be identified and managed for the safety of building occupants.<br>**Requirements:** The Hazardous Building Materials Management Program must include:<br>• Inventory of all building materials known or presumed to contain asbestos, lead, PCBs, silica and mercury (at a minimum);<br>• Inspection of known/presumed asbestos-containing materials within the past 12 months, where present;<br>• Inspection of materials known/presumed to contain lead, mercury, PCBs or other hazardous building materials or equipment within the last three (3) years, where present;<br>• Corrective actions identified during the inspections completed;<br>• Management protocols for unexpected disturbance of asbestos;<br>• Pre-construction assessment of materials and equipment impacted by renovation activities for the presence of hazardous building materials;<br>• A proactive plan for the abatement of accessible asbestos-containing materials (including in the areas above acoustic tiles) and PCB-containing equipment and ballasts;<br>• Awareness training for building maintenance staff on asbestos safety; and<br>• Review and updating as changes occur to the location of hazardous materials in the building, at a minimum every three (3) years.<br>As with any management program, one should strive for continuous improvement. Review of the management program must occur as changes to the responsibilities, personnel, plans, quantity or condition of the materials occur.<br>Demonstration of implementation is required. The program can be common to a portfolio or campus of buildings however implementation must be building-specific.<br>Consult the BEST Practice Guidelines for a complete list of requirements concerning this BEST Practice. | |
| **Scoring** | Yes | Certification is permitted |
| | No | Certification is not permitted |

| BEST Practice 10(A) | Is a Hazardous Chemical Products Management Program in place at the building? | |
|---|---|---|
| **Explanation & Evaluation** | This question is a BEST Practice and is required for all levels of certification.<br>**Description:** Identification and management of chemical products in use or storage at the building is essential to manage health hazards and safety risks, as well as potential environmental impacts.<br>**Requirements:** The Hazardous Chemical Products Management Program must include **all** following components:<br>• Periodic inventory of in-use, base-building hazardous chemical products (at least annually, or as procurement is revised).<br>• Storage of chemical products in accordance with product Safety Data Sheets.<br>• Continuous and proactive review process to ensure up-to-date Safety Data Sheets for all hazardous chemical products are always available to employees, performed within the last three (3) years.<br>• Chemical products labeled in accordance with WHMIS/GHS/HAZCOM.<br>• Training of building maintenance staff (including safe handling and use of chemicals pertaining to their work, symbol recognition, safety data sheets, first aid and spill response, storage, and disposal).<br>• Review and updating of the Program as products are changed and at least annually.<br>Demonstration of implementation is required. The program can be common to a portfolio or campus of buildings however implementation must be building specific. Consult the BEST Practice Guidelines for a complete list of requirements concerning this BEST Practice. | |
| **Scoring** | Yes | Certification is permitted |
| | No | Certification is not permitted |

## CUSTODIAL

| BEST Practice 11 | Is a Green Cleaning Program in place at the building? | |
|---|---|---|
| **Explanation & Evaluation** | This question is a BEST Practice and is required for all levels of certification. Documentation demonstrating this BEST Practice must be uploaded.<br>**Description:** A Green Cleaning Program emphasizes the use of environmentally preferred products, maintenance of cleaning equipment and effective cleaning practices.<br>**Requirements:** Develop a Green Cleaning Program for the facility. It must include all following components:<br>• 50% of all cleaning products and supplies must be certified by one of the following third-party organizations: EcoLogo, Green Seal, US EPA Safer Choice, GREENGUARD, Forest Stewardship Council (FSC), Sustainable Forestry Initiative (SFI), or Sustainable Forest Management Standard (SFMI).<br>• Standard operating procedures (SOP) for cleaning activities.<br>• Cleaning logs (describing the activities carried out, the times they were carried out and by whom).<br>• Training for building cleaning staff.<br>• Annual review and updating of the overall program to ensure it still meets the objectives.<br>Where custodial services are contracted, communicate custodial goals and green cleaning initiatives to the contracted company. The contracted company must provide the building/manager with documentation showing the same information outlined in the requirements.<br>Demonstration of implementation is required. The program can be common to a portfolio or campus of buildings however implementation must be building specific.<br>Consult the BEST Practice Guidelines for additional guidance on demonstrating compliance for this BEST Practice.<br>**Additional Information:** The BOMA-Accepted Equivalent is available for buildings where cleaning is performed exclusively or partially by individual tenants. The Green Cleaning Program must be in place for areas where the building manager or owner is responsible for cleaning, and where tenants are responsible, a guidance document must be provided educating tenants on how to develop their own Green Cleaning Program. | |
| **Scoring** | Yes | Certification is permitted |
| | BOMA Accepted Equivalent | Certification is permitted |
| | No | Certification is not permitted |

## WASTE

| BEST Practice 12(A) | Is a Source Separation Program in place at the building? | |
|---|---|---|
| **Explanation & Evaluation** | This question is a BEST Practice and is required for all levels of certification.<br>**Description:** A Source Separation Program facilitates the separation of waste at the point of generation for recycling and waste destined for disposal.<br>**Requirements:** The source separation program must, at a minimum, include the collection of paper, metal cans, glass, plastic containers and cardboard unless there is no regional collection service for a specific material category (demonstrate that this is the case) and the separate collection of waste destined for disposal.<br>The source separation program must consist of the following components:<br>• Facilities that are adequately sized for the collection, handling and storage of source-separated wastes. The collection and storage of the various materials destined for recycling may be co-mingled based on the requirements of the local markets if they are always kept separate from waste destined for disposal and as long as the separation is done at a Materials Recycling Facility and not at a transfer station.<br>• The provision of information and guidance to users (e.g., signs), potential users and custodial staff describing the expectations of the program and encouraging effective source separation of waste to minimize contamination and to ensure full use of the program.<br>• Measures to ensure that the source-separated collected wastes are removed by a licensed service provider and taken to destination sites designed for the proper processing and/or disposal of each material category (reports from the service provider should transparently demonstrate this).<br>• Reasonable efforts are made to ensure that the separated waste is reused or recycled.<br>Demonstration of implementation is required. The program can be common to a portfolio or campus of buildings however implementation must be building-specific.<br>**Additional Information:** The contamination of recyclable material does not disqualify this requirement, though continued contamination should be addressed in the Waste Reduction Work Plan.<br>Off-site sorting such as at a transfer station from a single common receptacle does not qualify as source-separation in the context of the BOMA BEST application.<br>Buildings that have achieved a certification through the 3RCertified program can answer "Yes" and show their certification to the verifier. 3RCertified is a certification program for buildings in the Industrial, Commercial and Institutional (IC&I) sectors that reviews how organizations manage solid waste reduction and diversion operations. It is available across Canada. | |
| **Scoring** | Yes | Certification is permitted |
| | No | Certification is not permitted |

| BEST Practice 13 | Has a Waste Audit been completed for the building in the past three (3) years? | |
|---|---|---|
| **Explanation & Evaluation** | This question is a BEST Practice and is required for all levels of certification.<br>**Requirements:** Following the BOMA BEST Waste Auditing Requirements, the Waste Audit must address:<br>• The time period and duration of the waste sampling;<br>• The sample size (representing at least 10% of the total building's waste and recycling materials);<br>• Details specific to each collected waste stream; and<br>• How the waste data was categorized, evaluated and analyzed based on its composition (the site must be equipped with a minimum number of work tables, precise scales and mobile containers for weighing the waste).<br>The resulting Waste Audit Report must include:<br>• Summary of the sampling protocol and methodology used.<br>• Annualization of daily waste as well as other waste stream such as construction, renovation and demolition (CRD) waste and hazardous materials.<br>• Total of each waste stream and overall total.<br>• Diversion rate.<br>• Capture rate.<br>• Summary of recommendations for improving waste diversion.<br>The audit must be performed by a person with adequate qualifications as well as suitable training and experience.<br>Consult the BEST Practice Guidelines for a complete list of requirements concerning this BEST Practice.<br>**Additional Information:** In the case of tenant-managed waste streams, these need not be included in the waste audit however best practices recommend that tenants provide annual generation and disposal weight reporting for all materials that they collect independent of the building system to calculate current diversion. If tenant-managed waste streams are included, both the divertible materials and disposal material must be included. If tenant-managed waste streams are included in the diversion rate, they must also be included in the audit.<br>The Waste Audit must be performed at the building and must not be based on generalized waste facility averages.<br>Buildings that have achieved a certification through the 3RCertified program can answer "Yes" and show their certification to the verifier. 3RCertified is a certification program for buildings in the Industrial, Commercial and Institutional (IC&I) sectors that reviews how organizations manage solid waste reduction and diversion operations. It is available across Canada. | |
| **Scoring** | Yes | Certification is permitted |
| | No | Certification is not permitted |

| BEST Practice 14 | Is a Waste Reduction Work Plan in place at the building? | |
|---|---|---|
| **Explanation & Evaluation** | This question is a BEST Practice and is required for all levels of certification.<br>**Description:** A waste reduction plan is an action plan prepared to reflect the updated waste audit.<br>**Requirements:** The Waste Reduction Work Plan must consist of the following components:<br>• The Waste Reduction Work Plan must be prepared in conjunction with the waste audit (conducted in the past three (3) years). Its content should reflect the updated audit. The waste reduction work plan must address all recycling streams in the building, describing ways to increase recycling levels and reduce the waste generated.<br>• The Waste Reduction Work Plan must include, to the extent that is reasonable, plans to address the 3Rs (Reduce, Reuse, and Recycle) hierarchy: Reduction first, followed by Reuse and then Recycling. The waste reduction work plan may fit under a larger waste management plan, but must be action oriented and include identification and planning for the prevention, reduction and diversion of each identified waste stream.<br>• The Waste Reduction Work Plan sets out, for each initiative or action, those who will implement that action or initiative, timelines for implementation and the expected results. The results should be expressed as a specific diversion target, and can be an overall target for all combined waste categories or a target per waste material category.<br>• The Waste Reduction Work Plan must be available and communicated to all members of management, the maintenance, custodial and contracted cleaning staff, and all tenants or occupants including food service providers and other retail tenants (for example via the building's website or intranet service, posting in waste and recycling depot, or in the tenant manual).<br>The Waste Reduction Work Plan must be reviewed every three (3) years to reflect changes in the building strategy, challenges and achievement. In the case of a BOMA BEST Recertification, previous Waste Reduction Work Plans must be reviewed to examine whether previous goals and objectives have been met.<br>Although demonstration of implementation is preferable, it is not necessary. The plan can be common to a portfolio or campus of buildings however building-specific information is required.<br>**Additional Information:** The Waste Reduction Work Plan targets the collection programs for which the building manager or owner is responsible.<br>Buildings that have achieved a certification through the 3RCertified program can answer "Yes" and show their certification to the verifier. 3RCertified is a certification program for buildings in the Industrial, Commercial and Institutional (IC&I) sectors that reviews how organizations manage solid waste reduction and diversion operations. It is available across Canada. | |
| **Scoring** | Yes | Certification is permitted |
| | No | Certification is not permitted |

## STAKEHOLDER ENGAGEMENT

| BEST Practice 15 | Is an overarching Environmental Policy guiding the building's management? | |
|---|---|---|
| **Explanation & Evaluation** | This question is a BEST Practice and is required for all levels of certification.<br>**Description:** An Environmental Policy or vision establishes the direction building management wishes to take regarding future improvements in the building's environmental performance. Such formal statements can guide decision making and establish credible leadership to adequately address environmental issues that could result in improved operations, reductions in operational expenses, and improved management-tenant relationships.<br>**Requirements:** Create an overarching Environmental Policy (or vision) which contains the following components:<br>• A specific objective or vision statement for each of the ten (10) categories in the BOMA BEST assessment. In each case, provide a clear objective or vision regarding what your organization (or building) hopes to achieve within a specified timeline (e.g. achieve a 5% reduction in energy consumption in five years; perform the building's first air quality audit, etc.).<br>• Enter the vision statement for each assessment category in the space provided in the online portal.<br>**Additional Information:** The statements provided for each category can pull directly from objectives established in previous questions in this BOMA BEST assessment. This BEST Practice seeks to bring them together into an overarching document.<br>Demonstration of implementation is not required, nor is building-specific information. The policy can be common to a portfolio or campus of buildings. | |
| **Scoring** | Yes | Certification is permitted |
| | No | Certification is not permitted |

| BEST Practice 16 | Is an Occupant Environmental Communication Program in place at the building? | |
|---|---|---|
| **Explanation & Evaluation** | This question is a BEST Practice and is required for all levels of certification.<br>**Description:** Increasing building occupant awareness and engagement in environmental and sustainable practices can have a significant positive or negative impact on the performance of the building. Improving the environmental performance of the building can lead to many positive outcomes for building management, staff and tenants, including but not limited to lower operational costs, lower utility bills, improved indoor air quality, improved management-tenant relationships, etc.<br>**Requirements:** The Occupant Environmental Communication Program must address the following components:<br>• Selecting the communication strategies that will be used;<br>• Selecting the activities that will be encouraged;<br>• Identifying responsible individuals among management for moving each aspect of the plan forward; and<br>• Creating a timeline for implementation.<br>• Demonstrate that at least two (2) communication strategies have been implemented in the past 12 months.<br>Demonstration of implementation is required. The program can be common to a portfolio or campus of buildings however implementation must be building-specific.<br>Consult the BEST Practice Guidelines for a complete list of requirements concerning this BEST Practice.<br>**Additional Information:** *Occupants* are the permanent/regular occupants of the building, such as tenants and staff. If the building is owner-occupied, surveys should be directed to staff. Visitors to the building are not considered occupants. | |
| **Scoring** | Yes | Certification is permitted |
| | No | Certification is not permitted |

# 1. ENERGY

## 1.1 DEMONSTRATION OF INTENT

| 01.01.01 | Does building staff participate in a formalized training program focused on energy efficiency? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** Provide annual training and educational opportunities for building staff to ensure their knowledge and skills remain up-to-date on the following topics:<br>• Monitoring and efficiency<br>• Preventative and corrective maintenance<br>**Requirements:** List the external training courses or internal training completed by operations staff in the past two (2) years and those planned during the next 12 months. Training may be provided by equipment manufacturers, through college courses, designation courses (e.g., offered by BOMI Canada), online courses (e.g., BOMA E-energy training), and/or by qualified building staff members.<br>Records (such as completion certificates, transcripts, etc.) must be kept outlining who has taken what courses, when they were taken, and if they are working towards a certain designation (such a Certified Energy Manager).<br>Training must be provided on the equipment and systems for which the property owner is responsible. If duties are sub-contracted the above information must be provided for personnel assigned or have visited the site.<br>The level of training can be adjusted to reflect the level of owner responsibility for building systems. For example, in the case of RTUs owned by the property manager but controlled and maintained by the tenant, training could focus on equipment start-up, commissioning, operation (to advise tenants on operation) and specification. In the case where the RTUs are owned and maintained by the property manager but controlled by the tenant, training could focus on the above plus maintenance.<br>Demonstration of implementation is required. The program can be common to a portfolio or campus of buildings however implementation must be building-specific.<br>**Additional Information:** "Monitoring and efficiency" refers to sub-metering and reviewing utility bills to track equipment performance over time to ensure optimal operation. . "Preventative maintenance" involves inspecting and testing units for operation and faults. "Corrective maintenance" involves repairing a unit to bring it back to operability at its most efficient capability.<br>Over time, technologies and preferred practices in building operations and maintenance change. Providing regular professional development opportunities is a good way to help retain staff. Offering training and educational opportunities related to environmental/sustainable building performance not only benefit staff, but improve the performance of the building when staff training is applied at the building level. Staff should receive certificates of completion for each training/educational opportunity they complete as this signals that they were in attendance, and achieved the requirements set out by the trainer/educator.<br>Select Not Applicable if all HVAC equipment is owned, managed and maintained solely by tenants. | |
| **Scoring** | Yes | 14/14 |
| | No | 0/14 |
| | N/A | 0/0 |

| 01.01.02 | List the training courses or internal training completed by operations staff in the last two (2) years and those planned during the next 12 months. |
|---|---|
| | |

| 01.01.03 | Does the capital plan include measures to ensure continuous improvement of the energy efficiency of the building envelope? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** Improving the envelope can improve the performance of the building; however, these are typically capital-intensive projects.<br>**Requirements:** Measures to ensure continuous improvement of the energy efficiency of the building envelope include (but are not limited to): increasing the roof insulation, improving the glazing/framing systems, and increasing opaque wall insulation.<br>The capital plan must demonstrate that at least one (1) high-impact measure to improve the energy efficiency of the building envelope has received a dedicated budget, a dedicated responsible person and a timeline for implementation.<br>Provide details surrounding the extent to which the measure is expected to improve the energy efficiency of the building envelope.<br>The capital plan must have been approved and signed by senior management in the last five (5) years.<br>**Additional Information**: Measures accepted in a previous certification cannot be used again in a recertification to obtain these points. New measures must be provided. | |
| **Scoring** | Yes | 13/13 |
| | No | 0/13 |

| 01.01.04 | Have three (3) years of energy consumption data been analyzed in order to establish trends? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** Analyzing energy consumption data and establishing trends can assist facilities staff and building owners with better building management by detecting anomalies in energy use and by harnessing the power of data extrapolated over time.<br>**Requirements:** Analysis of the building's energy consumption (electricity, natural gas, etc.) must include data from at a minimum, three (3) continuous years of energy consumption. Establish a baseline and assess consumption patterns over time. The analysis must clearly show trends and anomalies in relation to established energy savings goals. Trends need not be positive.<br>Ensure you are comparing the same areas and are applying the same rules regarding whether to use normalized data (such as weather). If renovations have occurred during this time, special consideration must be applied in the analysis.<br>**Additional Information:** Select Not Applicable if the building has been occupied for fewer than three (3) years. | |
| **Scoring** | Yes | 7/7 |
| | No | 0/7 |
| | N/A | 0/0 |

## 1.2 ASSESSMENT

| 01.02.01 | Is your building eligible to obtain an ENERGY STAR Score for energy consumption using Energy Star Portfolio? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** ENERGY STAR Scores are available for the following building types in Canada:<br>• K-12 School<br>• Hospital (General Medical and Surgical)<br>• Office (covers office and financial office)<br>• Parking<br>• Medical office<br>• Supermarket/Grocery Store (covers supermarket/grocery store, food sales, and convenience store with or without gas station)<br>• Senior Care Community (covers senior care community and residential care facility)<br>• Swimming Pool<br>**Requirements:** Eligible building types will be scored on their energy consumption using ENERGY STAR Score. Building types that are not eligible will not be scored on their energy consumption in this manner; rather, an alternative set of questions will assess performance.<br>**Additional Information:** Additional information can be found in this FAQ. | |
| **Scoring** | Yes | For informational purposes |
| | No | For informational purposes |

If your building is eligible to pursue an ENERGY STAR Score (Compliance Pathway 1), please complete questions 01.02.02 until 01.02.04 and then continue with 01.02.11.

If your building is **not** eligible to pursue an ENERGY STAR Score (Compliance Pathway 2), please complete questions starting with 01.02.05 until the end of the section.

## COMPLIANCE PATHWAY 1

| 01.02.02 | Do you benchmark energy performance using either the BOMA BEST or ENERGY STAR Portfolio Manager portal? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** Benchmarking informs organizations about how much energy they use and where they use it. It allows organizations to identify opportunities to optimize energy use and reduce operating costs.<br>**Requirements:** You must be able to generate a weather-normalized site energy use intensity on your building's Property characteristics page to obtain these points.<br>You must enter at least **24-consecutive months** of energy consumption data using either the BOMA BEST portal (instructions) or ENERGY STAR Portfolio Manager (instructions).<br>• Data must be entered in individual months. Data **cannot** be a bulk amount representing the complete 24-month timeframe<br>• Data must not be any older than the last 36 months<br>• Data must represent all fuel types used in the building<br>• Data must represent the entire building's consumption<br>• Data should not represent consumption during periods of major renovations<br>Tips on benchmarking are available in this FAQ. | |
| **Scoring** | BOMA BEST | 10/10 |
| | ENERGY STAR | 10/10 |
| | No | 0/10 |

| 01.02.03 | What is the calculated weather-normalized site Energy Use Intensity (EUI) for this building? |
|---|---|
| **Explanation & Evaluation** | **Description:** Using the BOMA BEST or the ENERGY STAR Portfolio Manager portals, generate a weather-normalized site EUI for the building.<br>**Requirements:** Same requirements as question 01.02.02.<br>**Additional Information:** In the case where multiple buildings are being assessed using a single questionnaire (must meet the BOMA BEST definition for single building), a single EUI must be provided here. To obtain this EUI, representative of the total space and the total consumption, create an additional space in BOMA BEST or in ENERGY STAR Portfolio Manager, that combines the entire complex's area and its consumption. |
| **Scoring** | For informational purposes |

| 01.02.04 | What is the ENERGY STAR Score achieved by this building? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** Using the BOMA BEST or the ENERGY STAR Portfolio Manager portals, generate an ENERGY STAR Score for the building.<br>**Requirements:** Same requirements as question 01.02.02.<br>**Additional Information:** In the case where multiple buildings are being assessed using a single questionnaire (must meet the BOMA BEST definition for single building), a single ENERGY STAR Score must be provided here. To obtain this ENERGY STAR Score, representative of the total space and the total consumption, create an additional space in BOMA BEST or in ENERGY STAR Portfolio Manager, that combines the entire complex's area and its consumption. | |
| **Scoring** | Unknown | 0/90 |
| | 0-49 | 0/90 |
| | 50 | 10/90 |
| | 51-100 | 10 points for achieving an ENERGY STAR Score of 50 + 2 BOMA BEST points for every ENERGY STAR Score above 50, up to 90 points. E.g. ENERGY STAR Score of 73 = 56 points |

☐

## COMPLIANCE PATHWAY 2

| 01.02.05 | Do you benchmark energy performance using either the BOMA BEST or ENERGY STAR Portfolio Manager portal? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** Benchmarking informs organizations about how much energy they use and where they use it. It allows organizations to identify opportunities to optimize energy use and reduce operating costs.<br>**Requirements:** You must enter at least **24-consecutive months** of energy consumption data using either the BOMA BEST portal (instructions) or ENERGY STAR Portfolio Manager (instructions).<br>• Data must be entered in individual months. Data **cannot** be a bulk amount representing the complete 24-month timeframe<br>• Data must not be any older than the last 36 months<br>• Data does not need to represent the entire building's consumption. Indicate the areas to which this data can be attributed in Question 01.02.06<br>• Data should not represent consumption during periods of major renovations<br>Tips on benchmarking are available in this FAQ. | |
| **Scoring** | BOMA BEST | 10/10 |
| | ENERGYSTAR | 10/10 |
| | No | 0/10 |

| 01.02.06 | Indicate the areas for which you have energy consumption data available. |
|---|---|
| **Explanation & Evaluation** | **Description:** To properly benchmark energy consumption, it is first necessary to understand which areas are represented in the data.<br>**Requirements:** Indicate for which areas data will be provided. Provide the floor area for the spaces selected.<br>For each area, indicate which type of fuel energy consumption data will be provided. |
| **Scoring** | For informational purposes |

| | Area | Electricity | Natural Gas | Other Fuel |
|---|---|---|---|---|
| Total Building | | | | |
| All tenants | | | | |
| Some tenants | | | | |
| Interior common area | | | | |
| Exterior common area (e.g., lighting) | | | | |

| 01.02.07 | For what percentage of occupied gross leasable area is energy consumption data available? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** Obtaining whole building consumption information (including tenant-managed energy data) provides building managers a better understanding of the building's performance and the opportunities that exist for improvement.<br>**Requirements:** Indicate for what percentage of occupied gross leasable area you have energy consumption data (either through sub-metering or by other means). The data must represent consumption from the most recent 24-month period and must not be any older than the past 36 months. | |
| **Scoring** | Less than 25% | 0/15 |
| | 25-39% | 3/15 |
| | 40-64% | 6/15 |
| | 65-79% | 9/15 |
| | 80-94% | 12/15 |
| | 95-100% | 15/15 |

| 01.02.08 | Can you provide a weather-normalized site Energy Use Intensity (EUI) for this building? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** Using the BOMA BEST or the ENERGY STAR Portfolio Manager portals, generate a weather-normalized site EUI for the building.<br>**Requirements:** You must be able to generate a weather-normalized site energy use intensity on your building's Property characteristics page to obtain these points.<br>Same requirements as question 01.02.05.<br>Provide the EUI in your preferred unit. Include up to two decimals. Leave blank if no EUI could be calculated. | |
| **Scoring** | Yes (Provide) | 4/4 |
| | No | 0/4 |

| 01.02.09 | What is the calculated weather-normalized site Energy Use Intensity (EUI) for this building? |
|---|---|
| | |
| **Scoring** | Must provide to obtain points in question above |

| 01.02.10 | Have you compared the building's current energy consumption with consumption from past years? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** Analyzing energy consumption data and detecting anomalies can assist facilities staff and building owners with better building management by harnessing the power of data extrapolated over time.<br>**Requirements:** All building fuels under the responsibility of the building owner/manager must be included in the analysis (electricity, natural gas, etc.). At a minimum, compare consumption from the same seasons over two (2) years to detect anomalies. Conclusions drawn from the analysis must be presented.<br>**Additional Information:** Ensure you are comparing the same areas (if you originally looked only at common area consumption, continue looking at this area) as well as applying the same rules regarding whether to use normalized data (such as weather). If renovations have occurred during this time, special consideration should be applied in the analysis.<br>Select Not Applicable if all energy meters are managed solely by tenants. | |
| **Scoring** | Yes | 6/6 |
| | No | 0/6 |
| | N/A | 0/0 |

## BOTH COMPLIANCE PATHWAYS

| 01.02.11 | Has a thermal imaging scan of the roof or walls been performed within the last five (5) years? | | |
|---|---|---|---|
| **Explanation & Evaluation** | **Description:** A thermal imaging scan of the building will help identify the areas where energy is flowing to and from the building, areas that may allow for higher than normal thermal transfer.<br>**Requirements**: A scan of the building envelope (walls, curtain walls) and roof is recommended. The thermal scan must be performed by a certified thermographer. The scan must have been performed in the last five (5) years.<br>**Additional Information:** The most common tool to do this work is a thermal camera, which shows the heat patterns of an item on a built-in screen on the device. Depending on the size and shape of the building a scan can range from an hour to multiple days. | | |
| **Scoring** | | Yes | No |
| | Only Roof | 4/8 | 0/8 |
| | Only Walls | 4/8 | 0/8 |

| 01.02.12 | Has an ASHRAE Level 2 Energy Assessment been performed on the building in the last five (5) years? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** An ASHRAE Level 2 Energy Assessment requires a great level of effort in estimating economic costs and energy savings. While a Level 1 assessment is based on general rules and typical savings, a Level 2 assessment is based on firm calculations. An ASHRAE Level 2 energy assessment will provide more detailed information for creating a business case. Many jurisdictions will provide funding to offset the cost of this type of assessment.<br>**Requirements:** The ASHRAE Level 2 Energy Assessment report must contain the following:<br>• Analysis of energy consumption through utility bill analysis and benchmarking. For benchmarking purposes utility bills must cover a minimum of 12 months of continuous data. If major renovations or retrofits to the building systems have occurred, use data after the time of major renovation, if possible. Major renovations include upgrades to mechanical systems, upgrades to building envelope systems and electric system upgrades including procurement of new lighting for more than 50% of the building's lighting fixtures.<br>• Assessment and breakdown of current performance of energy-consuming equipment.<br>• Prioritized list of proposed energy conserving measures (ECMs) to enable greater energy efficiency.<br>• Provision of estimates of financial savings the building owner will realize as a result of investing in ECMs, including the simple payback period. Savings and cost estimates must be based on actual manufacturer specifications.<br>The audit must be completed and the report signed and dated by a qualified third-party or an internal person to the building with auditing experience and a P.Eng or CEM designation.<br>**Additional Information:** Please see ASHRAE "Procedure for Commercial Building Energy Audits" (2nd or most recent addition) for guidance on assessment requirements.<br>If local incentive/grant programs require a minor deviation from the guidelines the report may be considered equivalent.<br>Select Not Applicable if the building has been occupied for fewer than two (2) years. | |
| **Scoring** | Yes | 20/20 |
| | No | 0/20 |
| | N/A | 0/0 |

## 1.3 OPERATIONS AND MAINTENANCE

| 01.03.01 | Are Operation Manuals and Standard Operating Procedures for the major mechanical equipment easily accessible? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** Operation Manuals and Standard Operating Procedures for major equipment are needed to ensure proper system maintenance and operation.<br>**Requirements:** Operation Manuals and Standard Operating Procedures (SOP) for all major mechanical equipment must always be available to building operators in hard copy format AND be easily accessible on-site.<br>1. The Operation Manuals enable a better understanding of the mechanical equipment or system and how they should be used. The Operation Manuals must contain the following information for each system or piece of (major) mechanical equipment:<br>• Identify the system/equipment (e.g., its purpose, how it integrates with other systems).<br>• Describe the operations of the system/equipment (e.g., what steps are required to operate it and in what sequence).<br>• Easy-to-understand troubleshooting instructions on the system/equipment in case of emergency.<br>2. The Standard Operating Procedures (SOP) outline how the mechanical equipment or system should operate according to its design as per manufacturer requirements. The SOPs must contain the following information for each system or piece of (major) mechanical equipment:<br>• Identify the roles and responsibilities for each individual (e.g., building operator, building manager) working with the system/equipment.<br>• Step-by-step instructions describing how to carry out essential tasks on the mechanical system/equipment.<br>Where ongoing maintenance and repair of major mechanical equipment is contracted to a third-party, Operation Manuals and SOPs containing the required elements must be provided to the building manager and operator, and these must be easily accessible in hard copy format to the on-site operations team for day-to-day activities or in off-hours instances where a third party may not be readily available.<br>**Additional Information:** These documents list and describe the operation of the systems and equipment in a building. The Operation Manuals contain such information as modes of operation, diagrams, system interaction, etc. The SOPs provide details on proper recommissioning practices, ongoing building optimization and maintenance as well as troubleshooting and calibration. Copies of Operation Manuals and SOPs should be kept in a secure, dry, location to ensure there is always a clean copy available. A digital copy may also exist (optional).<br>Major mechanical items include air handlers, central plant equipment, motor controllers, and custom equipment.<br>Select Not Applicable if there is no major mechanical equipment or if said equipment is owned, managed and maintained solely by tenants. | |
| **Scoring** | Yes | 14/14 |
| | No | 0/14 |
| | N/A | 0/0 |

| 01.03.02 | Does building management track and monitor building performance and consumption patterns? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** Monitoring and tracking building energy usage can highlight irregularities which, when corrected, can improve building performance.<br>**Requirements:** At a minimum, track and monitor the building's performance and consumption patterns for all sub-metered items on a quarterly basis. Monitoring and analysis must be done by either a dedicated staff member (for example using an in-house spreadsheet) or by dedicated software.<br>**Additional Information:** Monitoring includes a review of the energy use over specific time periods, costs, and consumption patterns with events highlighted. An "event" refers to a noticeable spike or dip in the trend data. Other equipment and systems to monitor include (as applicable): BAS, lighting, HVAC, envelope efficiency, etc.<br>Monitoring report logs will assist with analysis of the building's operations.<br>Select Not Applicable if there is no major mechanical equipment or if said equipment is owned, maintained and managed solely by tenants. | |
| **Scoring** | Yes | 8/8 |
| | No | 0/8 |
| | N/A | 0/0 |

| 01.03.03 | Are maintenance work orders created digitally? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** Automated work orders facilitate direct communication between the order placer and the order taker, minimizing the possibility of the issue escalating into something worse. Such work orders are easily tracked.<br>**Requirements:** Demonstrate that equipment maintenance work orders are created digitally and that follow up and resolution is provided in a timely manner, based on the company-specified timeframe. | |
| **Scoring** | Yes | 5/5 |
| | No | 0/5 |

| 01.03.04 | Has a low-cost energy conservation measure been implemented in the last three (3) years? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** The Energy Management Plan is a plan with timelines, budgets and a responsibility matrix for implementing energy conservation measures (ECMs). Implementing ECMs will improve the energy performance of the facility.<br>**Requirements:** At least one (1) low-cost ECM from the Energy Management Plan (or equivalent) must have been implemented in the last three (3) years. In addition to this, provide documentation on all no cost energy conservation measures implemented in the last three (3) years. To be considered implemented, construction of measures/initiatives must be completed, and the measure must be commissioned and operational.<br>**Additional Information:** Measures cannot be considered if they are included in the Capital Plan but not yet implemented or if the implementation has not been completed at the time of the verification. | |
| **Scoring** | Yes | 25/25 |
| | No | 0/25 |

<table>
<tr><th>01.03.05</th><th colspan="4">Are control strategies used on the mechanical equipment to reduce energy consumption and demand?</th></tr>
<tr><td>Explanation & Evaluation</td><td colspan="4"><u>Description:</u> Building energy use can be reduced by putting in place control strategies such as reducing the operating time of a piece of equipment or using equipment during off-peak hours.<br><u>Requirements:</u> Implement control strategies on the mechanical equipment. Strategies can be applied using the BAS to control mechanical units or by using stand-alone controls.<br><u>Additional Information:</u> Select all that apply.<br>Unoccupied setback means reducing the set point during the heating season and increasing the set point during the cooling season when the space is unoccupied.<br>Outdoor air temperature reset means adjusting the heating water and/or chiller water supply temperature based on the outdoor air temperature.<br>Demand control ventilation means adjusting the outdoor air rate based on the internal air quality.<br>Scheduling entails setting a time to activate the HVAC equipment to maintain space temperature; commonly based on the average occupancy hours.<br>Economizer control means using outdoor air when the outdoor air temperature allows for cooling of the building instead of using mechanical cooling.<br>Select Not Applicable if the strategy cannot be implemented. Rationale for why this is the case must be provided to the verifier (for example, if maintenance or construction required certain strategies to be overridden for a prolonged period of time).</td></tr>
<tr><td rowspan="6">Scoring</td><td></td><td>Yes</td><td>No</td><td>N/A</td></tr>
<tr><td>Unoccupied setback</td><td>2/10</td><td>0/10</td><td>0/0</td></tr>
<tr><td>Outdoor air temperature reset</td><td>2/10</td><td>0/10</td><td>0/0</td></tr>
<tr><td>Demand control ventilation</td><td>2/10</td><td>0/10</td><td>0/0</td></tr>
<tr><td>Scheduling (Specify how)</td><td>2/10</td><td>0/10</td><td>0/0</td></tr>
<tr><td>Economizer Control (specify type)</td><td>2/10</td><td>0/10</td><td>0/0</td></tr>
<tr><th>01.03.06</th><th colspan="4">Are the equipment and energy systems regularly re- or retro-commissioned?</th></tr>
<tr><td>Explanation & Evaluation</td><td colspan="4"><u>Description:</u> Commissioning is a well-planned and documented engineering approach that ensures that new equipment and systems are installed properly and functioning as designed. Re- or retro-commissioning is like commissioning in its objectives however applies specifically to equipment that was never commissioned upon installation.<br><u>Requirements:</u> Demonstrate that periodic re- or retro- commissioning is in place for building equipment and systems. Provide a clear schedule of equipment that has been re- or retro-commissioned in the past 12 months along with a log of what work was performed, when and by whom. Equipment for which the property owner is not responsible (owned, maintained or managed) can be excluded.<br>Work must be performed by accredited professionals or trained staff.<br>In the case where the major mechanical equipment is owned, maintained and managed solely by tenants, the property manager must provide communication documents to the tenants regarding the importance of proper re- or retro-commissioning.<br>Consult Natural Resource Canada’s “Building Operation Optimization: Recommissioning Guide for Building Owners and Managers” for more information on these practices.</td></tr>
</table>

| | | |
|---|---|---|
| | **Additional Information:** Periodic (also ongoing or continuous) re- or retro-commissioning is a systematic approach for the re-optimization of previously commissioned equipment and systems. Equipment and systems are reviewed on a regular basis to identify and adjust less-than-optimal performance in the facility's equipment, lighting and control systems. Failure to re- or retro-commission equipment can lead to reduced efficiency, improper fluid flows and temperatures, and premature decommissioning/replacement.<br>Periodic re- or retro-commissioning examines equipment performance through a different lens than preventative maintenance. Periodic re- or retro-commissioning is performed to ensure the system continues to operate as designed whereas preventative maintenance refers specifically to maintenance of individual components (e.g., air filters and fan belts) of these systems.<br>Select Not Applicable if there is no major mechanical equipment. | |
| **Scoring** | Yes | 10/10 |
| | No | 0/10 |
| | N/A | 0/0 |

| **01.03.07** | **Are newly installed energy systems and equipment appropriately commissioned?** | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** Commissioning is a well-planned and documented engineering approach that ensures that new equipment and systems are installed properly and functioning as designed.<br>**Requirements:** Provide records demonstrating that new major equipment and systems purchased by the owner are commissioned either by the equipment/system provider or by an accredited independent third party following installation. If no major equipment or systems have been installed in the past 12 months, demonstrate that there is a policy committing to commissioning new major equipment installed in the building.<br>In the case where the major mechanical equipment is owned, maintained and managed solely by tenants, the property manager must provide communication documents to the tenants regarding the importance of proper commissioning.<br>**Additional Information:** Major equipment includes (but is not limited to) central plant equipment, air handling units, packaged rooftop units, and custom equipment.<br>Commissioning of equipment is vital to the entire system's operation and ensures that everything functions as designed. Failure to commission new equipment could result in less than optimal performance.<br>Commissioning should be performed to the level of owner's responsibility for example if a building owner is responsible for equipment purchase but the tenant is responsible for operations the owner is still required to commission equipment.<br>Select Not Applicable if there is no major mechanical equipment. | |
| **Scoring** | Yes | 9/9 |
| | No | 0/9 |
| | N/A | 0/0 |

| **01.03.08** | **Have corrective actions been taken to address deficiencies identified in the thermal imaging scan?** |
|---|---|

| | | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** Addressing envelope deficiencies will improve the building performance and assist with asset preservation.<br>**Requirements:** Demonstrate that at least one (1) deficiency raised in the thermal imaging scan has been addressed.<br>**Additional Information:** The thermal imaging report will highlight challenges with the building envelop like air leakage, water penetration and thermal bridging. The items identified during the imaging typically range from low cost to capital cost to address.<br>Select Not Applicable if a thermal imaging scan was not performed. | |
| **Scoring** | Yes | 5/5 |
| | No | 0/5 |
| | N/A | 0/0 |

| **01.03.09** | **Is a boiler maintenance program in place at the building?** | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** A boiler maintenance program helps ensure proper boiler operation and optimal performance.<br>**Requirements:** The boiler maintenance program must meet the minimum requirements of ASHRAE Standard 180 "Standard Practice for Inspection and Maintenance of Commercial Building HVAC Systems".<br>The following components must be integrated into the program:<br>• Demonstration of knowledge of local codes, standards and regulations which apply to the operation of the boiler;<br>• Regular inspection, cleaning and maintenance in accordance with manufacturer's specifications;<br>• Calibration of sensors to optimize burning efficiency;<br>• Annual flue gas testing to identify contaminant levels;<br>• Record keeping; and,<br>• Demonstration of required licensing/certification for individuals working on boiler equipment.<br>The program can be common to a portfolio or campus of buildings however implementation must be building-specific.<br>**Additional Information:** Select Not Applicable if there are no boilers or they are owned, managed and maintained solely by tenants.<br>Demonstration of implementation includes showing the maintenance scope of work in a service contract. | |
| **Scoring** | Yes | 7/7 |
| | No | 0/7 |
| | N/A | 0/0 |

| 01.03.10 | Are strategies in place to control escalator based on use patterns? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** Putting in place measures to reduce the operation of people moving equipment reduces energy consumption.<br>**Requirements:** Demonstrate that strategies have been put in place to operate escalators in a way that reflects their use patterns.<br>**Additional Information:** Strategies include shutting escalators down completely overnight or using motion sensors throughout the day to determine when they should be activated. All escalators in the building must be controlled by these strategies to comply.<br>Select Not Applicable if there are no escalators in the building. | |
| **Scoring** | Yes | 5/5 |
| | No | 0/5 |
| | N/A | 0/0 |

## 1.4 BUILDING SYSTEMS

| 01.04.01 | What type of Building Automation System is in place at the building? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** A building automation system (BAS) automates major building components (e.g., HVAC, lighting, etc.) to assist in operating equipment more effectively based on certain set points. BAS systems allow users to log and trend data for use in maintenance and various analyses.<br>**Requirements:** Demonstrate what type of Building Automation System is in place at the building.<br>**Additional Information:**<br>**Direct Digital Control (DDC)**: Uses electrical signals or wireless technologies to operate and communicate with parts of a system. Operators use an interface device, typically computer, to monitor and communicate with devices.<br>**Pneumatic**: Uses a compressor to keep systems at a constant pressure. Pressure increases or decreases as a valve or actuator moves. Desired operation on a device is based on the pressure set point of the valve or actuator connected to it.<br>**Hybrid**: A combination of both DDC and Pneumatic.<br>If the building operates on small-scale HVAC equipment (e.g., furnaces, rooftop units under 20 tons, etc.), then they typically utilize Smart Controllers. Smart Controllers integrate wireless thermostats and lighting controls and can be controlled via a user interface (such as a tablet or smartphone). By utilizing the Smart Controllers, each rooftop unit and/or lighting fixture can be controlled and monitored much like they are on a larger scale BAS system. Smart Controllers fall under Direct Digital Controls.<br>Select Not Applicable if the building area is less than 25,000 square feet. | |
| **Scoring** | Direct Digital Control (DDC) | 8/8 |
| | Hybrid | 5/8 |
| | Pneumatic | 2/8 |
| | None | 0/8 |
| | N/A | 0/0 |

| 01.04.02 | What percentage of the building's energy consumption is sub-metered? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** Sub-meters measure the energy consumption of specific areas or equipment. Metering major mechanical equipment will reveal how often it runs and how much energy it consumes during operation, as well as identify when equipment drifts away from set point (should it occur).<br>**Requirements:** Provide outputs from sub-meters along with information on each sub-meter such as make, model, and serial number. | |
| **Scoring** | 50% or more | 8/8 |
| | 25-50% | 6/8 |
| | 10-24% | 4/8 |
| | Less than 10% | 0/8 |

| 01.04.03 | Do you maintain a list of every energy meter installed within the building that you own and manage? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** Maintaining a list of the meters operating within the building can assist building managers in their energy tracking and monitoring efforts as well as help answer any questions related to consumption anomalies. A list allows for a methodic approach to energy analysis.<br>**Requirements:** The list must indicate meter location and tag number (if available).<br>**Additional Information**: Select Not Applicable if all meters are owned and managed solely by the tenants. | |
| **Scoring** | Yes | 3/3 |
| | No | 0/3 |
| | N/A | 0/0 |

| 01.04.04 | Do you maintain a list of every energy meter installed within the building managed by tenants? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** Having a list of all tenant operated and managed meters within the building can assist building managers in their energy tracking and monitoring efforts as well as allowing them to share this information with all building tenants<br>**Requirements:** The list must indicate meter location and tag number (if available).<br>**Additional Information:** Select Not Applicable if there are no meters managed by tenants. | |
| **Scoring** | Yes | 6/6 |
| | No | 0/6 |
| | N/A | 0/0 |

| 01.04.05 | What building areas incorporate at least 50% of ENERGY STAR or DesignLight Consortium (DLC) approved lighting lamps and ballasts? |
|---|---|
| **Explanation & Evaluation** | **Description:** ENERGY STAR and DesignLight Consortium (DLC) approved lighting have been tested and shown to consume less energy than those that are not approved.<br>**Requirements:** Refer to the item's manufacturer data sheet or the ENERGY STAR or DLC website to look up the product's model number to verify it is ENERGY STAR or DLC approved.<br>Eligible products must be ENERGY STAR or DLC approved at the time of installation.<br>Fixtures which are not ENERGY STAR or DLC certified can be considered as equivalent if a Measurement and Verification Report is prepared which shows that the energy consumption of the fixture is within 10% of the product specification and there is an equivalent (i.e., similar type and design) ENERGY STAR or DLC certified fixture. The Measurement and Verification report cannot be prepared by someone who is connected to the fixture manufacturer.<br>**Additional Information:** Select all that apply. Common areas include all corridors, service spaces, elevator lobbies and entry lobbies)<br>Select Not Applicable if a particular area is not present in the building or if there are no fixtures purchased or maintained by the building owner in a particular area.<br>References:<br>ENERGY STAR commercial lighting fixtures (https://www.energystar.gov/products/lighting_fans/commercial_light_fixtures/eligible_commercial_fixture_types)<br>EnergyStar certified products (https://www.energystar.gov/products/certified-products)<br>EnergyStar residential lighting fixtures (https://www.energystar.gov/products/lighting_fans/light_fixtures/eligible_residential_fixture_types<br>DLC (https://www.designlights.org/qpl) |

| Scoring | | Yes | No | N/A |
|---|---|---|---|---|
| | Office | 2/8 | 0/8 | 0/0 |
| | Warehouse | 2/8 | 0/8 | 0/0 |
| | Building Exterior | 2/8 | 0/8 | 0/0 |
| | Common Areas (includes all corridors, service spaces, elevator lobbies and entry lobbies) | 2/8 | 0/8 | 0/0 |

| 01.04.06 | What percentage of the building exterior and parking lot fixtures have LED lamps or automated controls? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** Building exterior and parking lot fixtures should be outfitted with LED lamps with photo cells and/or timers and/or automated controls since these fixtures typically operate nightly. Using LED lamps will decrease the cost of power consumed when they are in operation.<br>**Requirements:** Demonstrate what percentage of exterior and parking lot fixtures have LED lamps or automated controls.<br>**Additional Information:** Select Not Applicable if there are no exterior or parking lot fixtures. | |
| **Scoring** | 80-100 | 14/14 |
| | 60-79% | 11/14 |
| | 40-59% | 8/14 |
| | 20-39% | 5/14 |
| | 1-19% | 2/14 |
| | None | 0/14 |
| | N/A | 0/0 |

| 01.04.07 | What percentage of lighting fixtures are controlled by sensors? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** Lighting fixtures can be controlled by sensors (e.g., occupancy sensors, vacancy sensors, and daylight/photocell sensors) to reduce energy consumption. Where appropriate, these sensors can be incorporated with a Building Automation System or be stand-alone.<br>**Requirements:** Lighting control sensors must be installed within areas where the building owner is responsible for lighting system maintenance.<br>**Additional Information:** Select Not Applicable if all lighting fixtures are owned, maintained and managed solely by tenants. If the property manager did not implement, but knows the percentage of sensors, select the appropriate answer range. | |
| **Scoring** | 75 – 100% | 11/11 |
| | 50 – 74% | 9/11 |
| | 25 - 49% | 6/11 |
| | 10 - 25% | 3/11 |
| | Less than 10% | 0/11 |
| | N/A | 0/0 |

| 01.04.08 | What percentage of the total installed pump and fan motors are actively controlled by variable speed drives (VSD) or variable frequency drives (VFD)? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** VSDs and VFDs control motor speed by varying the motor speed/frequency of electrical supply to match actual load requirements, reducing energy consumption and improving control and lifespan of the equipment. By utilizing these drives, energy can be saved by using equipment only at the minimum output to maintain set points.<br>**Requirements:** These units cannot be manually locked to 100% or run at 100% consistently.<br>**Additional Information:** Select Not Applicable if there are no pump and fan motors (5 HP or greater); if said equipment is owned, managed and maintained solely by tenants; or if variable flow is not feasible for the design, as stated by a Professional Engineer or CEM accredited person. | |
| **Scoring** | 75 – 100% | 14/14 |
| | 50 – 74% | 10/14 |
| | 25 - 49% | 6/14 |
| | Less than 25% | 4/14 |
| | None | 0/14 |
| | N/A | 0/0 |

| 01.04.09 | What percentage of the building's lighting is connected to an addressable lighting control system? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** Eligible addressable light control systems allow the building operator to control lamps at a zone level via a Building Automation System. It is possible to allow tenants this level of control also via a desktop application.<br>**Requirements:** Addressable lighting systems must be installed in areas where the building owner is responsible for lighting system maintenance. | |
| **Scoring** | 75 – 100% | 9/9 |
| | 50 – 74% | 6/9 |
| | 25 - 49% | 3/9 |
| | Less than 25% | 0/9 |

## 1.5 INNOVATION

| 01.05.01 | Is 75% or more of the total installed pump and fan motor horsepower considered premium efficiency? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** NEMA (National Electrical Manufacturers Association) premium efficiency motors consume less energy than even their code mandated high-efficiency counterparts.<br>**Requirements:** Provide nameplate information on motors. 75% of the total capacity must be considered efficient.<br>**Additional Information:** For all innovation questions, if you are unable to answer "Yes", select "Not Applicable" instead. No points will be lost.<br>Reference: NEMA premium motors (http://www.nema.org/Policy/Energy/Efficiency/Pages/NEMA-Premium-Motors.aspx) | |
| **Scoring** | Yes | 24/24 |
| | N/A | 0/0 |

| 01.05.02 | Is 75% or more of the central heating equipment efficient? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** Heating equipment, such as boilers or burners, that have a high efficiency ratio utilize their fuel more effectively and heat the fluid (air, water) to the same set point with less fuel consumed relative to a lower efficiency unit.<br>**Requirements:** Efficient central heating equipment must have a combustion efficiency that is 85% or greater. 75% of the total capacity must be considered efficient.<br>For each piece of central heating equipment (boiler, burners, furnaces, etc.) provide a copy of preventative maintenance procedures and combustion efficiency test results performed within the last year. Combustion efficiency tests must include analysis of temperature and CO2 or O2 levels of the flue gases as well efficiency measurements for at least two firing rates (e.g., low fire and high fire).<br>**Additional Information:** Electric boilers that meet outlined efficiency requirements are also eligible for points under this question.<br>For all innovation questions, if you are unable to answer "Yes", select "Not Applicable" instead. No points will be lost. | |
| **Scoring** | Yes | 24/24 |
| | N/A | 0/0 |

| 01.05.03 | Are 75% of the rooftop package units efficient? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** Rooftop air handling units that have a higher energy efficiency ratio utilize their fuel more effectively when cooling to the same set point with less fuel consumed relative to a lower Energy Efficiency Ratio (EER) unit.<br>**Requirements:** Efficient rooftop package units have an EER rating of 11.5 or greater. 75% of the total capacity must be considered efficient.<br>**Additional Information:**<br>To convert the Seasonal Energy Efficiency Ratio (SEER) to EER, use the following formula:<br>EER = (1.12 * SEER) – (0.02 * $SEER^2$)<br>For all innovation questions, if you are unable to answer "Yes", select "Not Applicable" instead. No points will be lost. | |
| **Scoring** | Yes | 24/24 |
| | N/A | 0/0 |

| 01.05.04 | Are 75% of the chillers and air conditioning systems efficient? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** Chillers and air conditioning systems that have a higher Coefficient of Performance (COP) utilize their energy more effectively and cool fluid to the same set point with less fuel consumed relative to a lower COP unit.<br>**Requirements:** Efficient chillers and air conditioning systems have a COP of 2.8 or greater for air-cooled systems or 5.1or greater for water-cooled systems. 75% of the total capacity must be considered efficient.<br>**Additional Information:** To calculate the installed capacity that meets the criteria for high efficiency, use the following formula:<br>Installed capacity = (sum of capacity x COP) / sum of all capacities<br>For all innovation questions, if you are unable to answer "Yes", select "Not Applicable" instead. No points will be lost. | |
| **Scoring** | Yes | 24/24 |
| | N/A | 0/0 |

| 01.05.05 | Is 75% of the domestic water heating equipment efficient? | |
|---|---|---|
| **Explanation & Evaluation** | **Requirements:** Efficient domestic water equipment must be compliant with ENERGY STAR or equivalent. Electric water heaters must be certified by the Air Conditioning, Heating, and Refrigeration Institute (AHRI). 75% of the total capacity must be considered efficient.<br>**Additional Information:** Examples of ENERGY STAR-compliant water heating equipment include (but are not limited to) condensing, tankless and solar water heaters. ENERGY STAR rated equipment use energy effectively while minimizing fuel consumption.<br>If no AHRI certification is available for electric water heaters, it must have standby losses in percentage per hour (%/hr) less than or equal to [0.3 + 27/V] where V is water heater volume in gallons. For example, to be eligible, an electric water heater with a nominal volume of 50 gallons and a measured volume of 47.5 gallons must have standby losses that are no greater than 0.87%/hr (since 0.3 + 27/47.5 = 0.87).<br>For all innovation questions, if you are unable to answer "Yes", select "Not Applicable" instead. No points will be lost.<br>Reference:<br>ENERGY STAR-compliant equipment<br>AHRI certification directory | |
| **Scoring** | Yes | 24/24 |
| | N/A | 0/0 |

| 01.05.06 | Does 75% of the building's exhaust air pass through a Ventilation Heat/Energy Recovery system? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** Ventilation Heat/Energy Recovery systems recover energy from exhaust airstreams and transfer said energy into the incoming ventilation airstream. Less energy is required to condition ventilation air.<br>**Requirements**: Demonstrate that at least 75% of the building's exhaust air passes through Ventilation Heat/Energy Recovery systems.<br>**Additional Information:** For all innovation questions, if you are unable to answer "Yes", select "Not Applicable" instead. No points will be lost. | |
| **Scoring** | Yes | 24/24 |
| | N/A | 0/0 |

| 01.05.07 | Are 75% of the building's exterior windows and/or skylights considered efficient? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** Energy efficient windows and skylights can reduce energy consumption by reducing thermal losses to the exterior.<br>**Requirements:** Provide evidence that the windows are energy efficient. Windows are considered energy efficient when the following four (4) conditions have been met:<br>• They are double- or triple-paned Insulating Glass Units (IGU).<br>• They have a thermally broken frame, as demonstrated through shop drawings or a letter from the manufacturer indicating that some thermal breaking material is present as part of the framing assembly, with a minimum thickness of 3 mm.<br>• They have a thermally reflective coating such as glazing tint, hard coat/soft coat low-e coating, or retrofit applied glazing film (to the interior or exterior).<br>• Air sealing is intact with no evidence of condensation or fogging between the panes.<br>**Additional Information:** For all innovation questions, if you are unable to answer "Yes", select "Not Applicable" instead. No points will be lost. | |
| **Scoring** | Yes | 24/24 |
| | N/A | 0/0 |

| 01.05.08 | Has the ENERGY STAR Score been validated by a qualified person? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** The information entered into ENERGY STAR Portfolio Manager program will greatly influence the ENERGY STAR Score.<br>**Requirements:** A qualified person must review and sign the "ENERGY STAR Data Verification Checklist" (sample available here) to confirm that all data has been entered appropriately and that the ENERGY STAR Score accurately represents the building's energy performance.<br>**Additional Information:** The qualified person may be a third-party or internal to the company in question.<br>Accepted designations for qualified persons are limited to the following: Professional Engineer, Certified Energy Manager (CEM), Certified Measurement & Verification Professional (CMVP), Certified Energy Auditor (CEA), Certified Building Commissioning Professional (CBCP), BEAP (Building Energy Assessment Professional) and Engineering Technologist.<br>Reference: ENERGY STAR Data Verification Checklist<br>For all innovation questions, if you are unable to answer "Yes", select "Not Applicable" instead. No points will be lost. | |
| **Scoring** | Yes | 9/9 |
| | N/A | 0/0 |

| 01.05.09 | Are strategies or systems in place to allow peak shedding? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** *Peak shedding (*or *load leveling)* is a strategy through which peak energy demand can be reduced.<br>**Requirements:** Peak shedding and load leveling strategies must be implemented on all central HVAC equipment used during the majority of the building occupancy period.<br>**Additional Information:** Examples of ways this can be done include staging – where equipment activation is staggered so that instantaneous demand does not skyrocket, or by using thermal storage so peak energy load can be reduced at certain points of the day when demand is high.<br>For all innovation questions, if you are unable to answer "Yes", select "Not Applicable" instead. No points will be lost. | |
| **Scoring** | Yes: | 18/18 |
| | N/A | 0/0 |

| 01.05.10 | Are the building's real-time consumption patterns shared with building occupants? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** By visually showing how the building is operating in real-time, occupants can better understand how the building performs and how their habits and personal/work equipment effects consumption.<br>**Requirements:** The building's energy consumption trends must be proactively shared (along with context to ensure is the data is well understood) with building occupants in a manner which encourages education and enhances awareness. Data must be shared with tenants, occupants and visitors (if applicable).<br>Quarterly summaries are not sufficient. The data must be real-time or near real-time (with a lag of one day or so).<br>For all innovation questions, if you are unable to answer "Yes", select "Not Applicable" instead. No points will be lost. | |
| **Scoring** | Yes | 12/12 |
| | N/A | 0/0 |

| 01.05.11 | Are renewable energy certificates, low-impact electricity or carbon offsets purchased for the building? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** Low-impact electricity, renewable energy certificates (RECs) or high-quality carbon offsets can be purchased to displace or offset the carbon footprint associated with energy use in the building.<br>**Requirements:** To be considered eligible, the building must use one of the following methods to reduce the carbon intensity associated with the building's energy consumption. For a given method, all components listed must be in place:<br>a) Eligible low-impact electricity or RECs:<br>▪ Must be purchased from a credible vendor (e.g., generator, aggregator, distributor, etc.) certified under the EcoLogo or Green-e Energy National Standard.<br>▪ Must have been purchased in the last 12 months.<br>▪ Must be specifically attributed to the building.<br>b) Eligible carbon offsets:<br>▪ Must have been purchased in the last 12 months.<br>▪ Must be specifically attributed to the building.<br>▪ Must be purchased from a high-quality carbon offset project developed to meet an approved voluntary or regulatory industry requirement:<br>i. List of approved voluntary (non-compliance) offset standards:<br>○ Verra (includes VCS – Verified Carbon Standard; CCB – Climate, Community & Biodiversity Standard; SD Vista – Sustainable Development Verified Impact Standard)<br>○ Gold Standard<br>○ Plan Vivo<br>○ CAR (Climate Action Reserve – Climate Reserve Tonnes)<br>○ UK Woodland Carbon Code<br>○ CDM (UN Clean Development Mechanism)<br>○ Green-e Certified Carbon Offsets<br>ii. List of approved compliance market (required under legislation) offset standards include but are not limited to:<br>○ EU-ETS (European Emission Trading Scheme)<br>○ B.C. (British Columbia) Carbon Registry<br>○ WCI (Western Climate Initiative)<br>**Additional Information:**<br>Carbon offsets purchased in voluntary markets must meet one of the standards listed here. However, carbon offsets purchased for compliance markets can be from other compliance market standards not listed here. Carbon offsets may be purchased at the portfolio level but must be retired against a specific building so that they cannot be claimed against another building.<br>For all innovation questions, if you are unable to answer "Yes", select "Not Applicable" instead. No points will be lost.<br>**References:**<br>EcoLogo<br>Green-e Energy National Standard<br>Verra (Global carbon registry)<br>IHS Markit (Global voluntary carbon registry) | |
| **Scoring** | Yes | 15/15 |
| | N/A | 0/0 |

| 01.05.12 | Are renewable natural resources used on-site to generate at least 1% of the building's energy? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** Renewable natural resources include solar, wind, and biomass. Using such renewable sources of energy for electricity or heating (for example) can provide building owners with a reliable, sustainable energy source that offsets grid consumption.<br>**Requirements:** Demonstrate that renewable energy has been generated on-site during the past 12 months. The energy generated must be sufficient to offset 1% of the total energy consumed on-site.<br>**Additional Information:** Installations that use these resources include photovoltaic panels, wind turbines, and biomass burning equipment (not including Energy from Waste equipment). Such on-site generation can provide advantages such as reduced utility costs, and reductions in GHG emissions generation through increased use of renewable energy sources and reduction in energy transmission and "line loss".<br>For all innovation questions, if you are unable to answer "Yes", select "Not Applicable" instead. No points will be lost. | |
| **Scoring** | Yes | 9/9 |
| | N/A | 0/0 |

| 01.05.13 | Is the building connected to any form of energy cogeneration system, or to a district or community energy system? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** District energy systems produce steam, hot water, or chilled water at a central plant, which is then piped to individual buildings to achieve space heating, domestic hot water heating, and/or air conditioning. This negates the need for individual building systems to provide these services, and enables improved energy efficiency, decreased life-cycle costs, greater flexibility, and decreased capital expenditures.<br>During cogeneration, waste heat that is typically lost during the production of electricity is captured and used as thermal energy to support district or local heating and cooling.<br>**Requirements:** Demonstrate that energy has been purchased from a district or community energy system or that there is an on-site co-generation system in operation.<br>Energy purchased or generated on-site must be sufficient to meet all major energy needs in the last 12 months.<br>**Additional Information:** For all innovation questions, if you are unable to answer "Yes", select "Not Applicable" instead. No points will be lost. | |
| **Scoring** | Yes | 9/9 |
| | N/A | 0/0 |

| 01.05.14 | Is an innovative process or technology (approved by BOMA Canada) in place at the building that goes beyond the requirements outlined in this section? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** Many processes and technologies exist that go beyond the standards and requirements set out in the BOMA BEST Assessment. If building managers/owners have invested in innovative processes or technologies that go beyond these standards, innovation points can be earned under this question.<br>**Requirements:** Contact bomabest@bomacanada.ca to obtain the official submission guidelines. The BOMA BEST Technical Committee will assess each proposal to determine whether or not it qualifies. If pursuing this path, expect a 10-12-week delay before receiving a final decision.<br>If you have not received a formal approval for your process or technology from BOMA Canada, click “Not Applicable”. | |
| **Scoring** | Submitted to BOMA Canada | 0/0 |
| | Approved by BOMA Canada | 21/21 |
| | N/A | 0/0 |

# 2. WATER

## 2.1 DEMONSTRATION OF INTENT

| 02.01.01 | Is a Water Damage Monitoring and Management Program in place in the building? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** Water-impacted building materials can begin to exhibit mould growth in as little as 48 hours. A water damage monitoring and management program will assist in rapidly addressing bulk water damage, including detailed procedures for drying, cleaning and remediating where necessary.<br>**Requirements:** The Water Damage Monitoring and Management Program must include the following:<br>• Inspection of building materials for signs of water damage or mould growth at least annually.<br>• Inspection of HVAC system components (such as chambers, pans, ductwork) for standing water, signs of water damage or mould growth at least annually.<br>• Inspection of readily accessible plumbing components for signs of leaks at least annually.<br>• All recommended corrective actions identified during the above inspections during the past 12 months completed.<br>• Response plans for the remediation of building materials exhibiting signs of water damage and mould growth (including consideration for the presence of hazardous materials based on the Hazardous Building Materials Management Plan).<br>• Response plans for bulk water damage from clean and contaminated sources.<br>• Training for building maintenance staff and custodial staff on water damage (including health hazards, how to identify suspect mould growth, response plans for identified mould growth or bulk water damage, safety precautions for remediating mould-impacted materials)<br>• Reviewing and updating of the management program at least annually.<br>Demonstrate implementation by providing<br>• Evidence of visual inspections in building interiors and HVAC systems for mould growth and water damage within the last 12 months (such as work orders, IAQ Audit findings, maintenance records).<br>• Evidence that any recommended corrective actions identified by the visual inspections have been acted upon (such as work orders, follow-up inspections).<br>• Documented response plans for remediation of water damaged and/or mould impacted materials. The response plan must identify key personnel and their responsibilities, contact information for qualified building maintenance staff or contractors for remediation, tenant response plans and communication protocols.<br>• Attendance records and syllabus for training sessions.<br>• Evidence of program review.<br>The program can be common to a portfolio or campus of buildings however implementation must be building-specific.<br>**Additional Information:** The Water Damage Monitoring and Management Program must incorporate all tenant spaces. | |
| **Scoring** | Yes | 5/5 |
| | No | 0/5 |

| 02.01.02 | Is a maintenance program in place for interior features requiring water? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** Although natural features such as plants and fountains are linked to improved mood, they are also frequently linked to air quality contaminants such as mould and bacteria. A maintenance program specific to these features will ensure air quality remains good.<br>**Requirements:** Develop and implement a maintenance program for interior natural features that require water such as interior landscaping, aquariums and fountains.<br>The program must include reference to regular cleaning and maintenance, periodic water testing (where necessary), training of appropriate staff and an annual review. Demonstration of implementation is required. The program can be common to a portfolio or campus of buildings however implementation must be building-specific.<br>**Additional Information:** Select Not Applicable if there are no natural features requiring water in the building or if these are owned, managed and maintained solely by tenants. | |
| **Scoring** | Yes | 3/3 |
| | No | 0/3 |
| | N/A | 0/0 |

## 2.2 ASSESSMENT

| 02.02.01 | Do you benchmark water performance using either the BOMA BEST or ENERGY STAR Portfolio Manager portal? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** Benchmarking informs organizations about how much water they use and where they use it. It allows organizations to identify opportunities to optimize water use and reduce operating costs.<br>**Requirements:** You must enter at least **12-consecutive months** of water consumption data using either the BOMA BEST portal (instructions) or ENERGY STAR Portfolio Manager (instructions).<br>• Data can be entered in a bulk amount representing the 12-month timeframe<br>• Data must not be any older than the last 18 months<br>• Data should represent indoor and outdoor consumption<br>• Data does not need to represent the entire building's consumption. Indicate the areas to which this data can be attributed in Question 02.02.02.<br>• Data should not represent consumption during periods of major renovations<br>Tips on benchmarking are available in this FAQ.<br>**Additional Information:** Select Not Applicable if all water meters are managed solely by tenants. | |
| **Scoring** | BOMA BEST | 5/5 |
| | ENERGY STAR | 5/5 |
| | No | 0/5 |
| | N/A | 0/0 |

| 02.02.02 | Indicate the areas for which you have water consumption data available. |
|---|---|
| **Explanation & Evaluation** | **Description:** To properly benchmark water consumption, it is first necessary to understand which areas are represented in the data.<br>**Requirements:** Indicate for which areas data will be provided. Provide the floor area for the spaces selected. |
| **Scoring** | For informational purposes |

| | Area |
|---|---|
| Total Building | |
| All tenants | |
| Some tenants | |
| Interior common area | |
| Exterior common area and landscaping (e.g., irrigation) | |

| 02.02.03 | For what percentage of occupied gross leasable area is water consumption data available? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** Obtaining whole building consumption information (including tenant-managed water data) provides building managers a better understanding of the building's performance and the opportunities that exist for improvement.<br>**Requirements:** Indicate for what percentage of occupied gross leasable area you have water consumption data (either through sub-metering or by other means). The data must represent consumption from the most recent 12-month period and must not be any older than the past 18 months. | |
| **Scoring** | Less than 25% | 0/15 |
| | 25-39% | 3/15 |
| | 40-64% | 6/15 |
| | 65-79% | 9/15 |
| | 80-94% | 12/15 |
| | 95-100% | 15/15 |

| 02.02.04 | Can you provide a Water Use Intensity (WUI) for the building? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** Using the BOMA BEST or the ENERGY STAR Portfolio Manager portals, generate a WUI for the building<br>**Requirements:** You must be able to generate a water use intensity on your building's Property characteristics page to obtain these points.<br>Same requirements as question 02.02.01.<br>Provide the WUI in your preferred unit. Include up to two decimals. Leave blank if no WUI could be calculated.<br>**Additional Information:** In the case where multiple buildings are being assessed using a single questionnaire (must meet the BOMA BEST definition for single building), a single WUI must be provided here. To obtain this WUI, representative of the total space and the total consumption, create an additional space in BOMA BEST or in ENERGY STAR Portfolio Manager, that combines the entire complex's area and its consumption. | |
| **Scoring** | Yes | 5/5 |
| | No | 0/5 |

| 02.02.05 | Have you compared the building's current water consumption with consumption from past years? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** Analyzing water consumption data and detecting anomalies can assist facilities staff and building owners with better building management by harnessing the power of data extrapolated over time.<br>**Requirements:** All water use under the responsibility of the building owner/manager must be included in the analysis. At a minimum, compare consumption from the same seasons over two (2) years to detect anomalies. Conclusions drawn from the analysis must be presented.<br>**Additional Information:** Ensure you are comparing the same areas (if you originally looked only at common area consumption, continue looking at this area) as well as applying the same rules regarding whether to use normalized data. If renovations have occurred during this time, special consideration should be applied in the analysis.<br>Select Not Applicable if all water meters are managed solely by tenants. | |
| **Scoring** | Yes | 6/6 |
| | No | 0/6 |
| | N/A | 0/0 |

## 2.3 OPERATIONS AND MAINTENANCE

There are no questions in this section.

## 2.4 BUILDING SYSTEMS

| 02.04.01 | Do you maintain a list of every water meter installed within the building that you own and manage? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** Having a list of the meters operating within the building can assist building managers in their water tracking and monitoring efforts as well as help answer any questions related to consumption anomalies. A list allows for a methodic approach to water analysis.<br>**Requirements:** The list must indicate meter location and tag number (if available).<br>**Additional Information**: Select Not Applicable if all meters are owned and managed solely by the tenants. | |
| **Scoring** | Yes | 3/3 |
| | No | 0/3 |
| | N/A | 0/0 |

| 02.04.02 | Do you maintain a list of every water meter installed within the building managed by tenants? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** Having a list of all tenant operated and managed meters within the building can assist building managers in their water tracking and monitoring efforts as well as allowing them to share this information with all building tenants.<br>**Requirements:** The list must indicate meter location and tag number (if available).<br>**Additional Information:** Select Not Applicable if there are no water meters managed by tenants. | |
| **Scoring** | Yes | 3/3 |
| | No | 0/3 |
| | N/A | 0/0 |

| 02.04.03 | Which type of water efficient controls are used for irrigation? |
|---|---|
| **Explanation & Evaluation** | **Description:** Water-efficient irrigation controls reduce water consumption.<br>**Requirements:** Indicate which type of irrigation control is in place at the building and used to irrigate 80% or more of the landscape.<br>**Additional Information**: Select all that apply. Select Not Applicable if there is no irrigation at the building.<br>• Drip irrigation: Water lines with low flow, dripping applicators spread throughout the irrigated area to more conservatively distribute water.<br>• Root-fed irrigation: Applicators are below ground and close to the roots zone of plants.<br>• Soil moisture sensors: Moisture sensors are placed in the soil of the irrigated area and communicate with an automatic scheduling system to adjust scheduling based on the real-time moisture levels of the irrigated area.<br>• Rain sensors: Precipitation sensors placed in the irrigated area communicate with an automatic scheduling system to adjust scheduling based on previous rainfall on the irrigated area.<br>• Weather-based controllers: Can be either a Smart or Central Controller. Must be WaterSense approved<br>  ○ A *smart controller* automatically adjusts the irrigation schedule/program after receiving the appropriate inputs. Most smart controllers use Historical Evapotranspiration (ET) data and have an onsite weather station/pod that is used to make a daily adjustment to the Historical ET value. Typically, this weather device measures solar radiation, temperature, humidity and rainfall.<br>  ○ A *central controller* is a subscription-based smart controller that receives a wireless weather signal from a local network of weather stations or sources that feed information to a central hub, this hub then feeds the changing weather patterns to the individual smart controller on an hourly or daily basis.<br>• Pressure regulated head: A pressure regulated sprinkler head can be used for all rotor, spray and rotary nozzles. It regulates the pressure of flowing water to a predetermined pressure. It reduces water waste by dispersing larger water droplets that are more resistant to wind and eliminates high pressure misting and fogging.<br>• Smart scheduling: Manual scheduling based on an interaction of factors to maximize the efficiency of water use in irrigating plants. Considers the following: timing (to reduce evapotranspiration, best at night or away from peak sun and heat loads); flow rate and distribution of irrigation system; slope; soil type and infiltration rate of area being irrigated; plant type (watering needs and root depth); seasonal changes in watering needs; and predicted and actual rainfall. |

**Scoring**

| | Yes | No | N/A |
|---|---|---|---|
| Drip irrigation | 3/6 | 0/6 | 0/0 |
| Root-fed irrigation | 3/6 | 0/6 | 0/0 |
| Soil moisture sensors | 3/6 | 0/6 | 0/0 |
| Rain sensors | 3/6 | 0/6 | 0/0 |
| Weather-based controllers | 3/6 | 0/6 | 0/0 |
| Pressure regulated head | 3/6 | 0/6 | 0/0 |
| Smart scheduling | 3/6 | 0/6 | 0/0 |

| 02.04.04 | What percentage of the building's water consumption is sub-metered? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** Sub-meters measure the water consumption of specific areas or equipment, providing property owners and managers with the ability to understand where and how the building water is used.<br>**Requirements:** Provide outputs from sub-meters along with information on each sub-meter such as make, model, and serial number.<br>**Additional Information:** Metering major water consuming mechanical equipment such as cooling towers will reveal how often it runs and how much water it consumes during operation, as well as identify when equipment drifts away from set point (should it occur).<br>Metering tenant areas could allow for reclaiming costs associated with water consumption and raise water efficiency awareness with the tenants.<br>Systems such as irrigation, and common areas should be sub-metered separately to allow for early identification of consumption changes which could indicate a problem. | |
| **Scoring** | 30% or more | 9/9 |
| | 20-29% | 6/9 |
| | 10-19% | 3/9 |
| | Less than 10% | 0/9 |

| 02.04.05 | What percentage of water fixtures are efficient, based on inventory amount? |
|---|---|
| **Explanation & Evaluation** | **Description:** A high-efficiency fixture uses less water while still performing its function.<br>**Requirements:** For each fixture type, identify what percentage of fixtures is efficient based on the standards listed.<br>**Additional Information:**<br>Select Not Applicable if a certain type of fixture is not present in the building or if the fixtures are owned, managed and maintained solely by tenants.<br>Reference: WaterSense-approved fixtures (http://www.epa.gov/watersense/products/) |

| 02.04.06 | Toilet: 4.8 L/flush or less (1.28 GL/flush) | |
|---|---|---|
| **Explanation & Evaluation** | | |
| **Scoring** | 75 – 100% | 8/8 |
| | 50 – 74% | 4/8 |
| | 25 – 49% | 2/8 |
| | Less than 25% | 0/8 |
| | N/A | 0/0 |

| 02.04.07 | Urinals: 1.9 L/flush or less (0.5 GL/flush) | |
|---|---|---|
| **Explanation & Evaluation** | | |
| **Scoring** | 75 – 100% | 8/8 |
| | 50 – 74% | 4/8 |
| | 25 – 49% | 2/8 |
| | Less than 25% | 0/8 |
| | N/A | 0/0 |

| 02.04.08 | Lavatory and kitchen faucets: 5.7 L/min or less (1.5 GL/min) | |
|---|---|---|
| **Explanation & Evaluation** | | |
| **Scoring** | 75 – 100% | 5/5 |
| | 50 – 74% | 3/5 |
| | 25 – 49% | 2/5 |
| | Less than 25% | 0/5 |
| | N/A | 0/0 |

| 02.04.09 | Shower heads: 7.6 L/min or less (2 GL/min) | |
|---|---|---|
| **Explanation & Evaluation** | | |
| **Scoring** | 75 – 100% | 4/4 |
| | 50 – 74% | 2/4 |
| | 25 – 49% | 1/4 |
| | Less than 25% | 0/4 |
| | N/A | 0/0 |

## 2.5 INNOVATION

| 02.05.01 | Is a potable water testing program in place at the building? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** A potable water quality testing program will confirm that the quality of the water supplied to building occupants for potable use.<br>**Requirements:** A potable water testing program must be in place at the building which includes annual testing at representative points of use to identify (and ultimately address) vulnerabilities. Consideration of the following is recommended:<br>• Consideration of the following is recommended:<br>• Microbiological, including *Legionella*<br>• Chemicals<br>• Physical aesthetic properties (turbidity)<br>• Organics (including pesticides, herbicides)<br>• Metals (including lead)<br>• Radionuclides<br>At a minimum, annual testing must include microbiological parameters, physical aesthetic properties and metals.<br>Demonstration of implementation is required. The program can be common to a portfolio or campus of buildings however implementation must be building-specific.<br>**Additional Information:** Even municipally supplied water at buildings can become contaminated as it travels through the building water system to point of use. Old piping, microbiological contamination, and piping with long periods of low usage (or dead-legs) can lead to an increased risk of poor water quality. Potable water testing will assist in identifying water quality issues which can be addressed with treatment or filtration.<br>For all innovation questions, if you are unable to answer "Yes", select "Not Applicable" instead. No points will be lost. | |
| **Scoring** | Yes | 9/9 |
| | N/A | 0/0 |

| 02.05.02 | Have three (3) years of water consumption been analyzed in order to establish trends? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** Analyzing water consumption data and establishing a trend can assist facilities staff and building owners better manage their buildings by detecting anomalies in water use and by harnessing the power of data extrapolated over time.<br>**Requirements:** Analysis of the building's water consumption must include data from at a minimum, three (3) continuous years. Establish a baseline and assess consumption patterns over time. The analysis must clearly show trends and anomalies in relation to established water savings goals. Trends need not be positive.<br>**Additional Information:** Ensure you are comparing the same areas and that no major renovations have occurred over the time of this trending assessment.<br>For all innovation questions, if you are unable to answer "Yes", select "Not Applicable" instead. No points will be lost. | |
| **Scoring** | Yes | 9/9 |
| | N/A | 0/0 |

| 02.05.03 | Are non-potable water sources used at the building? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** The use of non-potable water in certain practices will reduce how much potable water is used in the building – allowing for potable water to be conserved for more critical needs, such as for drinking.<br>**Requirements:** Use of alternatively sourced water must make up at least 5% of the building's total water consumption.<br>**Additional Information:** Examples of non-potable water uses include grey water collected from condensate used as flushing water in urinals and toilets or collecting rain water to use for irrigation purposes.<br>For all innovation questions, if you are unable to answer "Yes", select "Not Applicable" instead. No points will be lost. | |
| **Scoring** | Yes | 9/9 |
| | N/A | 0/0 |

| 02.05.04 | Is an innovative process or technology (approved by BOMA Canada) in place at the building that goes beyond the requirements outlined in this section? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** Many processes and technologies exist that go beyond the standards and requirements set out in the BOMA BEST Assessment. If building managers/owners have invested in innovative processes or technologies that go beyond these standards, innovation points can be earned under this question.<br>**Requirements:** Contact bomabest@bomacanada.ca to obtain the official submission guidelines. The BOMA BEST Technical Committee will assess each proposal to determine whether it qualifies. If pursuing this path, expect a 10-12-week delay before receiving a final decision.<br>If you have not received a formal approval for your process or technology from BOMA Canada, click “Not Applicable”. | |
| **Scoring** | Submitted to BOMA Canada | 0/0 |
| | Approved by BOMA Canada | 21/21 |
| | N/A | 0/0 |

# 3. AIR

## 3.1 DEMONSTRATION OF INTENT

| 03.01.01 | Is a training program on indoor air quality (IAQ) in place for Property Managers and Building Maintenance staff? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** For building maintenance staff to effectively maintain HVAC systems for optimal indoor air quality, training should be provided which addresses the relationship between HVAC maintenance and IAQ. The intent of the training is to equip the property manager and/or building maintenance staff with knowledge of their HVAC systems, preventative maintenance programs, common IAQ issues and remedies.<br>**Requirements:** The formal training program must include in person or web-based seminars on the following topics, at a minimum:<br>• A review of maintenance practices such as filter changes, coil cleaning, drain pans, humidifiers, fan operation, cooling tower maintenance, etc.<br>• A review of applicable IAQ standards and guidelines as well as building performance goals.<br>• Typical causes of IAQ complaints and suggested remedies.<br>• Training must be refreshed as HVAC systems are changed, and at least every three (3) years.<br>• A record of attendance, syllabus and competency assessment (quiz) should be kept.<br>• Where HVAC services are contracted to a third party, the property manager and/or building maintenance staff must still be provided with basic training on IAQ, to assist in directing the HVAC service provider.<br>Demonstration of implementation is required. The program can be common to a portfolio or campus of buildings however implementation must be building-specific.<br>**Additional Information:** A detailed description of suggested maintenance practices and frequencies is available in ASHRAE 180 "Standard Practice for Inspection and Maintenance of Commercial Building HVAC Systems". Additional rationale for preventative HVAC maintenance practices for the benefit of indoor air quality is provided in the ASHRAE Indoor Air Quality Guide < https://www.ashrae.org/resources--publications/bookstore/indoor-air-quality-guide>. | |
| **Scoring** | Yes | 14/14 |
| | No | 0/14 |

| 03.01.02 | Is smoking restricted on the property? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** To reduce the potential for exposure, there must be restrictions placed on areas where occupants, staff or visitors are allowed to smoke (including e-cigarettes).<br>**Requirements:** The property must provide clear signage indicating designated exterior smoking areas at, or exceeding, a minimum distance of nine (9) meters from building entrances and intakes.<br>**Additional Information:** Such restrictions reduce the potential for harmful smoking products and odours from entering the building HVAC systems, and increases occupant comfort in the building exterior space. Consideration should be given to the implementation of a property-wide smoking and e-cigarette ban. | |
| **Scoring** | Yes | 11/11 |
| | No | 0/11 |

| 03.01.03 | Is a plan in place to control construction-generated contaminants prior to base-building or tenant renovations? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** Specific guidelines must be in place for base-building or tenant renovations to ensure that contaminants are not released into the surrounding interior environment.<br>**Requirements:** Guidelines must specify consideration of each of the following, where relevant:<br>• Hazardous materials (reference to the Hazardous Building Materials Management Program);<br>• De-pressurization of construction zones (e.g., in medical offices, hospitals and long-term care facilities);<br>• Noise control;<br>• Vibration control monitoring, as applicable;<br>• Dust control;<br>• Volatile organic compound (VOC) emission/absorption management;<br>• Odours;<br>• Isolation of HVAC zones and/or enhanced ventilation;<br>• HVAC filter replacement;<br>• Awareness training of relevant staff.<br>Although demonstration of implementation is preferable, it is not necessary. The plan can be common to a portfolio or campus of buildings however building-specific information is required.<br>**Additional Information:** During renovation or construction activities, elevated airborne particulate can be generated through the disturbance of various building materials (e.g., concrete, plaster, drywall, ductwork, flooring, and insulation), dusts originating from products used in the construction and by equipment that may emit combustion products. Additionally, building furnishings and finishes typically emit volatile organic compounds. Strategies to mitigate the impact of construction-generated contaminants in adjacent spaces should be developed and implemented.<br>These procedures can be included in a building construction manual. Any renovation project that has the potential to generate the above noted contaminants should have a control plan. | |
| **Scoring** | Yes | 3/3 |
| | No | 0/3 |

## 3.2 ASSESSMENT

| 03.02.01 | Does the air quality meet the goals set out in the IAQ Monitoring Plan? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** The building owner/manager must confirm at least annually that IAQ goals set out in the IAQ Monitoring Plan are being met.<br>**Requirements:** An IAQ audit must be conducted annually by a competent individual to confirm that the parameters set out in the IAQ Monitoring Plan are being met. This audit must include at a minimum:<br>• Measurement of key IAQ parameters (temperature, relative humidity, particulate, total volatile organic compounds, carbon dioxide and carbon monoxide) at representative locations throughout the building. This must include both base building and tenant spaces.<br>• Visual inspection of all main and representative supplementary HVAC systems to confirm good hygiene.<br>• Measurements and visual inspections must match performance goals for the building set out in the IAQ Monitoring Plan. | |
| **Scoring** | Yes | 9/9 |
| | No | 0/9 |
| | Unknown | 0/0 |

## 3.3 OPERATIONS & MAINTENANCE

| 03.03.01 | Are the results of the most recent IAQ audit available to building occupants? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** Building occupants (tenants and building staff) are important stakeholders in IAQ management. Promoting a better understanding of IAQ in the building will encourage feedback and demonstrate active management of IAQ concerns.<br>**Requirements:** A summary of results of the IAQ audit must be proactively communicated via a web dashboard, posters, emails, etc. Evidence of proactive communications must be produced. Where requested, detailed results of the IAQ Audit must be made available to building tenants/occupants. Such requests should be logged and responded to in a timely fashion. Evidence of any tenant/occupant requests and responses must be produced.<br>**Additional Information:** Select Not Applicable if no IAQ audit was performed. | |
| **Scoring** | Yes | 4/4 |
| | No | 0/4 |
| | N/A | 0/0 |

| 03.03.02 | Has the building manager acted on recommended corrective actions identified in the IAQ audit? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** Where recommended corrective actions (RCA) were identified in the IAQ audit, steps should be taken to address them. These actions might include increasing local ventilation for an area with high carbon dioxide levels, providing additional humidification in winter months, or cleaning of internal HVAC components.<br>**Requirements:** Demonstrate that no issues were identified during the previous IAQ Audit, or that recommended corrective actions identified in the IAQ audit have been addressed. This must include documentation of the corrective measures and follow up assessment to confirm that the issue is resolved.<br>**Additional Information:** Select Not Applicable if an IAQ audit has not been performed or no RCAs were identified by the IAQ audit. | |
| **Scoring** | Yes | 6/6 |
| | No | 0/6 |
| | N/A | 0/0 |

| 03.03.03 | Is there a process in place for investigating and correcting when manual overrides of the HVAC system occur? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** Manual overrides of the mechanical systems can occur due to building occupant complaints. A process should be developed and implemented to investigate override occurrences and to reset the system. Overrides due to system typically indicate there are other systemic issues that should be investigated.<br>**Requirements:** Establish a process for investigating and correcting when manual overrides of the HVAC system occur. Root causes of HVAC system failure or inadequate function must be determined, and changes implemented to prevent the need for future overrides.<br>The process must include documentation of the override, investigation methodology, corrective actions including a schedule for completion, and follow up assessment.<br>**Additional Information:** Select Not Applicable if all HVAC equipment is owned, managed and maintained solely by tenants. | |
| **Scoring** | Yes | 12/12 |
| | No | 0/12 |
| | N/A | 0/12 |

| 03.03.04 | Is nighttime outdoor air purging performed at the building? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** Where climate and the quality of outdoor air permits, the use of night time air purging strategies can be employed to both pre-cool and purge air in a building for the next day. This practice goes above and beyond the use of economizers that may operate to use free-cooling during daytime hours.<br>**Requirements:** A minimum of two (2) full air changes of the building must be provided when temperatures are suitable. Purging must use a high percentage of outdoor air (at least 75%). Demonstrate that purging is performed regularly as part of standard operations (whenever possible).<br>**Additional Information:** Purging operating times are dictated by outdoor and building temperatures and should be performed after occupied periods, typically Monday to Friday.<br>Select Not Applicable if all HVAC equipment is owned, managed and maintained solely by tenants. | |
| **Scoring** | Yes | 8/8 |
| | No | 0/8 |
| | N/A | 0/0 |

| 03.03.05 | Are there minimum open set points on all variable air volume dampers? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** If dampers on variable air volume (VAV) VAV boxes are allowed to close completely the supply air to these zones may be completely cut off for extended periods of time. This will usually occur when the temperature requirements are satisfied in the area where the thermostat control for the VAV is located. When this happens all internally generated pollutants will build up and building occupants will likely complain of stale air.<br>**Requirements:** Establish and set minimum open set points for the VAV dampers so that they are never allowed to close completely. Minimum set points must be established in accordance with manufacturer specifications.<br>**Additional Information:** Select Not Applicable if all HVAC equipment is owned, managed and maintained solely by tenants. | |
| **Scoring** | Yes | 10/10 |
| | No | 0/10 |
| | N/A | 0/0 |

## 3.4 BUILDING SYSTEMS

| 03.04.01 | What MERV filters are in use for all outdoor air and return air (i.e. circulating air) systems? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** Use of MERV 8 or greater filtration systems significantly reduces levels of indoor contaminants and prevents build-up of particulate and debris on HVAC components. Filtration of return-air (from systems such as compartment units, fan-coil units, heat pumps) prevents recirculation of occupant-generated contaminants.<br>**Requirements:** All filters must be rated as per ASHRAE 52.2.<br>Filters must be replaced at or before the pre-determined pressure drop or timeframe, not exceeding the manufacturer's specifications and ASHRAE Standard 180 (Maintenance Standard). To demonstrate compliance:<br>• Provide evidence of the MERV filter rating (e.g., via inventory list, product box); AND<br>• Provide evidence of the agreed upon change-out point, based on either pressure drop or time as agreed to by the building manager; AND<br>• Provide preventative maintenance logs in the Preventative Maintenance Program to show that the filters are being replaced at the agreed intervals.<br>Additional points are awarded if the filters maintain their MERV rating when tested in accordance with ASHRAE 52.2 Appendix J. To demonstrate compliance, provide the test report from the manufacturer or supplier showing all the following:<br>• The MERV rating; AND<br>• The MERV-A efficiency testing results; AND<br>• Attestation that the test has been conducted as per ASHRAE 52.2 standards; AND<br>• Testing company signature or stamp and date.<br>**Additional Information:** Installation of filtration systems that meet ASHRAE Minimum Efficiency Reporting Value (MERV) 8 will prevent larger outdoor air contaminants such as mould spores, pollen, some dusts, and aerosols from entering the HVAC system.<br>Installation of filtration systems that meet ASHRAE Minimum Efficiency Reporting Value (MERV) 13 to 16 prevent up to 90% of fine outdoor air contaminants such as mould spores, pollen, dusts, and aerosols from entering the HVAC system.<br>If a combination of filters is used, select the highest MERV rating representative of at least 50% of all filters. Select Not Applicable if all HVAC systems are owned, managed, and maintained solely by tenants. | |
| **Scoring** | MERV 7 or below | 0/15 |
| | MERV 8-12 | 8/15 |
| | MERV 8-12 (ASHRAE 52.2, Appendix J) | 10/15 |
| | MERV 13-16 | 13/15 |
| | MERV 13-16 (ASHRAE 52.2, Appendix J) | 15/15 |
| | N/A | 0/0 |

| 03.04.02 | Do all high traffic entryways have track-off systems such as grills, grates or matting in place throughout the year? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** Many indoor air contaminants such as bacteria, soils, and mould can be transported into a building by the occupants. An entryway system to capture contaminants tracked in on footwear should be employed.<br>**Requirements:** Grills, grates or matting must be in place throughout the year in order to reduce particulate and other contaminant transfer. Track-off systems need not be permanent fixtures but must be cleaned and replaced as necessary. The matting system should be 12 -15 feet long, where permissible.<br>Describe how these systems are used, cleaned and maintained.<br>**Additional Information:** An ideal set up for a main entrance consists of an outside scraper mat, foyer mat and an inside carpet mat.<br>The ASHRAE IAQ Guide section 3.5 describes the factors to be considered in determining the appropriate track-off system including traffic load, aesthetics, dominant contributors and local environmental conditions. | |
| **Scoring** | Yes | 9/9 |
| | No | 0/9 |

| 03.04.03 | Are measures in place to alert building operators that HVAC filtration systems need replacement? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** Measures to alert building operators when filtration systems require replacement outside of regular preventative maintenance schedules. Overloaded, improperly fit filters degrade the performance of the HVAC unit and increase the potential for outdoor contaminants to enter the indoor air.<br>**Requirements:** Implement measures, such as sensors (pressure, air flow, etc.) to ensure that filtration systems are performing correctly. Sensors must be installed and maintained in accordance with manufacturer specifications.<br>**Additional Information:** Although regular preventative maintenance programs are effective in maintaining filtration systems, the condition of outdoor air is not static. Increased levels of outdoor contaminants due to local construction, weather conditions, etc., may shorten the useful life of a filter. Measures such as sensors are employed to assist the building operator in identifying filtration systems that have reached capacity such that maintenance can be performed before the system's efficiency is compromised.<br>Select Not Applicable if all HVAC systems are owned, managed and maintained solely by tenants. | |
| **Scoring** | Yes | 4/4 |
| | No | 0/4 |
| | N/A | 0/0 |

| 03.04.04 | Do measured outdoor air ventilation rates meet the minimum requirements of Table 6.2.2.1 of the current ASHRAE 62.1 Standard. | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** When HVAC systems are capable of providing ventilation rates in accordance with ASHRAE 62.1, it must be confirmed that they are operated in such a manner that these rates are continually achieved in occupied spaces.<br>**Requirements:** Determine the average ventilation rate for frequently occupied indoor spaces. This must be achieved through on-site measurement.<br>The assessment must have been completed within the last five (5) years, or as major renovations of the HVAC systems occur.<br>**Additional Information:** Rates can be measured using in-line sensors/monitors, or preferably through measurements of actual outdoor and supply air through the use of a certified air balancing contractor or similar.<br>Reference: ASHRAE 62.1 Standard < https://www.ashrae.org/resources--publications/bookstore/standards-62-1--62-2> | |
| **Scoring** | Yes | 9/9 |
| | No | 0/9 |

| 03.04.05 | Is there an enclosed parking garage, loading dock or fuel/gas-fired equipment room within or connected to the building? | |
|---|---|---|
| **Explanation & Evaluation** | | |
| **Scoring** | Yes | For informational purposes |
| | No | For informational purposes |

| 03.04.06 | Is the enclosed parking garage and/or gas/fuel-fired equipment room ventilated? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** In office and commercial buildings, important sources of combustion products include garages, and loading docks that are attached or have a pathway to working spaces. Air intakes located at ground level or adjacent to vehicles or other combustion sources can transport contaminants to areas served by the air handling system.<br>**Requirements:** Enclosed parking garages and/or fuel fired equipment rooms must be ventilated – either continuously or on demand. Where on-demand ventilation is employed, sensors must be appropriate to the combustion source or triggered by the startup of the fuel fired equipment.<br>Combustion products may include carbon monoxide, oxides of nitrogen, sulphur oxides, carbon dioxide, and particulates**.** At a minimum, concentration of carbon monoxide must be monitored to confirm they are within accepted limits (either continuously or during representative periods). | |
| **Scoring** | Yes | 7/7 |
| | No | 0/7 |

## 3.5 INNOVATION

| 03.05.01 | Do the following space types have a dedicated exhaust system? | | |
|---|---|---|---|
| **Explanation & Evaluation** | **Description:** Air from spaces containing local contaminant and odour sources such as high-volume printer rooms, kitchens, custodial rooms, and chemical storage areas, should not be entrained with the return air and re-distributed to other parts of the building.<br>**Requirements:** To prevent the spread of contaminants, a dedicated exhaust system must be in place in these space types. Select all space use types for which more than 50% of the space use type is outfitted with a dedicated exhaust system. Tenant areas must be included in this calculation (e.g., tenant kitchens, enclosed printing rooms, etc.)<br>**Additional Information:** Select all that apply. Though not required, additional measures such as self-closing doors, separation from adjacent spaces with deck-to-deck partitions or a continuous hard ceiling should be employed to further reduce contamination.<br>For all innovation questions, if you are unable to answer "Yes", select "Not Applicable" instead. No points will be lost. | | |
| **Scoring** | | Yes | N/A |
| | Enclosed Printing/Copying Rooms | 8/24 | 0/0 |
| | Tenant and Staff Kitchens | 8/24 | 0/0 |
| | Custodial/Chemical Storage Rooms | 8/24 | 0/0 |

| 03.05.02 | Are concentrations of carbon monoxide below 25 ppm in the enclosed parking garage and/or gas/fuel-fired equipment room? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** Carbon monoxide can build up to harmful levels in enclosed parking garages or fuel fired equipment rooms.<br>**Requirements:** Concentrations of carbon monoxide must be monitored either continuously or by representative sampling to confirm that levels are below 25 ppm. Representative sampling must be conducted at least annually, and must capture high traffic periods.<br>Where continuous monitoring is conducted via sensors, these sensors must be installed and calibrated in accordance with manufacturer's specifications.<br>For all innovation questions, if you are unable to answer "Yes", select "Not Applicable" instead. No points will be lost. | |
| **Scoring** | Yes | 16/16 |
| | N/A | 0/0 |

| 03.05.03 | Are air sanitation measures in place in main HVAC systems or in 50% or more of return-air systems? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** Outdoor air conditions, as well as interior contaminant recirculation, may warrant investment in greater air purification measures. Standalone or integrated air sanitation devices such as ultraviolet germicidal irradiation, or photocatalytic oxidation filtration systems can be employed to reduce the presence of VOCs, mould, ozone, bacteria and viruses. These measures would supplement (not necessarily replace) MERV rated filtration.<br>**Requirements:** One or more of the following air sanitation measures must be in place in main HVAC systems or in a majority of return-air systems:<br>• Ultraviolet germicidal irradiation for air filtration<br>• Photocatalytic oxidation filtration<br>• Activated carbon filtration<br>Units must be maintained as per manufacturer specifications, including recommendations on carbon testing (annually at a minimum) and replacement schedule (carbon units should be replaced annually if no testing can be done).<br>**Additional Information:** For all innovation questions, if you are unable to answer "Yes", select "Not Applicable" instead. No points will be lost. | |
| **Scoring** | Yes | 8/8 |
| | N/A | 0/0 |

| 03.05.04 | Are the measured outdoor air ventilation rates greater than those required by Table 6.2.2.1 of the current version of ASHRAE 62.1? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** ASHRAE ventilation rates are established to satisfy a majority of occupants. Although there are energy drawbacks, providing ventilation rates that exceed ASHRAE 62.1 will satisfy a greater majority of occupants and result in improved air quality.<br>**Requirements:** Demonstrate with measured ventilation rates that ASHRAE 62.1 levels are exceeded by a minimum of 30%.<br>**Additional Information:** Rates can be measured using in-line sensors/monitors, or preferably through measurements of actual outdoor and supply air through the use of a certified air balancing contractor or similar.<br>For all innovation questions, if you are unable to answer "Yes", select "Not Applicable" instead. No points will be lost. | |
| **Scoring** | Yes | 8/8 |
| | N/A | 0/0 |

| 03.05.05 | Is an innovative process or technology (approved by BOMA Canada) in place at the building that goes beyond the requirements outlined in this section? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** Many processes and technologies exist that go beyond the standards and requirements set out in the BOMA BEST Assessment. If building managers/owners have invested in innovative processes or technologies that go beyond these standards, innovation points can be earned under this question.<br>**Requirements:** Contact bomabest@bomacanada.ca to obtain the official submission guidelines. The BOMA BEST Technical Committee will assess each proposal to determine whether it qualifies. If pursuing this path, expect a 10-12-week delay before receiving a final decision.<br>If you have not received a formal approval for your process or technology from BOMA Canada, click “Not Applicable”. | |
| **Scoring** | Submitted to BOMA Canada | 0/0 |
| | Approved by BOMA Canada | 14/14 |
| | N/A | 0/0 |

# 4. COMFORT

## 4.1 DEMONSTRATION OF INTENT

There are no questions in this section.

## 4.2 ASSESSMENT

| 04.02.01 | Is the building designed such that potential accessibility barriers are addressed? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** The design of the site features and the base building must ensure that areas generally accessed by the public are accessible and meet current barrier-free or accessibility standards or guidelines governing the facility.<br>Where the construction of the facility predates the guidelines, owners are encouraged to renovate and to provide barrier-free paths of travel to and in the facility. The design or renovation must accommodate all people, irrespective of their level of ability.<br>**Requirements:** The building must comply with current building codes, standards and regulations through consultation with the local jurisdiction, such as the building code, AODA, Integrated Accessibility Standards Regulation or Americans with Disabilities Act (ADA). Where multiple local regulations, standards and building codes exist, the strictest shall apply.<br>**Additional Information:** Select Not Applicable if these criteria cannot be met due to heritage conservation requirements. Provide evidence of the relevant heritage elements that cannot be modified. | |
| **Scoring** | Yes | 14/14 |
| | No | 0/14 |
| | N/A | 0/0 |

## 4.3 OPERATIONS & MAINTENANCE

There are no questions in this section.

## 4.4 BUILDING SYSTEMS

There are no questions in this section.

## 4.5 INNOVATION

| 04.05.01 | Do occupants have local control of thermal comfort parameters? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** Providing occupants with control of temperature within a localized area such as an individual office, conference room, or section of open plan work space increases occupant satisfaction.<br>**Requirements:** Local controls such as thermostats must be present within all frequently occupied work spaces. Where the property owner supplies the HVAC system to the tenants, local controls or thermostats should also be supplied to the tenant. At a minimum, local controls must be present in conference rooms, closed offices, and per 5,000 square feet of open office space on the same floor.<br>For all innovation questions, if you are unable to answer "Yes", select "Not Applicable" instead. No points will be lost. | |
| **Scoring** | Yes | 16/16 |
| | N/A | 0/0 |

| 04.05.02 | Do frequently occupied spaces have radiant building surfaces? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** Radiant surfaces provide occupants with enhanced thermal comfort.<br>**Requirements:** Provide radiant building surfaces (such as radiant panels, thermally active slab/ceiling, and chilled beams) to frequently occupied spaces. These surfaces may provide main or supplemental heating for the occupied space.<br>For all innovation questions, if you are unable to answer "Yes", select "Not Applicable" instead. No points will be lost. | |
| **Scoring** | Yes | 8/8 |
| | N/A | 0/0 |

| 04.05.03 | Is the building currently certified with the Rick Hansen Foundation Accessibility Certification™? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** The Rick Hansen Foundation Accessibility Certification™ (RHFAC) is a rating system developed to help property owners and managers measure the accessibility of their sites and promote increased access through the adoption of Universal Design principles. The program measures a site's level of meaningful access based upon CSA B651 standards that considers the holistic user experience of people of all abilities, including those with mobility, vision, and hearing disabilities.<br>**Requirements:** All spaces managed and controlled by the building manager must have achieved RHF Accessibility Certified or RHF Accessibility Certified Gold. The certified space must include all areas that are available to the public and employees and may exclude tenanted spaces or restricted areas (e.g. boiler room, biohazardous areas). If a tenant occupies a whole site, all areas will be considered common and must be rated RHFAC to be eligible. The space must be currently certified with RHFAC at the time of the BOMA BEST verification, as demonstrated by the RHFAC Certificate.<br>**Additional Information:** For more information, visit the Rick Hansen Foundation Accessibility Certification™ website.<br>For all innovation questions, if you are unable to answer "Yes", select "Not Applicable" instead. No points will be lost. | |
| **Scoring** | Yes - RHF Accessibility Certified Gold | 16/16 |
| | Yes - RHF Accessibility Certified | 12/12 |
| | N/A | 0/0 |

# 5. HEALTH & WELLNESS

## 5.1 DEMONSTRATION OF INTENT

| 05.01.01 | Is a *Legionella* Bacteria Control Management Program in place at the building? |
|---|---|
| **Explanation & Evaluation** | **Requirements:** Develop and implement for *Legionella* susceptible water systems a Legionella Bacteria Control Management Program that is compliant with ASHRAE 188 "Legionellosis: Risk Management for Building Water Systems" and Public Works and Government Services Canada's "Control of *Legionella* in Mechanical Systems".<br>The following systems must be considered for Legionella susceptibility, at a minimum:<br>• Cooling towers and evaporative condensers;<br>• Aerosol-generating misters, atomizers, humidifiers;<br>• Hot and cold water systems;<br>• Domestic hot water storage tanks;<br>• Open air systems (such as decorative fountains); and<br>• Whirlpool Spas.<br>For compliance, the *Legionella* Bacteria Control Management Program must include consideration of the following components:<br>• Program team (identification of the persons responsible for developing and implementing the program, and the tasks for which they are responsible);<br>• Water system flow diagrams;<br>• Analysis of building water systems;<br>• Water sampling protocol (includes monthly testing of hot water storage tanks, cooling tower and hot and cold water distribution systems;<br>• Control measures;<br>• Monitoring and corrective actions;<br>• Confirmation;<br>• Documentation;<br>• Training;<br>• Annual review and update.<br>Risk analysis, and monitoring of control measures must be documented and kept current. At a minimum, the program must be reviewed every 12 months to ensure risks associated with legionella susceptible systems are mitigated.<br>The program must be developed and executed by a person competent in Legionella mitigation measures.<br>Where *Legionella* susceptible systems are owned and maintained by the tenants, the building owner/manager must provide information on how to implement a Legionella bacteria control management program. Tenants must be encouraged to disclose *Legionella* susceptible systems on-site and participate in the *Legionella* bacteria control management program.<br>Demonstration of implementation is required. The program can be common to a portfolio or campus of buildings however implementation must be building-specific.<br>**Additional Information**: The program team should include the building owner or designee, employees, consultants and contractors.<br>The building water systems should be described in the form of a flow diagram, to assist in analyzing the areas of risk and determining sampling locations. Where necessary, control measures such as preventative maintenance, inspections and water treatment should be implemented. These control measures must be monitored to ensure they are effective (for example, through routine sampling activities and checking temperatures of hot water once a month). |

| | | |
|---|---|---|
| | Select Not Applicable if there are no *Legionella* susceptible systems in the building. | |
| **Scoring** | Yes | 17/17 |
| | No | 0/17 |
| | N/A | 0/0 |

| **05.01.02** | **Is a Refrigerant Safety Program in place at the building?** | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** Some refrigerants present both a health and environmental hazard. Safety measures should be employed to reduce the potential for releases.<br>**Requirements:** Develop and implement a Refrigerant Safety Program compliant with CSA Mechanical Refrigeration Code B52-13 and ASHRAE Standard 15-2013 "Safety Standard for Refrigeration Systems" for large base building systems where leaks will have significant impacts on indoor air quality or climate.<br>The following systems must be considered, at a minimum:<br>• HVAC;<br>• Industrial refrigeration or water systems;<br>• Domestic fridges/freezers and stand-alone water coolers are excluded from consideration.<br>For compliance, the Safety Program must include consideration of the following components:<br>• Identification of refrigerant systems and inventory;<br>• Proper operation, testing and maintenance;<br>• Presence of safeguards, such as sensors;<br>• Signage;<br>• Proper storage;<br>• Emergency shutdown procedures;<br>• Training for building staff working on equipment containing refrigerants;<br>• Use of licensed personnel, where required.<br>The Refrigerant Safety Program may be a campus-wide or corporate document, but should include building specific inventory and safety considerations. Tenants must be encouraged to disclose refrigerants on-site and participate in the Safety Plan (may be part of the lease agreement).<br>Where refrigerant equipment is owned and maintained by the tenant, the building owner/manager must provide information on how to implement a Refrigerant Safety Program. Tenants must be encouraged to disclose any halocarbon fire suppressant systems within their space.<br>Demonstration of implementation is required. The program can be common to a portfolio or campus of buildings however implementation must be building-specific.<br>**Additional Information:** Select Not Applicable if there are no refrigerants in the building. | |
| **Scoring** | Yes | 13/13 |
| | No | 0/13 |
| | N/A | 0/0 |

| 05.01.03 | Is a safety program in place for halocarbon fire suppression systems? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** Halon is an ozone depleting substance as well as an indoor atmospheric hazard (oxygen displacing). Use of halon in fire-suppression systems has been banned in many jurisdictions.<br>**Requirements:** Develop and implement safety program for halocarbon fire suppression systems in the building.<br>For compliance, the safety program must include consideration of the following components:<br>• Inventory of halocarbon fire suppressants greater than 10 kg;<br>• Procedures for leaks;<br>• Procedures for disposal;<br>• Training; and<br>• Annual review and update.<br>The safety and global warming potential of non-halon fire suppression systems must also be assessed and where necessary, controls should be put in place to prevent exposures and releases.<br>Where refrigerant equipment is owned and maintained by the tenant, the building owner/manager must provide information on how to implement a safety program for halocarbon fire suppression systems. Tenants must be encouraged to disclose any halocarbon fire suppression systems within their space.<br>Demonstration of implementation is required. The program can be common to a portfolio or campus of buildings however implementation must be building-specific.<br>**Additional Information:** Select Not Applicable if there are no halocarbon fire suppression systems in the building. | |
| **Scoring** | Yes | 15/15 |
| | No | 0/15 |
| | N/A | 0/0 |

| 05.01.04 | Is a management program in place at the building for above or below ground fuel storage tanks (AST/UST)? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** A management program for AST/UST will prevent ground water and soil contamination.<br>**Requirements:** Develop and implement a management program compliant with the "Environmental Code of Practice for Aboveground and Underground Storage Tank Systems Containing Petroleum and Allied Petroleum Products" <https://www.ec.gc.ca/lcpe-cepa/default.asp?lang=En&n=61B26EE8-1>, developed by Environment Canada.<br>For compliance, the management program must include consideration of the following components:<br>• Inventory;<br>• Registration with local authorities, where applicable;<br>• Tank upgrading/replacement;<br>• Testing;<br>• Spill protection;<br>• Emergency preparedness;<br>• Record keeping; and<br>• Training.<br>Where fuel storage tanks are owned and maintained by the tenant, the building owner/manager must provide information on how to implement a fuel storage tank management program. Tenants must be encouraged to disclose the installation of any above or below ground fuel storage tanks.<br>Demonstration of implementation is required. The program can be common to a portfolio or campus of buildings however implementation must be building-specific.<br>**Additional Information:** Select Not Applicable if there are no above or below ground fuel storage tanks. | |
| **Scoring** | Yes | 8/8 |
| | No | 0/8 |
| | N/A | 0/0 |

## 5.2 ASSESSMENT

| 05.02.01 | Has a radon risk assessment been completed for the building? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** Radon is a colourless, odourless, naturally occurring radioactive gas present in soil, rock and water. In indoor environments, radon gas can penetrate the building envelope and accumulate in hazardous concentration levels. Radon is a risk everywhere and testing is therefore recommended, even in "low-probability areas" (Health Canada, C-NRPP).<br>**Requirements:** Radon testing must occur in all occupied areas where the floors or walls are in direct contact with the ground or a crawl space. Health Canada defines an occupied area as one that is, or may be, occupied by an individual for four (4) hours per day. If none of the ground contact floors are occupied, test all occupied rooms on the first occupied floor level above.<br>Long term measurement of these areas is required for a minimum of 91 days. The professional accredited by the Canadian National Radon Proficiency Program (C-NRPP) will determine the valid 91-day testing period for the building during the heating season.<br>Measurement devices approved by C-NRPP must be used. The radon risk assessment report must be signed by an individual certified by the Canadian National Radon Proficiency Program (www.C-NRPP.ca). Final analysis must be completed by a laboratory certified by C-NRPP. Note, not all measurement protocols require laboratory analyses (e.g., E-PERM Electrets) so long as the analyst is accredited to conduct that analysis through C-NRPP.<br>**Additional Information:** The Guide for Radon Measurements in Public Buildings recommends an action level of 200 Becquerel per cubic meter ($Bq/m^3$) to minimize health hazards due to indoor radon exposure.<br>In the event of high radon test results, the Guide for Radon Measurements in Public Buildings recommends conducting additional diagnostic testing on the upper floors. High radon levels can potentially exist on upper floors due to the upward movement of air from stack effect or if radon is suspected to be emanating from building materials. This diagnostic testing can be conducted using a continuous radon monitor (CRM). | |
| **Scoring** | Yes | 15/15 |
| | No | 0/15 |

## 5.3 OPERATIONS & MAINTENANCE

| 05.03.01 | Are radon levels currently below 200 Bq/m³ or are mitigation strategies being implemented within recommended timeframes to bring radon concentrations to within acceptable limits? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** Serious health hazards are present where radon concentrations exceed 200 Bq/m3. If levels are detected below 200 Bq/m³ no further testing is required unless major renovations are performed that could significantly impact airflow in the building. Other exceptions include change of use in the lowest-occupied levels.<br>**Requirements:** Where radon concentrations have been detected between 200 and 600 Bq/m3, remedial action must be taken within two (2) years of detection. For radon concentrations above 600 Bq/m3, remedial action must be taken within one (1) year of detection.<br>Applicants implementing remedial strategies at the time of BOMA BEST verification must provide a copy of the mitigation strategy plan signed by an individual certified by the Canadian National Radon Proficiency Program (C-NRPP) and demonstrate that the mitigation strategies (such as active soil depressurization and mechanical ventilation) are being implemented within the required timeframe (specified above).<br>Applicants who have previously implemented mitigation strategies must demonstrate that re-testing has occurred, including testing of all pre-mitigation locations *at a minimum*, following Health Canada Guidelines, with no results greater than 200 Bq/m3. Results from the post-mitigation re-testing must be signed by an individual certified by C-NRPP.<br>**Additional Information:** It should be noted that, while the health risk from exposure at levels below 200 Bq/m3 is small, it may be possible to reduce it even further through remediation. | |
| **Scoring** | Yes | 9/9 |
| | No | 0/9 |

## 5.4 BUILDING SYSTEMS

| 05.04.01 | Are secondary containment measures in place in base-building areas where chemicals are stored and/or used? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** Secondary containment measures such as spill berms should be employed in areas where chemicals are used and stored (such as in mechanical rooms) to prevent chemicals from entering drains and/or sewers.<br>**Requirements:** Secondary containment is required for all areas of chemical storage such as janitorial storage, water treatment chemical tanks, etc. At a minimum, the uniform fire code mandates that secondary containment exist where individual containers hold 55 gallons or more, or where the aggregate capacity of multiple containers is 100 gallons or more.<br>OSHA specifies that secondary containment should be sufficient to carry 10% of the aggregate capacity of multiple containers, or 100% of the largest container, whichever is greater.<br>Tenants must be encouraged to disclose the storage/use of chemicals on-site (may be required in their lease agreement) and where present, the building owner/manager must provide information on how to implement secondary containment measures.<br>**Additional Information:** Select Not Applicable if no chemical products are stored on the property. | |
| **Scoring** | Yes | 10/10 |
| | No | 0/10 |
| | N/A | 0/0 |

## 5.5 INNOVATION

| 05.05.01 | Are features that attempt to simulate the natural environment installed in commonly occupied base-building areas? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** The biophilia hypothesis suggests there is an instinctive connection between human beings and other living systems. Regular connection with nature can improve experience, mood and happiness. In the built environment, this translates to the incorporation of natural features such as wood and plant life in the building. To be effective, these natural features must be visible to as many occupants as possible such as in entryways, lobbies, cafeterias, food courts, and in the atrium.<br>**Requirements:** Acceptable features must be large in scale, such as green walls (not individual potted plants), large plants (such as trees), decorative water fountains and aquariums.<br>For all innovation questions, if you are unable to answer "Yes", select "Not Applicable" instead. No points will be lost. | |
| **Scoring** | Yes | 6/6 |
| | N/A | 0/0 |

| 05.05.02 | Is the building currently Fitwel certified? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** Design, operations, and quality of the built environment can have a positive impact on population health. Fitwel certification supports healthier workplace and multifamily residential environments, improving occupant health and productivity by addressing a broad range of health behaviours and risks.<br>**Requirements:** The building must have achieved a Fitwel certification for a recognized Project Type (either "multi-tenant base building", "multi-tenant whole building" or "single-tenant building" – "commercial interior spaces" is *not* eligible). The building must be currently certified with Fitwel at the time of the BOMA BEST verification, as demonstrated by the Fitwel Certificate.<br>**Additional Information:** For more information, contact info@bomabest.org<br>For all innovation questions, if you are unable to answer "Yes", select "Not Applicable" instead. No points will be lost. | |
| **Scoring** | Yes - 3 Star | 16/16 |
| | Yes - 2 Star | 12/12 |
| | Yes - 1 Star | 8/8 |
| | N/A | 0/0 |

# 6. PURCHASING

## 6.1 DEMONSTRATION OF INTENT

| 06.01.01 | Is an environmental procurement program in place at the building that includes the following components? |
|---|---|
| **Explanation & Evaluation** | **Description:** An environmental procurement program is a tangible way of expressing commitment to environmental conservation and human health.<br>**Requirements:** Develop an environmental procurement program that identifies environmentally preferable alternatives for many or all of the types of products used in buildings.<br>Demonstration of implementation is required. The program can be common to a portfolio or campus of buildings however implementation must be building-specific.<br>**Additional Information:** Preferred products are those that decrease the environmental impact of one aspect (for example, reduction in chemicals in cleaning) while not worsening the impact in another (for example, water). Such products are typically identified thanks to a third-party certification label attesting to their improved environmental performance. These certifications are applied to products and services that have been independently certified to meet strict environmental standards that reflect the entire life cycle – from manufacturing to disposal.<br>The program scope can be building-specific or can apply at the corporate or campus-wide level. |

| 06.01.02 | Cleaning products and supplies | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** Environmentally friendly cleaning, products and supplies avoid using ingredients that are toxic or cannot be responsibly renewed.<br>**Requirements:** Cleaning products and supplies used inside the building must meet the following requirements:<br>• At least 75% of the indoor cleaning products and supplies must be certified by EcoLogo, Green Seal, US EPA Safer Choice, GREENGUARD, Forest Stewardship Council (FSC), Sustainable Forestry Initiative (SFI), or Sustainable Forest Management Standard (SFMI), as demonstrated by providing the inventory of all in-use, base building cleaning products along with their third-party certification status; AND<br>• Cleaning products and supplies must be used per manufacturer's specifications to achieve their stated environmental objectives, for example as demonstrated via standard operating procedures defining their correct use.<br>Where custodial services are contracted, the contracted company must provide the building/manager with documentation showing that they meet the same requirements listed here.<br>**Additional Information:** Cleaning products and supplies include: sanitary paper products, hard surface cleaners, hard floor care products, urinal blocks, hand cleaners, cleaning and degreasing compounds, disinfectants and disinfectant cleaners, carpet and upholstery cleaners, odor control additives, plastic products (e.g. garbage, recycling and compost bags), and reusable microfiber cloths/rags. | |
| **Scoring** | Yes | 2/2 |
| | No | 0/2 |

| 06.01.03 | Office supplies | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** Office supplies carry a significant impact on our environment given their frequency of use and scale of use.<br>**Requirements:** At least 50% of office supplies must either carry a third-party certification from Forest Stewardship Council (FSC)-certified or meet one of the following requirements (based on the type of material: contain at least 10% post-consumer; contain at least 20% pre-consumer material; contain at least 50% rapidly renewable materials; or use only rechargeable batteries.<br>**Additional Information:** Office supplies include paper, toner cartridges, binders, batteries and desk accessories. Portable dry-cell batteries, including single use and rechargeable batteries used in radios, phones, cameras, computers, and other devices or equipment should be recycled or disposed responsibly. | |
| **Scoring** | Yes | 2/2 |
| | No | 0/2 |

| 06.01.04 | Products used for building operations and maintenance | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** Environmentally friendly building products (for operations and maintenance) are those that have been certified by a third-party.<br>**Requirements:** A least three (3) products used for building operations and maintenance must carry a third-party certification from EcoLogo, Green Seal or GreenGuard. Provide copies of purchase orders for environmentally preferable products from the past 12 months or provide a letter from the contracted provider confirming that products comply with the requirements listed here.<br>**Additional Information:** Products used in operations and maintenance include adhesives, sealants, solvents, HVAC filters, and degreasers. | |
| **Scoring** | Yes | 2/2 |
| | No | 0/2 |

| 06.01.05 | Cleaning devices and equipment | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** Environmentally friendly cleaning devices and equipment reduce the amount of water, energy and consumable cleaning products used and can reduce the spread of indoor air contaminants and infection.<br>**Requirements:** Cleaning devices and equipment used inside the building must meet the following: requirements:<br>• At least 50% of the cleaning devices and equipment must be certified by the Carpet and Rug Institute or GREENGUARD or meet California Air Resources Board (CARB) or the ISSA Cleaning Industry Management Standard (CIMS) for sound levels of less than 70 dBA for applicable equipment/devices, as demonstrated by providing the inventory of all cleaning devices and equipment used in the building along with their third-party certification status; AND<br>• Cleaning devices and equipment must be used per manufacturer's specifications to achieve their stated environmental objectives, for example as demonstrated via standard operating procedures defining their correct use.<br>Where custodial services are contracted, the contracted company must provide the building/manager with documentation showing that they meet the same requirements listed here.<br>**Additional Information:** Devices and equipment include carpet care equipment, floor machines, vacuum cleaners, water-efficient scrubbers, and equipment designed with reusable or washable components. | |
| **Scoring** | Yes | 2/2 |
| | No | 0/2 |

| 06.01.06 | Building materials used for renovations | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** Environmentally friendly building materials (for renovations) are those that have been certified by a third-party.<br>**Requirements:** Building materials must carry a third-party certification. Provide copies of purchase orders for environmentally preferable products from the past 12 months or provide a letter from the contracted provider confirming that products comply with the requirements listed here.<br>**Additional Information:** Accepted third-party certifications include: Green Seal, GreenGuard, EcoLogo, Cradle to Cradle, ENERGY STAR, WaterSense, Forest Stewardship Council (FSC), Sustainable Forestry Initiative (SFI), or the Canadian Standards Association's Sustainable Forest Management Standard (CSA's SFMI). | |
| **Scoring** | Yes | 2/2 |
| | No | 0/2 |

| 06.01.07 | Energy efficient equipment | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** Energy efficient equipment use fuel more effectively and heat or cool the fluid (air, water) to the same set point with less energy consumed relative to their lower efficiency counterparts.<br>**Requirements:** Specify in the procurement plan that when it comes time to replace equipment, they will be replaced with an energy efficient model compliant with ASHRAE 90.1 or ENERGY STAR.<br>**Additional Information:** Select Not Applicable if all energy-consuming equipment is owned, managed and maintained solely by tenants. | |
| **Scoring** | Yes | 2/2 |
| | No | 0/2 |
| | N/A | 0/0 |

| 06.01.08 | Water efficient equipment | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** Water efficient equipment use water in a more effective way relative to their less efficient counterparts.<br>**Requirements:** Specify in the procurement plan that when it comes time to replace equipment, they will be replaced with a water efficient model compliant with WaterSense or ENERGY STAR.<br>**Additional Information:** Select Not Applicable if all water-consuming equipment is owned, managed and maintained solely by tenants. | |
| **Scoring** | Yes | 2/2 |
| | No | 0/2 |
| | N/A | 0/0 |

| 06.01.09 | Does the building offer an environmental procurement program for retailers? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** Including building retailers in a facility-wide environmental procurement program provides them with the opportunity to align their actions with the building's environmental objectives.<br>**Requirements:** The environmental procurement program for retailers must include the following components:<br>1. Program Engagement:<br>• Demonstrate which strategies are used to **meaningfully** engage retailers in the building's environmental procurement program. Examples of strategies include (but are not limited to): working with retailers to integrate their existing procurement policies into the building's procurement program; developing outreach campaigns, events, or surveys to understand retailer needs regarding environmental procurement; providing the building's environmental procurement program to retailers as a template; providing ongoing education sessions on environmental procurement best practices; setting targets to measure successful engagement. AND<br>• The program must be reviewed every 12 months, at a minimum, to determine the success of any given strategy, with updates as needed.<br>2. Program Implementation:<br>• Demonstrate that retailers have put in place initiatives or programs consistent with the building's environmental procurement program. Only retailers who are actively engaged by building management will be recognized.<br>**Additional Information:** Retailers can minimize their impact in many of the same ways outlined in the building's environmental procurement program, such as by using environmentally friendly cleaning devices or products, office supplies, materials used for renovations, selecting energy and water efficient fixtures and equipment, and offering environmentally preferable merchandise/retail products.<br>Select Not Applicable if there are no retailers in the building. | |
| **Scoring** | Program engagement and implementation | 7/7 |
| | Program engagement only | 3/7 |
| | No | 0/7 |
| | N/A | 0/0 |

## 6.2 ASSESSMENT

There are no questions in this section.

## 6.3 OPERATIONS & MAINTENANCE

| 06.03.01 | Is the environmental procurement program reviewed and updated annually? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** More frequent reviews of the procurement program are encouraged. Reviewing the program at least annually is important because new products regularly come to market, third-party certifiers alter their standards, and new building systems may be installed for which a new procurement plan must be specified.<br>**Requirements:** The program must be reviewed every 12 months, at a minimum. The review must be systematic, looking at each area in turn and reassessing each selected product to confirm that after 12 months of use it is not having a negative impact on another environmental area. Should any such issue be discovered, the product can be refused and discontinued.<br>The updated version of the environmental procurement program must be properly communicated and distributed to all relevant parties.<br>**Additional Information:** Select Not Applicable if there is no environmental procurement program. | |
| **Scoring** | Yes | 5/5 |
| | No | 0/5 |
| | N/A | 0/0 |

## 6.4 BUILDING SYSTEMS

There are no questions in this section.

## 6.5 INNOVATION

There are no questions in this section.

# 7. CUSTODIAL

## 7.1 DEMONSTRATION OF INTENT

| 07.01.01 | Are details about the green cleaning initiative shared with building occupants? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** Tenants and building staff are stakeholders in the effective cleaning of the building. Sharing details about the green cleaning initiatives in place at the building will encourage feedback and generate enthusiasm for such initiatives.<br>**Requirements:** Provide occupants with details about the green cleaning initiative, such as green cleaning protocols, custodial goals, cleaning logs and Standard Operating Procedures (SOPs) where custodial services are contracted (as provided by the contractor).<br>**Additional Information:** These may be communicated in a tenant booklet, website, memorandum or posters. Cleaning logs should be made available for review upon request. Cleaning logs must include the date maintenance tasks were performed and by whom. | |
| **Scoring** | Yes | 7/7 |
| | No | 0/7 |

## 7.2 ASSESSMENT

| 07.02.01 | Is a green cleaning audit conducted annually at the building? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** Cleaning audits ensure cleanliness goals for each space are being met and that green products are being used appropriately.<br>**Requirements:** Conduct an audit every 12 months. The audit must be conducted by someone who is not affiliated with the custodial staff (such as a non-custodial staff member). The audit must include a confirmation that green products are being used appropriately and that cleanliness goals for each space are being met.<br>The audit must be conducted in general accordance with the APPA *Operational Guidelines for Educational Facilities: Custodial*, and include the following components:<br>• Identify Appearance Level<br>• Identify Standard Spaces<br>• Create Staffing Level Summary<br>• Create Inventory of each space<br>The audit must identify areas in need of improvement and will provide the building with a score, assessing the appearance level of the site. | |
| **Scoring** | Cleanliness goals are being met | 5/11 |
| | Green products are being used appropriately | 6/11 |
| | No | 0/11 |

## 7.3 OPERATIONS & MAINTENANCE

| 07.03.01 | Does building management maintain an inventory and sanitation schedule for frequently touched surfaces? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** Frequently touched surfaces such as door handles and elevator buttons can harbor bacteria and viruses for extended periods. Such surfaces should be easily cleanable, and should be sanitized with a disinfectant daily.<br>**Requirements:** A sanitation schedule must be developed which identifies frequently touched surfaces. Provide evidence of the scheduled cleaning process and cleaning frequency (at least daily) for disinfection and that the inventory includes disinfection products registered with Health Canada (DIN) and/or products certified by Ecologo. | |
| **Scoring** | Yes | 5/5 |
| | No | 0/5 |

| 07.03.02 | Are pest reduction strategies in place at the building? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** Unhygienic conditions can result in the presence and proliferation of organisms that produce harmful or irritating byproducts.<br>**Requirements:** To minimize the potential for such organisms to thrive, the following three (3) pest reduction strategies must be in place:<br>• Food storage in sealed containers with daily disposal;<br>• Proactive inspection for evidence of pests at least monthly; and<br>• The use of environmentally preferable pesticides, if necessary.<br>The pest reduction strategies must be reviewed every 12 months and updated as necessary.<br>The building owner/manager must provide information on how to implement pest reduction strategies and tenants must be encouraged to participate. | |
| **Scoring** | Yes | 9/9 |
| | No | 0/9 |

## 7.4 BUILDING SYSTEMS

| 07.04.01 | Is high efficiency cleaning equipment used in the building? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** Well-maintained, high performing cleaning equipment reduces the required amount of water, disposable cleaning products and frequency of cleaning as well as reducing the spread of indoor air contaminants.<br>**Requirements:** High efficiency cleaning equipment used inside the building must meet the following requirements:<br>• Must include at least one (1) of the following types of equipment: chemical free cleaning system or Mobile UV cleaning device or HEPA vacuums (majority of vacuums in use); AND<br>• Must be used per manufacturer's specifications to achieve their stated environmental objectives, for example as demonstrated via standard operating procedures defining their correct use.<br>Where custodial services are contracted, the contracted company must provide the building/manager with documentation showing that they meet the same requirements listed here.<br>**Additional Information:** Chemical free cleaning equipment includes, but is not limited to, devices that use ionized, ozonated, or electrolyzed water as a substitute for cleaning chemicals. | |
| **Scoring** | Yes | 13/13 |
| | No | 0/13 |

## 7.5 INNOVATION

There are no questions in this section.

# 8. WASTE

## 8.1 DEMONSTRATION OF INTENT

| 08.01.01 | Is a Waste Reduction and Diversion Policy in place at the building? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** The Waste Reduction and Diversion Policy represents a commitment from the organization or building management to continuously improve performance regarding the reduction and diversion of solid waste.<br>**Requirements:** The Policy must include a statement committing the organization or building to continuous improvement in the reduction and diversion of waste. Address the prevention, diversion, and management of solid waste generated as a result of the following:<br>• Day to day activities from all waste producing areas, including food service and retail; and<br>• Periodic events such as conferences, catered meetings and functions, training, tenant relocation activities, construction, renovation and demolition projects, fit-ups, etc.<br>The Policy (and any subsequent updates) must be dated and signed by Senior Management (an individual with decision-making abilities regarding budget expenditures).<br>**Additional Information:** Demonstration of implementation is not required, nor is building-specific information. The policy can be common to a portfolio or campus of buildings.<br>Buildings that have achieved a certification through the 3RCertified program can answer "Yes" and show their certification to the verifier. 3RCertified is a certification program for buildings in the Industrial, Commercial and Institutional (IC&I) sectors that reviews how organizations manage solid waste reduction and diversion operations. It is available across Canada. | |
| **Scoring** | Yes | 10/10 |
| | No | 0/10 |

| 08.01.02 | Is a program in place at the building to minimize construction, renovation and/or demolition waste being sent to landfill? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** Construction and demolition waste – which accounts for about 30% of Canada's disposal – can be reduced by implementing a source separation and recycling program on-site.<br>**Requirements:** The program must clearly describe the procedure for achieving waste diversion goals during future renovation. Each renovation project within the site boundary (including tenant spaces) must establish waste diversion goals, target five materials for diversion and identify waste diversion strategies to be used.<br>The program must include the following components:<br>• A Material Source Separation Plan (MSSP) so that discarded materials are sorted into corresponding bins for separation and reuse/recycling and hauled offsite by a verified hauler;<br>• Roles and Responsibilities for implementing the MSSP;<br>• Material Handling;<br>• Waste Tracking;<br>• Waste Reporting;<br>• Communications to relevant parties; and<br>• Review and update as required.<br>Demonstration of implementation is required. The program can be common to a portfolio or campus of buildings however implementation must be building-specific.<br>**Additional Information:** The program must meet the minimal requirements of the jurisdiction (e.g., 3R Code of Practice). The specifications should address the recycling of the following construction waste materials, including but not limited to:<br>• Corrugated Cardboard;<br>• Wood (treated and untreated, composite and lumber);<br>• Concrete, brick and masonry;<br>• Asphalt;<br>• Steel and other metals;<br>• Gypsum wallboard/ceiling tiles;<br>• Insulation (fiberglass, mineral, expanded polystyrene (EPS), etc.);<br>• Architectural glass;<br>• Flooring (carpet, ceramic tile, linoleum, vinyl, etc.);<br>• Plastics;<br>• Asphaltic and composite roofing products; and,<br>• General worker-generated waste.<br>The following materials should be excluded from the program (and waste diversion calculations):<br>• Hazardous materials (i.e.: lead, asbestos);<br>• Excavated materials (includes soil); and,<br>• Materials that are used as landfill cover or in a land reclamation project. | |
| **Scoring** | Yes | 8/8 |
| | No | 0/8 |

| 08.01.03 | Are communication strategies in place to promote a greater understanding of the Waste Reduction Work Plan? | |
|---|---|---|
| **Scoring** | **Description:** Given that all building occupants contribute to the generation of waste, developing and implementing ongoing, strategic communication initiatives directed to relevant parties will help ensure that the waste diversion program is successful.<br>**Requirements:** The following two (2) communication strategies must be in place:<br>• Proper and instructive signage on all waste collection containers/bins (ongoing);<br>• Up-to-date written instructions and guidance on the expectations of the collection and storage of the divertible and disposed materials to the on-site custodial staff (ongoing).<br>Demonstrate that at least one (1) additional communication strategy has been implemented. Suggestions are provided below (minimum frequency provided in brackets):<br>• Posters, emails, newsletters, web or intranet site, social media, floor maps, Earth Week and/or Waste Reduction Week events, tenant engagement events, awards programs, targeted at all users (varies, posters ongoing, bi-monthly for emails, newsletters, and sites, events bi-monthly);<br>• In person meetings with tenant groups - Green Teams (bi-monthly at a minimum);<br>• Lobby displays during events of acceptable materials in the recycling program (bi-monthly at a minimum);<br>• Materials Recycling Facility tours for tenants, and building staff (offered monthly at a minimum);<br>• Feedback on the results of the annual waste audit and initiatives in the Waste Reduction Work Plan, etc. (bi-monthly at a minimum).<br>**Additional Information:**<br>Relevant parties include any stakeholders that generate, manage, and/or dispose of solid waste on the premises, such as:<br>• Internal stakeholders: employees, tenants of all types, custodial staff and security; and<br>• External stakeholders: customers/visitors, suppliers, temporary and contract labour and other contractors, and waste and recycling service providers.<br>Buildings that have achieved a certification through the 3RCertified program can answer “Yes” and show their certification to the verifier. 3RCertified is a certification program for buildings in the Industrial, Commercial and Institutional (IC&I) sectors that reviews how organizations manage solid waste reduction and diversion operations. It is available across Canada. | |
| **Scoring** | Yes | 7/7 |
| | No | 0/7 |

## 8.2 ASSESSMENT

| 08.02.01 | What is the building's Reduce, Reuse, Recycle (3Rs) diversion rate? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** The Diversion Rate is the proportion by weight of all waste diverted from disposal (i.e. landfill or incineration) to the total weight of all waste material generated, expressed as a percentage. This number must not include contaminated waste.<br><br>The following activities are considered diversion actions: actions to prevent waste materials from being generated, actions to reduce material generation, reuse (internal or external), source-separated recycling, composting (on-site or off-site.) Materials that are treated with thermal applications (incineration or EFW) are **not** considered diverted.<br><br>The diversion rate can be determined through various methods and combinations such as hauler records, waste audit, etc.<br><br>**Requirements:**<br><br>Determine the building's diversion rate based on the following calculation: [**A** / (**A**+**B**)] x 100<br><br>**A** = Annual weight of all materials currently diverted from disposal<br><br>**B** = Annual weight of all materials currently sent for disposal (includes landfill, incineration and EFW)<br><br>Express the annual weight in metric tonnes or kilograms.<br><br>The diversion rate must be based on 12 months of data. Data cannot be older than the past three (3) years.<br><br>**Additional Information:** Only include materials for which there is an established market in the calculation.<br><br>*Annual weight of all materials currently diverted from disposal* includes daily generated waste, but also all other materials diverted from building activities such as e-waste, batteries, lamps, scrap metal, wood debris, etc., that may not be captured by the waste audit.<br><br>*Annual weight of all materials currently sent for disposal* does not include hazardous waste such as hazardous industrial waste, chemicals, PCBs, or waste that is ignitable, corrosive, reactive, pathological, leachate or radioactive. It can include construction, renovation and demolition project waste if it was also included in the waste audit. | |
| **Scoring** | 90-100% | 15/15 |
| | 80- 89.9% | 12/15 |
| | 70-79.9% | 9/15 |
| | 60-69.9% | 6/15 |
| | 50-59.9% | 3/15 |
| | 40-49.9% | 2/15 |
| | 30-39.9% | 1/15 |
| | Under 30% | 0/15 |
| | Unknown | 0/15 |

| 08.02.02 | What is the building's capture rate? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** The Capture Rate is the proportion by weight of all waste *currently* diverted from disposal (i.e. landfill or incineration) to the total weight of all waste material that *could have been* diverted, expressed as a percentage. This number must not include contaminated waste. Capture rate calculations are based on all existing opportunities to divert waste materials available in your region, not just the materials collected in the building.<br>The following activities are considered diversion actions: actions to prevent waste materials from being generated, actions to reduce material generation, reuse (internal or external), source-separated recycling, composting (on-site or off-site.) Materials that are treated with thermal applications (incineration or EFW) are **not** considered diverted.<br>**Requirements:**<br>Determine the building's capture rate based on the following calculation: [**A** / (**A**+**C**)] x 100<br>**A** = Annual weight of all materials *currently* diverted from disposal<br>**C** = Annual weight of all materials that *could have been* diverted from disposal, but were found in the stream headed for disposal<br>Express the annual weight in metric tonnes or kilograms<br>The capture rate must be based on 12 months of data. Data cannot be older than the past three (3) years.<br>**Additional Information:** Only include materials for which there is an established market in the calculation.<br>*Annual weight of all materials currently diverted from disposal* includes daily generated waste, but also all other materials diverted from building activities such as e-waste, batteries, lamps, scrap metal, wood debris, etc., that may not be captured by the waste audit.<br>*Annual weight of all materials that could have been diverted from disposal* includes the same as the above however these materials were found in the stream headed for disposal. | |
| **Scoring** | 90-100% | 10/10 |
| | 80%- 89.9% | 8/10 |
| | 70-79.9% | 6/10 |
| | 60-69.9% | 4/10 |
| | 50-59.9% | 2/10 |
| | Under 50% | 0/10 |
| | Unknown | 0/10 |

| 08.02.03 | Is there evidence of a reduction in the overall generation of waste relative to your baseline year? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** To understand whether an initiative is producing results, it is important to compare waste data from the most recent audit year to baseline data.<br>**Requirements:** Review the total waste generated from the most recent previous waste audit (the baseline) and compare these numbers to the most current waste audit conducted no later than three (3) years prior to the application date.<br>**Additional Information:** In some cases, reduction levels cannot be easily demonstrated due to an increase in the number of tenants or occupants in the building. In such cases, use per capita generation rates (also called waste intensity) to determine overall reduction. Per capita generation is calculated by taking the total annual waste generated (waste destined for disposal, reuse or recycling) and dividing this by the number of building occupants. Daily per capita generation rates are determined by dividing by the number of working days per year. An improvement in waste diversion rates is not sufficient unless it is also accompanied by a reduction in the total overall generation of waste.<br>Select Not Applicable if the most recent waste audit is considered the baseline. | |
| **Scoring** | Yes | 6/6 |
| | No | 0/6 |
| | N/A | 0/0 |

## 8.3 OPERATIONS & MAINTENANCE

| 08.03.01 | Are any of the following waste diversion initiatives in place at the building? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** Reduction initiatives encourage staff/tenant participation in waste diversion activities.<br>**Requirements:** Demonstrate that waste diversion initiatives have been implemented in the building.<br>**Additional Information:** Select all that apply.<br>Reduction initiatives can include but are not limited to:<br>• Purchasing policies and initiatives that result in reduced waste thanks to a reduction of packaging at source or by investing in products that have a longer life (e.g., filters for HVAC).<br>• Electronic communication initiatives that result in a reduction of paper use.<br>• Bulk dispensing in building staff/tenant kitchenettes or in cafeterias and other food service areas that minimize the use of single use disposable items.<br>• Food waste reduction or diversion programs with on-site cafeterias, restaurants or coffee shops.<br>• Use of china and reusable utensils as an option for patrons in the building cafeteria, food court and office kitchenettes.<br>• Implementing a paper use accountability system.<br>• Clauses in supplier contracts that require "take back" programs where the supplier can guarantee that at least 70% of the returned products will be diverted from landfill.<br>• The installation of carpet tiles that eliminate the need to replace entire carpets.<br>Reduction programs can be initiated by either building management or the tenants. | |
| **Scoring** | Packaging reduction | 4/24 |
| | Electronic communication | 4/24 |
| | Bulk dispensers | 4/24 |
| | Food waste diversion | 4/24 |
| | Reusable china and utensils | 4/24 |
| | Paper accountability system | 4/24 |
| | Take back programs | 4/24 |
| | Removable carpet tiles | 4/24 |
| | Other | 4/24 |
| | None | 0/24 |

| 08.03.02 | Has the recycling program been expanded to include any of the following waste materials? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** In addition to the typical list of designated materials for source separation that most regions accept for recycling (paper, containers, cardboard) or composting (food waste) many organizations expand their collection programs to include other reusable/recyclable materials (where a demonstrated end-market exists).<br>**Requirements:** Demonstrate that the recycling program for additional materials has been implemented.<br>**Additional Information:** Tenant-led collection initiatives may also qualify if building management is taking steps to publicize the initiative building-wide. | |
| **Scoring** | Batteries | 2/16 |
| | Electronics | 2/16 |
| | Ballasts, fluorescent tubes, CFL and lamps containing mercury | 2/16 |
| | Coffee cups | 2/16 |
| | Coffee pods | 2/16 |
| | Organic food material for composting (if not already offered by the municipality) | 2/16 |
| | Low grade paper | 2/16 |
| | Grease/cooking oil | 2/16 |
| | Toner cartridges | 2/16 |
| | Wood | 2/16 |
| | Scrap metal | 2/16 |
| | Furniture | 2/16 |
| | Merchandise bulk packaging (shrink wrap, Styrofoam) | 2/16 |
| | Other waste material | 2/16 |
| | None | 0/16 |

| 08.03.03 | Are reuse initiatives in place at the building that have the potential to result in less waste disposed? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** To reuse is to use an item for the second (or third) time either for the same function or in another application.<br>**Requirements:** Demonstrate that at least one (1) reuse initiative has been implemented.<br>**Additional Information:**<br>Some examples of reuse include but are not limited to:<br>• The establishment of a Reuse Centre to put usable office supplies back into circulation, such as file folders, binders, etc.<br>• Community reuse partnerships with charities and other organizations for the reuse of obsolete items, such as furniture and fixtures.<br>• Waste exchanges internal to the organization, such as reusing furniture, computers or other obsolete items within the portfolio of buildings.<br>• The use of reusable shipping containers to send or receive goods and supplies.<br>Reuse programs can be initiated by either the building management or the tenants. | |
| **Scoring** | Yes | 8/8 |
| | No | 0/8 |

## 8.4 BUILDING SYSTEMS

There are no questions in this section.

## 8.5 INNOVATION

| 08.05.01 | Are recycling bins provided to staff, tenants and visitors for point of generation collection throughout the building? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** Provide waste and recycling bins at points of generation throughout the building in areas such as offices, kitchens, copy and print rooms, boardrooms and washrooms.<br>**Requirements:** Central bins must capture the following materials separately:<br>• Paper/newspaper/magazines;<br>• Cans/glass/plastics (#1, 2, 5, 6, other);<br>• Waste destined for disposal.<br>These bins must be accessible throughout the building at frequent enough intervals to accommodate the number of occupants and visitors to the building.<br>In office areas, provide two deskside bins at a minimum, one for paper and one for cans/glass/plastic. Copy and print rooms must capture paper separately from waste destined for disposal.<br>Food courts and cafeterias must capture the following materials separately:<br>• Cans/glass/plastics (#1, 2, 5, 6, other);<br>• Compost (if such a program is in place at the building);<br>• Waste destined for disposal.<br>All bins, in all space types, must have clear signage/labelling showing what specific items can be placed in the bin (must match what can be diverted in that area).<br>Provide training to tenants (e.g. as part of initial welcome package) and update the training as required. Provide training to custodial staff at inception of recycling program, and upon staff turnover. Update training as required.<br>In the case where tenants are solely responsible for waste management, then the property manager must provide communication to tenants via email. Communications may include (but are not limited to): the property's Waste Reduction and Diversion Policy, newsletters promoting recycling, etc. Frequency of communications should be quarterly at a minimum.<br>**Additional Information:** Bins can be emptied in two ways: either the occupant is responsible for emptying deskside bins into central bins or the custodial staff empties the deskside bins. In case of the latter, the custodial staff must be equipped with appropriate bags to ensure source-separated materials remain separated upon collection.<br>For all innovation questions, if you are unable to answer "Yes", select "Not Applicable" instead. No points will be lost. | |
| **Scoring** | Yes | 12/12 |
| | N/A | 0/0 |

| 08.05.02 | Are other measures in place in the building to improve waste diversion? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** Innovation in waste management requires going beyond standard 3Rs initiatives.<br>**Requirements:** Demonstrate that at least one (1) initiative has been put in place.<br>**Additional Information:**<br>Some examples include but are not limited to:<br>• Specification clauses in waste and recycling hauler contracts requiring weight reporting on the materials removed from the site for reuse, recycling, composting or disposal;<br>• Unique waste collection or processes to minimize waste disposal to landfill. Examples include an on-site dehydrator for food waste or water bottle ban with a water filtration station supplied in common area or kitchenettes, or scullery in a cafeteria or food court.<br>• Specification clauses in tenant leases outlining the expectations for tenants to fully participate in any and all building waste diversion efforts.<br>• Documented expectations for tenants to provide building management with annual weights for materials diverted from landfill that are tenant managed, example: off-site shredding and recycling of confidential documents;<br>• Waste diversion protocol for the provision of additional containers/bins and signage to capture recyclables during moves and other relocation activities;<br>• Use of reusable eat-in food containers/cutlery or compostable take-out containers/cutlery in the building cafeteria. In the case of compostable containers/cutlery demonstrate that there is a composting program (private or municipal) in place that can accept these materials specifically.<br>• Use of radio-frequency identification (RFID) technology to reliably identify individual receptacles, providing assurance that they have been collected.<br>For all innovation questions, if you are unable to answer “Yes”, select “Not Applicable” instead. No points will be lost. | |
| **Scoring** | Yes | 21/21 |
| | N/A | 0/0 |

| 08.05.03 | Has the final disposition/destination been identified of at least three (3) materials removed from the site for reuse, recycling, composting or disposal? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** Waste is only reduced from landfill when materials are successfully diverted. Transparency from supplier operations can help ensure this is the case.<br>**Requirements:** Provide documentation on the following points:<br>• Name of the waste management company with whom there is a contract or agreement to collect source separated materials from the building. The Waste Management service provider must have provincial regulatory approval to process the collected materials from the building site. Provide a copy of the contract/agreement for each company and if applicable, their Environmental Compliance Approval-ECA or Environmental Activity and Sector Registry registration number.<br>• Location where the recyclable materials are being sent. Provide a letter including the name, location and ECA, if applicable, of each receiving facility.<br>• Details on where recyclables and waste are going beyond the Materials Recycling Facility – for example, the name, location and ECA, if applicable, of any other processing/remanufacturing facilities.<br>• Reject and recycling percentage of recycling facilities.<br>Documentation on points listed here must be available for each waste management company retained to remove source separated material from the building site.<br>For all innovation questions, if you are unable to answer "Yes", select "Not Applicable" instead. No points will be lost. | |
| **Scoring** | Yes | 9/9 |
| | N/A | 0/0 |

# 9. SITE

## 9.1 DEMONSTRATION OF INTENT

| 09.01.01 | Is a landscape management program in place for the building that includes the following considerations? |
|---|---|
| **Explanation & Evaluation** | **Description:** How a building manages its landscaped areas through mowing and fertilization practices can have an impact on the surrounding environment (e.g., the persistence of invasive species; the release of harmful chemicals and toxins into the environment such as pesticides, fertilizers and herbicides; and on resource use like water).<br>**Requirements:** The management of turf and garden areas must follow a plan that understands and works with the agronomic needs of the plants. Other key components of the program include proper use of irrigation, using site appropriate landscape plants and the use of herbicides and pesticides only when appropriate based on growth cycles of the pests or weeds. This program must be communicated to and followed by all relevant building staff and contractors/service providers.<br>Demonstration of implementation is required. The program can be common to a portfolio or campus of buildings however implementation must be building-specific.<br>**Additional Information:** Select Not Applicable if 5% or less of the property is permeable. Provide evidence of the lack of landscaping (e.g., site map). |

| 09.01.02 | Use of native species | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** Maximize the use of native and drought resistant plant species.<br>**Requirements:** Demonstrate that native species are selected above other plant species for use in landscaping.<br>**Additional Information:** Using native and drought resistant plant species for landscaping is beneficial because they support the needs of local wildlife populations (some wildlife populations are entirely dependent upon specific native plants to survive, such as many species of butterfly). Native species may require less care than non-native plant species as they are better adapted to local environmental conditions, and they act as a source of seeds to keep local natural areas populated with native plants. Obtain Planting Plan/Landscape Plan from Architect highlighting plant types and locations on building site or refer to local conservation authority for plan directory and characteristics. | |
| **Scoring** | Yes | 2/2 |
| | No | 0/2 |
| | N/A | 0/0 |

| 09.01.03 | Protect and/or restore habitat | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** Landscaping – even in urban areas – can help to protect or restore important habitat for local wildlife species. Buildings have an opportunity to provide connectivity between larger natural landscapes or contribute to habitat patches that can aid in habitat migrations and provide important refuges for wildlife.<br>**Requirements:** Demonstrate that efforts are being made to protect or restore habitat for specific species.<br>**Additional Information:** Selecting plants that are specifically attractive for pollinators (such as bees) can help ensure species proliferation and ecosystem health. Obtain Planting Plan/Landscape Plan from Architect highlighting plant types and locations on building site or refer to local conservation authority for plan directory and characteristics. | |
| **Scoring** | Yes | 2/2 |
| | No | 0/2 |
| | N/A | 0/0 |

| 09.01.04 | Control or removal of invasive/non-native species | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** Invasive species are all non-indigenous or non-native flora and fauna that have been deliberately or accidentally introduced to an area where they are not naturally found. Invasive species have an adverse effect on the habitats they invade. These species compete for space, nutrients and water, ultimately outcompeting local or native species, and reducing biodiversity.<br>**Requirements:** Demonstrate that strategies are in place to control or remove invasive and non-native species.<br>**Additional Information:** Building managers can do their part to control or manage the spread of invasive species by only using indigenous species in landscaping, and removing any non-native species that enter landscaped areas. | |
| **Scoring** | Yes | 2/2 |
| | No | 0/2 |
| | N/A | 0/0 |

| 09.01.05 | Use of non-chemical control measures followed by environmentally preferable pesticides, fertilizers, and herbicides | |
|---|---|---|
| **Explanation & Evaluation** | Broad-spectrum application of pesticides, fertilizers, and herbicides has significant impacts on the health of the landscape and the runoff of harmful chemicals into the environment. Building managers can reduce non-point source pollution by focusing on using non-chemical control methods. When chemical options are used, these should be low in toxicity and persistence. Their use should be part of an overall landscape management plan.<br>**Requirements:** To be considered eligible, demonstrate the following elements:<br>1. Inventory of all pests present on-site; AND<br>2. List of all non-chemical control measures used to control targeted organisms. Before any chemicals are applied, demonstrate that non-chemical control measures are utilized. These include (but are not limited to):<br>• Planting naturally pest-resistant species (refer to local conservation authority for plant directory);<br>• Pruning infested areas of plants;<br>• Hand cultivation of weeds before they go to seed (avoiding disturbing soil more than necessary, which can bring more weeds to the surface);<br>• Leaving grass clippings in place to reduce fertilizer (especially nitrogen);<br>• Aerating in spring and fall to physically break up thatch, unhealthy quantities of which can harbor insects and diseases;<br>• Composting to add macro- and micro-nutrients to the soil (reducing the need for fertilizer) and increase microbial activity that will decompose thatch;<br>• Over-seeding to create a dense turf to crowd out weeds;<br>• Mowing at a cutting height of 7.5 cm to shade sun-loving weeds and encourage grass root development (low mowing encourages weed invasion);<br>• Mulching using compost created via an in-house system (e.g., tumbler or composter). AND<br>3. Inventory of all acceptable chemical pesticides, herbicides, and fertilizers used to control targeted organisms (if still warranted).<br>• Pesticides or herbicides: Product label must meet the three following requirements 1) includes no signal words worse than “caution” (such as “danger” or “warning”), 2) contains no warning or mention about toxicity to ecosystems (e.g., soil, water) or wildlife (birds, aquatic life, bees, wildlife), and 3) is not specified as being for “Restricted Use”.<br>• Fertilizers: Products must be included in the Organic Materials Review Institute (OMRI) Canada Products List©.<br>Where landscaping services are contracted, the contracted company must provide the building manager with documentation showing that they meet the same requirements outlined here.<br>**Additional Information:**<br>Organic Materials Review Institute Canada: https://www.omri.org/canada-list | |
| **Scoring** | Yes | 2/2 |
| | No | 0/2 |
| | N/A | 0/0 |

| 09.01.06 | Is there a hardscape management program in place for the building that includes the following considerations? |
|---|---|
| **Explanation & Evaluation** | **Description:** Building managers must have a clear plan in place to address the regular cleaning and maintenance of the building's facade and hardscape areas. Proper hardscape management can have a tremendous impact on the surrounding environment (e.g., release of chemicals and toxins into the environment), safety (e.g., slips due to ice build-up), and the building's overall aesthetic/street appeal.<br>**Requirements:** Create a Hardscape Management Program. The program must be reviewed every 12 months and be available to all relevant building staff, contractors or service providers.<br>Demonstration of implementation is required. The program can be common to a portfolio or campus of buildings however implementation must be building-specific.<br>**Additional Information:** Select Not Applicable if there is no hardscape for which the property owner is responsible. Provide evidence of the lack of hardscape (e.g., site map). |

| 09.01.07 | Regular cleaning of hardscape areas such as sidewalks, pavement, parking garages, parking lots | |
|---|---|---|
| **Explanation & Evaluation** | **Requirements:** Demonstrate that regular cleaning of the building's hardscape is occurring. Provide rationale for how cleaning frequency was determined. | |
| **Scoring** | Yes | 2/2 |
| | No | 0/2 |
| | N/A | 0/0 |

| 09.01.08 | Regular cleaning of the building's exterior facade | |
|---|---|---|
| **Explanation & Evaluation** | **Requirements:** Demonstrate that regular cleaning of the building's exterior facade is occurring. Provide rationale for how cleaning frequency was determined. | |
| **Scoring** | Yes | 2/2 |
| | No | 0/2 |

| 09.01.09 | Use of environmentally preferable cleaning chemicals | |
|---|---|---|
| **Explanation & Evaluation** | **Requirements:** Where possible, the use of cleaning chemicals should be minimized. When cleaning chemicals are required, these must have obtained a third-party certification from EcoLogo or Green Seal. | |
| **Scoring** | Yes | 2/2 |
| | No | 0/2 |
| | N/A | 0/0 |

| 09.01.10 | Use of environmentally preferable maintenance equipment | |
|---|---|---|
| **Explanation & Evaluation** | **Requirements:** Specify the use of manual cleaning strategies wherever possible. If equipment is necessary, these must be energy and water efficient. If powered equipment is necessary, it must operate with a sound level of less than 70 dBA and be compliant with ENERGY STAR (where possible). Propane-powered equipment must have high-efficiency, low emission engines. Battery-powered equipment must be equipped with environmentally-preferable gel batteries. Powered equipment must be ergonomically designed to minimize vibration, noise and user fatigue. Equipment dependent on water must use water efficiently or use non-potable water where possible. Carefully monitor the landscape to avoid excessive water runoff.<br>**Additional Information:** ENERGY STAR qualified products include: sweepers, mowers, outdoor vacuums and other equipment used to clean and maintain hardscapes, landscaping, or the building exterior. | |
| **Scoring** | Yes | 2/2 |
| | No | 0/2 |
| | N/A | 0/0 |

| 09.01.11 | Use of environmentally preferred snow and ice melting products | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** Selecting environmentally preferable de-icing products reduces the adverse impacts on neighbouring soils, vegetation and waterways of such applications.<br>**Requirements:** Specify the use of environmentally preferable de-icing agents for hardscape (parking, walkways, etc.). De-icing agents must have a working temperature of -7°C or below and contain no added chloride (such as magnesium chloride or calcium chloride). Organic products (e.g., beet juice, Organic Melt or equivalent) are recommended. Materials may be brines or solid de-icers that are pre-treated or pre-wetted.<br>**Additional Information:** Select Not Applicable if 1) Snow and ice removal is not applicable due to climate conditions (and provide evidence of the climate in which the building is located to demonstrate that there would be no snow and ice requiring removal, e.g., regional weather maps/reports); OR 2) If the property owner is not responsible for any hardscape. Provide evidence of the lack of hardscape (e.g., site map). | |
| **Scoring** | Yes | 2/2 |
| | No | 0/2 |
| | N/A | 0/0 |

| 09.01.12 | Are de-icing agents appropriately applied? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** To increase accessibility and reduce the risk of slips, falls and other ice-related accidents, the application of salt in excess of what is needed drives up the price of winter maintenance contracts, accelerates corrosion of building infrastructure and adversely impacts neighbouring soils, vegetation and waterways.<br>**Requirements:** The de-icing agent must be applied by staff or contractors trained to operate calibrated closed-loop ground speed controllers that automatically adjust salt application based on ground speed and spreader discharge. Using properly calibrated salt spreading equipment can help ensure that when salt is applied that it is done in appropriate quantities while still providing a safe surface for building visitors, tenants and staff. Target average application rates of 4.8 Kg/100$m^2$, considering the auger drop rate, spinner spread span, and the speed of the truck.<br>Demonstrate effective calibration by providing records showing that calibration is performed based on auger drop rate, spinner spread span, and the speed of the truck. Calibration must be reviewed annually when the equipment is being readied for a new season. Evidence of properly calibrated equipment can be provided by performing a drop test.<br>If de-icing agents must be applied manually, because the area is small and ground speed controllers cannot be used, measurement markings must be applied to the de-icing containers to ensure that overuse is not occurring.<br>**Additional Information:** Ground speed controllers can be adjusted to increase or decrease the amount of salt being discharged to suit weather conditions and level of service demands for any given site.<br>Select Not Applicable if 1) Snow and ice removal is not applicable due to climate conditions (and provide evidence of the climate in which the building is located to demonstrate that there would be no snow and ice that would require to be removed—e.g., regional weather maps/reports); OR 2) If the property owner is not responsible for any hardscape. Provide evidence of the lack of hardscape (e.g., site map).<br>Salt Application Verified Equipment Program <www.savesalt.ca><br>Snow and Ice Management Association <http://www.sima.org/><br>Smart about Salt <http://www.smartaboutsalt.com/> | |
| **Scoring** | Yes | 2/2 |
| | No | 0/2 |
| | N/A | 0/0 |

| 09.01.13 | Has a resilience or business continuity plan been prepared for the building that includes the following components? |
|---|---|
| **Explanation & Evaluation** | **Description:** A *Business Continuity Plan* or *Resilience Plan* is a plan that outlines how a building or campus will continue to run despite adverse events. A good continuity plan will address both short-term risks (e.g., floods, fires), and long-term changes that could impact the operating environment (e.g., long-term temperature and precipitation changes brought on by climate change).<br>**Requirements:** Develop a Resilience or Business Continuity Plan for the building.<br>Although demonstration of implementation is preferable, it is not necessary. The plan can be common to a portfolio or campus of buildings however some building-specific information is required.<br>**Additional Information:** Buildings/campuses/organizations with robust resilience or business continuity plans are far more prepared to deal with emergency situation, and are therefore more likely to continue operating successfully over the short- and long-terms.<br>More information on business continuity planning is available from Public Safety Canada: A Guide to Business Continuity Planning <http://www.publicsafety.gc.ca/cnt/rsrcs/pblctns/bsnss-cntnt-plnnng/index-eng.aspx> |

| 09.01.14 | A long-term climate change risk assessment | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** Climate change is anticipated to have lasting impacts on all aspects of the natural and built environments. It is important for building management to be aware of the potential impacts of climate change on the building or campus.<br>**Requirements:** Include a long-term climate change risk assessment into the Resilience or Business Continuity Plan. List all potential long-term risks to the building in the face of climate change as well as management's assessment of how they might apply to the building/campus/organization as a whole.<br>**Additional Information:** Long-term climate change impacts include: changes in long-term weather patterns (e.g., precipitation and temperature); changes in the frequency of extreme weather events and natural hazards; rising sea levels; and increased desertification. These anticipated impacts can alter a building's ability to function and perform as it was originally designed to do. Failure of assets to perform in altered conditions can cause serious consequences for the tenants and communities that rely on them, and can negatively impact the building owner and manager. | |
| **Scoring** | Yes | 5/5 |
| | No | 0/5 |

| 09.01.15 | An adaptation plan based on assessed long-term climate risks | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** Once a long-term climate impact assessment has been completed and the long-term potential risks have been identified for the building or campus, it is important to develop plans to adapt to these expected future risks, this will build *adaptive capacity*.<br>**Requirements:** Incorporate an adaptation plan to long-term risks into the Resilience or Business Continuity Plan. Identify adaptation measures that will be taken, and design features implemented to address potential consequences of long term climate change (i.e. extreme weather events, water scarcity, increase in ambient temperature, etc.)<br>**Additional Information:** Adaptive capacity should be incorporated into the building envelope, building systems and services so that they can cope in an altered future state brought on by climate change. *Adaptive capacity* means the system can respond to changing conditions over time to better withstand them. Flexibility is a key part of adaptive capacity. Redundancy (from backup systems or decentralized distributed networks) helps systems maintain functionality even if one component fails.<br>Adaptation strategies may include any or all of the following: structural changes to the building (e.g., enhance the durability of the building, improve the insulation of the envelope), systems changes (e.g., mixed mode ventilation, advanced BAS systems to expand the range of conditions in which the building can function properly), implementation of environmentally preferable systems such as green or cool roofs, or decentralizing vital systems.<br>Adaptation planning is not the same as emergency preparedness which focuses more on short-term risks rather than long-term changes, though the two can be developed in tandem as there is likely to be overlap. | |
| **Scoring** | Yes | 5/5 |
| | No | 0/5 |

| 09.01.16 | A short-term hazard assessment | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** In addition to looking at long-term climate change risks, buildings are also subject to a range of potential short-term risks that may include any or all of the following: wildfires, floods, tornadoes, hurricanes, earthquakes, tsunamis and man-made hazards (e.g., pandemics).<br>**Requirements:** Incorporate short term hazard assessment in the Resilience or Business Continuity Plan. The short-term hazard assessment must include a thorough list of all likely natural and human induced hazards in the building area and their direct and indirect impacts.<br>**Additional Information:** Building management should consider which types of natural and man-made hazards are potential threats in the area, and should conduct research to ascertain the potential frequency and severity of each. Direct effects include: flooding, wildfires, high wind speeds and lightning. Indirect effects include: loss of power supply caused by the disaster or disruptions in availability of key resources of these disasters. | |
| **Scoring** | Yes | 5/5 |
| | No | 0/5 |

| 09.01.17 | Plans to safeguard against potential short-term hazards | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** Once a short-term hazards assessment has been undertaken for the building or campus, it is important for management to develop plans to safeguard against these potential hazards.<br>**Requirements:** Incorporate adaptation plans to protect against short-term hazards in the Resilience or Business Continuity Plan. Identify adaptation measures that will be taken, and design features implemented to address potential consequences of short-term hazards.<br>**Additional Information:** Plans should include emergency response, disaster recovery, crisis management and communication, training, testing, maintenance, awareness. | |
| **Scoring** | Yes | 5/5 |
| | No | 0/5 |

| 09.01.18 | Has the Resilience Plan been reviewed, signed, and dated by senior management within the last three (3) years? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** Regular review of the building or campus' resilience plan is an important quality assurance technique. A review of the plan should assess the plan's accuracy and effectiveness, as well as its ongoing relevance. Even if the plan doesn't change, a regular review should be undertaken.<br>**Requirements:** Review and update the plan and its components at a minimum every three (3) years. It should also be reviewed after any substantial changes to the building or management takes place, when new threats or risks to the building emerge, or after a training exercise occurs to incorporate findings/lessons learned.<br>The resilience plan must be signed and dated to signal that the current one is in place.<br>**Additional Information:** Senior management is someone with decision-making abilities on the topics raised in the plan.<br>Select Not Applicable if there is no resilience plan in place at the building. | |
| **Scoring** | Yes | 3/3 |
| | No | 0/3 |
| | N/A | 0/0 |

## 9.2 ASSESSMENT

| 09.02.01 | Has a property condition assessment (PCA) report been completed for this building within the past five (5) years? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** A PCA Report incorporates the expected life of the building and all of its components and systems under specific conditions. This includes the envelope, roofing, windows, interior and exterior mechanical systems and other major building equipment.<br>**Requirements:** Conduct a Property Condition Assessment for all building systems. The report must contain a list of Tactical and Strategic items. This report must be completed by a qualified third-party who has had training in building assessment and is able to do the work relative to ASTM E2018-08 and CSA Z320 standards.<br>A Property Condition Assessment update is valid if performed within the last 12 months or as major system changes have occurred. The update must include an inspection of all building systems identified in the initial assessment, and provide an update on their condition.<br>**Additional Information:** This report is used to gather a better understanding of how the building is operating in its present state and how funds need to be saved and/or allocated to repair or replace various items. Tactical items are those that will require attention within the first five (5) years of the report's completion, whereas Strategic items are those that are looked at after five (5) years and are typically reviewed in the ten (10) year capital asset management plan.<br>Select Not Applicable if the building was constructed within the past five (5) years. | |
| **Scoring** | Yes | 10/10 |
| | No | 0/10 |
| | N/A | 0/0 |

| 09.02.02 | Has an environmental site assessment been completed for the property? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** Where hazardous conditions exist, controls must be in place to prevent and control migration of contaminants into the building or surrounding environment.<br>**Requirements:** Identify the presence of contaminants sub-grade to the building through the completion of a Phase I or Phase II environmental site assessment in accordance with CSA Standards Z768 and Z769 or ASTM Standards 1527 or 1903.<br>The environmental site assessment must have been completed at the most recent of the following moments: since the time of acquiring ownership of the property; or if the use of the property has changed (i.e. change from industrial use to residential); or if the building footprint has increased or decreased (i.e. building construction or demolition) for which municipal approval and permitting is required. | |
| **Scoring** | Yes | 10/10 |
| | No | 0/10 |

| 09.02.03 | Are measures in place to calculate building occupancy? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** Information on what time, and how many, people enter the building can be used to optimize HVAC system operations or be used in heat load calculations. Counters can be used to monitor where the majority of traffic is located; information which can further optimize system operations.<br>**Requirements:** Building management must have in place a means to understand how many occupants and visitors (if applicable) are in the building during a given week.<br>**Additional Information:** Various methods exist such as traffic counters, visitor registrations, etc. | |
| **Scoring** | Yes | 2/2 |
| | No | 0/2 |

## 9.3 OPERATIONS & MAINTENANCE

| 09.03.01 | Have steps been taken to address the issues identified in the Property Condition Assessment Report? | |
|---|---|---|
| **Explanation & Evaluation** | **Requirements:** Demonstrate that action has been taken regarding items identified in the Property Condition Assessment (PCA) Report or that issues have been integrated into the Capital Plan, to be addressed in the future. The Capital Plan must include a dedicated budget line and timeline for completion for a given PCA item.<br>**Additional Information:** Select Not Applicable if no issues were reported in the PCA or if no PCA was performed. | |
| **Scoring** | Yes | 10/10 |
| | No | 0/10 |
| | N/A | 0/0 |

| 09.03.02 | Are controls in place to address migration of known soil/groundwater contaminants into the building? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** Where hazardous conditions exist, controls must be in place to prevent and control migration of contaminants into the building.<br>**Requirements:** Demonstrate that control measures are in place and monitored to mitigate the migration of contaminants into the building. Control measures include the use of building pressures, or sub-slab pressure control (to control hydrocarbon vapour migration).<br>**Additional Information:** Select Not Applicable if there are no known soil/groundwater contaminants based on the Phase I or II environmental site assessment. | |
| **Scoring** | Yes | 8/8 |
| | No | 0/8 |
| | N/A | 0/0 |

| 09.03.03 | Are high albedo surfaces cleaned regularly to maintain effective solar reflectance? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** High albedo surfaces (i.e. white) have a higher solar reflectance index (SRI) than dark surfaces. They must be cleaned regularly to maintain reflectance.<br>**Requirements:** Demonstrate that these surfaces are cleaned at a minimum every two (2) years.<br>**Additional Information:** Select Not Applicable if there are no high albedo surfaces. | |
| **Scoring** | Yes | 5/5 |
| | No | 0/5 |
| | N/A | 0/0 |

## 9.4 BUILDING SYSTEMS

| 09.04.01 | Are measures in place to reduce light pollution? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** Light pollution from a site's lighting system can affect nocturnal ecosystems and can use energy unnecessarily.<br>**Requirements:** Demonstrate that at least two (2) measures have been put in place to minimize nighttime light pollution.<br>Accepted measures include (but are not limited to): conducting a lighting assessment of the facility to determine requirements and eliminating light fixtures that are not needed/unnecessary; installing motion sensors and timers to reduce the amount of time lights are on; shielding outdoor lights so that only required areas are illuminated; and encouraging occupants to keep blinds down at night to keep the light glow indoors.<br>Store fronts and other buildings with exterior lighting must use luminaire shielding strategies to control up lighting and prevent lighting pollution to the maximum extent reasonably possible. | |
| **Scoring** | Yes | 6/6 |
| | No | 0/6 |

| 09.04.02 | Are automatic occupancy indicators installed in all parking spots of the parking areas? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** Implementation of automatic parking space occupancy indicators allows drivers to find and park their vehicle with relative ease. By identifying which spots have been taken and which are available this option reduces the amount of time spent searching for a spot which in turn reduces the amount of carbon emissions exhausted from the tailpipe of the car.<br>**Requirements:** Install occupancy indicators in all parking spots to alert occupants to available areas.<br>**Additional Information:** Select Not Applicable if there is no parking at the building, installation of sensors is not economically feasible (due to lack of frequent public visitation, non-enclosed lots under 100 spaces in size, etc.) or if the parking facility is owned and managed by a third-party. | |
| **Scoring** | Yes | 10/10 |
| | No | 0/10 |
| | N/A | 0/0 |

## 9.5 INNOVATION

| 09.05.01 | Does the facility site include features to minimize and manage stormwater runoff? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** Impervious surfaces, such as parking lots, roofs and sidewalks can lead to increased surface runoff. Too much runoff can lead to erosion, flooding, and increased pollutants and sediments reaching municipal storm sewer systems and nearby waterbodies. Therefore, measures should be implemented to minimize stormwater runoff.<br>**Requirements:** Demonstrate that sufficient stormwater management/minimization measures are in place at the building to reduce the percentage of stormwater that becomes runoff. During peak storm flow, the typical percentage of stormwater runoff varies by location of site:<br>• Downtown/urban areas: 70-95% of stormwater becomes runoff<br>• Suburban areas: 25-40% of stormwater becomes runoff<br>• Light industrial areas: 50-60% of stormwater becomes runoff<br>• Heavy industrial areas: 60-90% of stormwater becomes runoff<br>Demonstrate that the runoff is at least 10% less than the lowest threshold using the threshold (above) that is closest to the type of site relevant to the building (e.g., downtown/urban vs. suburban area, etc.)<br>**Additional Information:** There are a number of measures that can be put in place to effectively manage stormwater to reduce runoff, including: stormwater or retention ponds, gardens/rain gardens, green roofs, use of porous pavement/pavers, and capturing stormwater in cisterns for later re-use. Rain gardens are landscape features designed that consist of sunken garden spaces where runoff can pond and infiltrate into deep constructed soils and then into the native soils below to divert stormwater runoff from hard surface areas<br>In downtown core areas, planting trees and vegetation can decrease runoff by detaining and absorbing rainfall. Other strategies include: reducing the size of each parking space, minimizing parking lot areas, using pervious pavement to reduce runoff and planting urban rain gardens.<br>For all innovation questions, if you are unable to answer “Yes”, select “Not Applicable” instead. No points will be lost. | |
| **Scoring** | Yes | 6/6 |
| | N/A | 0/0 |

| 09.05.02 | Does 75% or more of the available impermeable surface area have a high Solar Reflectance Index (SRI) value? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** The Solar Reflectance Index (SRI) is a measure of a surface's ability to reject solar heat. An SRI of 0 is usually attributed to black surfaces that absorb high amounts of solar heat, whereas an SRI of 100 is usually attributed to white surfaces that reject solar heat.<br>**Requirements:** Implement measures (such as white reflective roofs) to ensure impermeable surfaces have a SRI value of 29 or higher for non-roof or steep-slope areas and a SRI value of 78 or higher for low-slope areas.<br>**Additional Information:** Examples of compliant surfaces include walkways with typical new white concrete (SRI 86), and white coating on metal roof (SRI 82). Check product specification sheets to confirm SRI values.<br>For all innovation questions, if you are unable to answer "Yes", select "Not Applicable" instead. No points will be lost. | |
| **Scoring** | Yes | 10/10 |
| | N/A | 0/0 |

| 09.05.03 | Is 30% or more of the roof space covered by a green roof? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** The heat island effect can be reduced by the introduction of vegetated (green) roofs. A green roof is an extension of an above-grade roof, building on top of a human-made structure that allows vegetation to grow in a growing medium. Green roofs can be either extensive (shallow growth media with low and hardy, typically alpine, dryland or indigenous plants) or intensive (deeper growing medium which can accommodate shrubs and trees).<br>**Requirements:** Demonstrate that a green roof is in place with construction or design drawings.<br>**Additional Information:** Components of a green roof can include: vegetation, growing media, moisture retention mat, drainage panel and filter fabric, root barrier, waterproofing membrane and a protection board. Exclude roof areas where a green roof cannot be implemented, such as space which is utilized by HVAC or communications equipment. If the roof area or space is discontinuous, the total roof area should be the sum of all roof spaces.<br>For all innovation questions, if you are unable to answer "Yes", select "Not Applicable" instead. No points will be lost. | |
| **Scoring** | Yes | 16/16 |
| | N/A | 0/0 |

# 10. STAKEHOLDER ENGAGEMENT

## 10.1 DEMONSTRATION OF INTENT

| 10.01.01 | Has the Environmental Policy been clearly communicated to building occupants? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** Increasing awareness of environmental goals can help management and tenants work together to achieve more sustainable outcomes for the building. This ensures stakeholders are on the same page with respect to sustainability at the facility.<br>**Requirements:** Communicate the overarching Environmental Policy (BEST Practice) to occupants. It must be available for review on an on-going basis.<br>**Additional Information:** *Occupants* are the permanent/regular occupants of the building, such as tenants and staff. If the building is owner-occupied, surveys should be directed to staff. Visitors to the building are not considered occupants. If the building is owner-occupied, surveys should be directed to staff. Communication examples include: adding the Environmental Policy to new employee "welcome packages", new tenant packages and newsletters; making it available on the company website or on an intranet site accessible by tenants and building staff; and introducing it at "green team" meetings or other in-person forums. | |
| **Scoring** | Yes | 3/3 |
| | No | 0/3 |

| 10.01.02 | Are members of the building management team specifically responsible for implementing environmental initiatives? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** Leadership in environment begins at the top. It is important to specify who is ultimately accountable for setting environmental (or sustainability) goals or targets for the building and who is ultimately responsible for achieving them.<br>**Requirements:** Management must clarify roles and responsibilities of those leading the environmental initiative. Authority must be given to these individuals so that they may implement environmental initiatives to improve building performance.<br>**Additional Information:** Provide outline of the building management team structure describing roles and responsibilities of environmental group/leaders along with their roles and responsibilities.<br>Individuals may be responsible for initiatives applicable to an entire portfolio/campus or for an individual building. | |
| **Scoring** | Yes | 12/12 |
| | No | 0/12 |

| 10.01.03 | Is the building's environmental performance tied to one or more key performance indicators (KPIs) for building staff? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** Key Performance Indicators (KPIs) are metrics used to evaluate factors that are deemed critical to the success of an organization. In terms of building operations, developing KPIs that include environmental or sustainability metrics is important to ensuring success in this area.<br>**Requirements:** KPIs must be – at a minimum – tied to the performance of senior management personnel, though KPIs should ideally also be in place for building staff at all levels. A minimum of two (2) KPIs (or 1 if this is the maximum permitted) must be in place and tied directly to the performance of senior level staff in the building. KPIs must be related to at least two (2) of the following: energy efficiency, water efficiency, and waste diversion.<br>**Additional Information:** KPIs can be related to any number of environmental or sustainability goals, including energy efficiency, water efficiency, waste diversion, and tenant satisfaction rates. | |
| **Scoring** | Yes | 10/10 |
| | No | 0/10 |

| 10.01.04 | Are tenants required to comply with specific environmental criteria? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** Tenants have a big role to play if the environmental objectives for a building are going to be met. Providing tenants with specific sustainability or environmental criteria will improve transparency around key environmental issues pertinent to the building and foster greater cooperation between tenants and building staff regarding achieving environmental goals.<br>Criteria can be provided in a green lease, a green design criteria handbook, or through other methods.<br>**Requirements:** Demonstrate that tenants have been required to meet at least one (1) provision per criteria:<br>• Energy efficiency. Provisions include (but are not limited to): tenants commit to installing only energy-efficient equipment or agree to leave pre-installed ENERGY STAR rated equipment; tenants commit to sending the landlord utility information if separately metered at least annually; tenants commit to managing plug loads; etc.<br>• Water efficiency. Provisions include (but are not limited to): tenants commit to installing only water-efficient equipment or agree to leave pre-installed water-efficient equipment; tenants commit to sending the landlord water usage data if separately metered at least once annually; tenants commit to minimizing the use of water by turning off taps and other water-using equipment when not in use; etc.<br>• Environmental fit-up plan. Provisions include (but are not limited to): tenants commit to selecting furniture, paints, equipment and other products for tenant fit-ups that are certified by credible third-party certifiers such as CSA, EcoLogo, UL, GreenSeal, FSC, and SFI; tenants commit to reducing the amount of waste generated through renovation and construction; etc.<br>• Waste reduction and recycling. Provisions include (but are not limited to): tenants commit to educating employees about correctly using recycling facilities at the building; tenants commit to selecting office supply vendors with recycling or take-back programs, or programs that reduce the use of packaging materials for shipments; tenants commit to tracking and monitoring waste reduction efforts and submitting information to the landlord at least once annually; tenants commit to recycling batteries and e-waste; etc.<br>Provide evidence that tenants are complying with these criteria.<br>**Additional Information:** Select all that apply. Select Not Applicable if the building has no tenants (owner-occupied). | |
| **Scoring** | Energy efficiency | 1/4 |
| | Water efficiency | 1/4 |
| | Environmental fit-up plan | 1/4 |
| | Waste reduction and recycling | 1/4 |
| | None | 0/4 |
| | N/A | 0/0 |

## 10.2 ASSESSMENT

| 10.02.01 | Does building management regularly conduct an occupant satisfaction survey that includes the following components? |
|---|---|
| **Explanation & Evaluation** | **Description:** Conducting regular occupant satisfaction surveys can help management better understand the issues/priorities that matter most to occupants. Surveys can also help improve management-tenant relationships, and inform management priorities.<br>**Requirements:** Conduct an occupant satisfaction survey. The survey must be provided to at least 50% of building occupants.<br>Assess occupant satisfaction survey every two (2) years, at a minimum.<br>**Additional Information:** Although there is no minimum rate of response required, a rate of 30% is encouraged for results to be considered informative.<br>*Occupants* are the permanent/regular occupants of the building, such as tenants and staff. If the building is owner-occupied, surveys should be directed to staff. Visitors to the building are not considered occupants. |

| 10.02.02 | Quality and effectiveness of building management and services | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** Feedback can help management understand what it is doing well from the perspective of occupants and identify areas for improvement.<br>**Requirements:** Include a question (or set of questions) pertaining to the quality and effectiveness of building management and services.<br>**Additional Information:** Samples of topics include (but are not limited to): building management responsiveness, custodial staff, repairs and fit-ups. | |
| **Scoring** | Yes | 3/3 |
| | No | 0/3 |

| 10.02.03 | Air quality | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** Air quality can be a major contributor to occupant satisfaction (or dissatisfaction).<br>**Requirements:** Include a question (or set of questions) pertaining to the air quality of the building so that management can understand what it might do to improve this aspect of the occupant experience (if the results of the survey indicated deficiencies in this area).<br>**Additional Information:** A sample question may be: “Do you notice any unpleasant odors in the building?” | |
| **Scoring** | Yes | 3/3 |
| | No | 0/3 |

| 10.02.04 | Thermal comfort | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** Monitoring, managing, and maintaining thermal comfort conditions in a building allows for optimal performance while also improving user comfort and overall satisfaction.<br>**Requirements:** Include a question (or set of questions) pertaining to the thermal comfort of the building so that management can understand what it might do to improve this aspect of the occupant experience (if the results of the survey indicated deficiencies in this area).<br>**Additional Information:** Samples of topics include (but are not limited to): indoor temperature, air speed, humidity, etc. | |
| **Scoring** | Yes | 3/3 |
| | No | 0/3 |

| 10.02.05 | Lighting | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** The quality and amount of lighting used in the building can influence occupant satisfaction (or dissatisfaction).<br>**Requirements:** Include a question (or set of questions) pertaining to the quality and amount of lighting in the building so that management can understand what it might do to improve this aspect of the occupant experience (if the results of the survey indicated deficiencies in this area). | |
| **Scoring** | Yes | 3/3 |
| | No | 0/3 |

| 10.02.06 | Acoustics | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** The acoustics of the building can influence occupant satisfaction (or dissatisfaction).<br>**Requirements:** Include a question (or set of questions) pertaining to the acoustics of the building so that management can understand how it might improve this aspect of the occupant experience (if the results of the survey indicated deficiencies in this area). | |
| **Scoring** | Yes | 3/3 |
| | No | 0/3 |

| 10.02.07 | Frequency and timeliness of communication and response times | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** The frequency of communications and response times from building management can be a major contributor to occupant satisfaction (or dissatisfaction).<br>**Requirements:** Include a question (or set of questions) pertaining to the frequency and timeliness of communication and response times from building management. | |
| **Scoring** | Yes | 3/3 |
| | No | 0/3 |

| 10.02.08 | Environmental/sustainability priorities | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** Understanding occupant priorities regarding environmental/sustainability objectives will help building management focus its communications, initiatives, and efforts to align with occupant priorities. It is also a good way for building management to assess any gaps in tenant awareness or understanding of pertinent environmental/sustainability issues.<br>**Requirements:** Include a question (or set of questions) pertaining to occupant environmental/sustainability priorities. | |
| **Scoring** | Yes | 3/3 |
| | No | 0/3 |

| 10.02.09 | Is a transportation survey conducted in the building? | | | |
|---|---|---|---|---|
| **Explanation & Evaluation** | **Description:** Understanding how occupants and visitors move to and from the building each day provides management with information useful for identifying more sustainable modes of transportation that could be encouraged or implemented at the building. This information can be used to measure changes to the data over time and could be a useful indicator of whether programs are successfully encouraging more sustainable modes of transportation to and from the building.<br>**Requirements:** Provide occupants and visitors with a question (or set of questions) about their chosen mode of transportation to and from the building. The transportation survey must be conducted every five (5) years.<br>**Additional Information:** Consider gathering more detail on fuel use patterns such as: days commuted using selected mode, distance commuted and number of passengers (for cars/carpools). Such information can help identify whether more car pool priority parking spots are needed or if more bicycle parking is required, among other things. *Occupants* are the permanent/regular occupants of the building, such as tenants and staff. Visitors are temporary visitors to the building. If the building is owner-occupied, surveys should be directed to staff. Select Not Applicable if there are no visitors to the building. | | | |
| **Scoring** | | Yes | No | N/A |
| | Facility tenants/building staff | 10/20 | 0/20 | 0/0 |
| | Visitors | 10/20 | 0/20 | 0/0 |

## 10.3 OPERATIONS & MAINTENANCE

| 10.03.01 | Does building management act on responses obtained from occupant satisfaction surveys? | | | |
|---|---|---|---|---|
| **Explanation & Evaluation** | **Description:** An occupant satisfaction survey can provide building management with important information to improve management-occupant relations, improve the occupant experience, and prioritize action plans to improve the sustainable/environmental performance of the facility. However, a survey only provides information. Unless building management acts upon the information, its value is diminished.<br>**Requirements:** Establish mechanisms to act on responses received from occupant satisfaction surveys:<br>• Aggregate results from surveys must be reported within 60 days to building management.<br>• Describe steps taken to address occupant survey feedback in each area.<br>**Additional Information:** Select all that apply. Select Not Applicable if a particular topic was not included in the survey. | | | |
| **Scoring** | | Yes | No | N/A |
| | Quality and effectiveness of building management and service | 1/8 | 0/8 | 0/0 |
| | Air quality | 1/8 | 0/8 | 0/0 |
| | Thermal comfort: | 1/8 | 0/8 | 0/0 |
| | Lighting | 1/8 | 0/8 | 0/0 |
| | Acoustics | 1/8 | 0/8 | 0/0 |
| | Frequency and timeliness of communication and response times | 1/8 | 0/8 | 0/0 |
| | Environmental/sustainability priorities | 1/8 | 0/8 | 0/0 |
| | Transportation survey | 1/8 | 0/8 | 0/0 |

| 10.03.02 | Are opportunities created and promoted for occupants to contribute to the community? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** There are many ways to give back to the community in which the building is located. One of those ways is by developing and promoting volunteer opportunities for tenants and building staff. Investing in the community through volunteering is a great way to enhance tenant loyalty, contribute to overall company success and brand recognition, and is a tangible statement of the organization's commitment to sustainability. Volunteering opportunities do not necessarily need to be environmentally oriented; opportunities should be focused on the needs of the community – whether they are environmental (e.g., community clean-up events, tree planting, etc.) or social (e.g., Habitat for Humanity builds, serving food at local shelters, providing educational opportunities to school groups, etc.) or economic (e.g. fundraising activities to support local non-profits/charities such as through food or clothing drives, raising money for local shelters or community organizations, toy drives, raising funds for local environmental protection organizations, etc.).<br>**Requirements:** Develop opportunities for tenants and building staff to contribute to the community demonstrate that participation was promoted to occupants. Provide evidence that volunteering/fundraising opportunities were successfully implemented within the past 12 months.<br>**Additional Information:** Evidence of implementation could be in the form of articles and photos summarizing volunteering activities and/or results of fundraising initiatives, or a letter from the receiving organization/community group thanking building tenants and staff for their volunteering or financial contributions. | |
| **Scoring** | Yes | 4/4 |
| | No | 0/4 |

## 10.4 BUILDING SYSTEMS

| 10.04.01 | Are the following measures in place at the building to promote sustainable modes of travel? |
|---|---|
| **Explanation & Evaluation** | **Description:** Encouraging use of more sustainable modes of transportation reduces the carbon footprint associated with occupants of the building and promotes health and wellness. Providing occupants with a narrative explaining why certain modes of transportation are more sustainable than others will increase occupant awareness of this issue.<br>**Requirements:** Demonstrate that you have been encouraging the use of more sustainable modes of transportation to and from the property within the past 12 months (e.g., supply sample communications to tenants). While not all modes of sustainable transportation may be reasonable for all buildings to promote, ascertain which options are relevant and take all reasonable steps to promote its/their use.<br>**Additional Information:** Sustainable modes of transportation include active modes (e.g., walking, cycling, rollerblading, and running); carpooling and use of car-share programs; use of public-transportation; and the use of hybrid/electric or other more efficient vehicles.<br>*Occupants* are the permanent/regular occupants of the building, such as tenants and staff. Visitors are temporary visitors to the building. If the building is owner-occupied, surveys should be directed to staff. |

| 10.04.02 | Promoting the use of public transportation | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** Building management has an opportunity to help reduce greenhouse gas emissions and traffic congestion associated with the use of single occupant vehicles by encouraging the use of public transportation facilities to and from the property.<br>**Requirements:** Encourage the use of public transportation facilities to and from the property.<br>**Additional Information:** There are many ways to promote the use of public transportation, including but not limited to: providing clear signage directing users to public transportation facilities; communicating the benefits of public transportation through different channels such as newsletters, online forums, e-blasts and/or posters; creating challenges to motivate building staff and tenants to use public transportation, etc.<br>Select Not Applicable If there are no public transportation options nearby (if there are no rail stations within 800m or if there is no bus stops within 400m). | |
| **Scoring** | Yes | 4/4 |
| | No | 0/4 |
| | N/A | 0/0 |

| 10.04.03 | Encouraging carpooling and/or car sharing programs | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** Carpooling/car sharing programs reduce the number of vehicles on the road and therefore minimize traffic congestion and air pollutants. Carpooling also saves money spent on fuel and allows co-workers/commuters to socialize.<br>**Requirements:** Reduce the use of single occupancy cars by providing designated preferred parking spaces for occupants who carpool (must represent at least 2% of parking spaces); or providing dedicated spaces for park-and-ride initiatives (e.g., shuttles to special events); or offering ride sharing programs to occupants (e.g., AutoShare, ZipCar and ride-matching programs).<br>**Additional Information:** In the case of dedicated parking spaces, these shall be reserved for occupants and be located in direct proximity to the building's entranceways. *Occupants* are the permanent or regular occupants of the building, such as tenants, staff and visitors (as applicable).<br>Select Not Applicable if there is no parking at the building or if the parking facility is owned and managed by a third-party. | |
| **Scoring** | Yes | 4/4 |
| | No | 0/4 |
| | N/A | 0/0 |

| 10.04.04 | Providing a charging station for electric/hybrid vehicles | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** Electric/hybrid vehicles are considered a better because they are more efficient and emit less carbon dioxide than conventional cars. Management should work to encourage use of these vehicles and make employees/tenants aware of their benefits.<br>**Requirements:** Provide a minimum of one (1) Level 2 (240-volt or 208-volt plug) or Level 3 (480-volt plug) electric vehicle charging station with clear signage indicating its location and designation.<br>Alternatively, if no electric vehicle charging stations are in place, points can be earned if one of the two paths have been met:<br>• Demonstrate that a program has been implemented to engage occupants to partner on infrastructure costs for installing electric vehicle charging stations. Demonstrate that realistic cost estimates have been calculated, potential providers researched as well as specifics surrounding implementation (optimal location, etc.).<br>• Demonstrate that other alternative fuel vehicles are being encouraged (e.g., in provinces where low greenhouse gas -mitting electricity options are not available).<br>If there is a separate dedicated parking for tenants and staff, a minimum of one (1) electric vehicle charging station must be provided in each separate parking area.<br>**Additional Information:**<br>Select Not Applicable if there is no parking at the building or if the facility is owned and managed by a third-party. | |
| **Scoring** | Yes | 4/4 |
| | No | 0/4 |
| | N/A | 0/0 |

| 10.04.05 | Providing safe, secure, and covered bicycle parking facilities |
|---|---|
| **Explanation & Evaluation** | **Description:** Providing safe, secure, and covered bicycle parking facilities at the building encourages cycling to and from the building. Cycling promotes a healthy lifestyle, helps to reduce traffic congestion, and reduces the building's associated environmental footprint.<br>**Requirements:** To be considered eligible, the following must be in place:<br>• Provide sufficient safe and secure bicycle parking facilities for building tenants, staff, and visitors. Use the following formulas to calculate the required number of safe and secure individual bicycle parking spaces for tenants, staff, and visitors:<br>○ *For tenants and staff: (Tenant and staff headcount) x (0.03)*<br>○ *For visitors: (10 individual bicycle parking spaces) + [(1 individual parking space x Leasable Floor Area) / (4500 ft$^2$)]*<br>• Provide covered bicycle parking for a minimum of 50% of the bicycle parking.<br>Parking facilities may be grouped but must meet the combined total requirements.<br>**Additional Information:** Bicycle parking facilities must be secure (to reduce bicycle theft), located in a safe space (to encourage their use and ensure the safety of cyclists) and covered (to protect individuals and their bicycles from inclement weather). Bicycle parking spaces installed by the municipality are not eligible unless building management has/had an active role in promoting their installation.<br>Select Not Applicable in cases where the building is not accessible via regional cycling infrastructure (i.e., bicycle lanes or paths); OR if the findings of a meaningful and relevant transportation survey indicate that on-site bicycle parking facilities are unnecessary; OR if there are no visitors to the building (for visitor bicycle parking only). |

| **Scoring** | | Yes | No | N/A |
|---|---|---|---|---|
| | Bicycle parking for tenants and staff | 1/3 | 0/3 | 0/0 |
| | Bicycle parking for visitors | 1/3 | 0/3 | 0/0 |
| | Covered bicycle parking facilities | 1/3 | 0/3 | 0/0 |

| 10.04.06 | Providing showering and changing facilities for occupant use |
|---|---|
| **Explanation & Evaluation** | **Description:** Occupants will be more likely to use active modes of transportation (e.g., cycling, walking, running) to get to and from the building if showering and changing facilities are provided.<br>**Requirements:** Incorporate showering and changing facilitates into the building's capital plan and/or encourage occupants to install shower and changing facilities as part of their fit-ups.<br>**Additional Information:** Select Not Applicable in cases where the building is not accessible via regional cycling infrastructure (i.e., bicycle lanes or paths) or sidewalks. |

| **Scoring** | | |
|---|---|---|
| | Yes | 4/4 |
| | No | 0/4 |
| | N/A | 0/0 |

## 10.5 INNOVATION

| 10.05.01 | What percentage of the building's gross leasable area is currently certified with BOMA BEST Sustainable Workplaces? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** The BOMA BEST Sustainable Workplaces (BBSW) certification, achieved by building tenants/occupants, helps organizations improve their environmental performance by providing a standardized management framework for interior commercial space. It requires tenant/occupant organizations to understand, monitor and improve their performance in the areas of energy, water, waste, e-waste, space construction and renovation, procurement practices, business and employee travel and indoor air quality.<br>**Requirements:** Provide evidence for the percentage of the building's gross leasable floor area certified with BOMA BEST Sustainable Workplaces. The spaces must be currently certified with BBSW at the time of the BOMA BEST verification, as demonstrated by the BBSW Certificate.<br>**Additional Information:** BOMA BEST Sustainable Workplaces certification is available to all tenants/occupants within a commercial building. For more information, contact info@bomabest.org<br>For all innovation questions, if you are unable to answer "Yes", select "Not Applicable" instead. No points will be lost. | |
| **Scoring** | 80-100% | 24/24 |
| | 60-79.9% | 20/20 |
| | 40-59.9% | 16/16 |
| | 20-39.9% | 12/12 |
| | 1-19.9% | 8/8 |
| | N/A | 0/0 |

| 10.05.02 | Is the building's environmental performance documented in a publicly available sustainability report? | |
|---|---|---|
| **Explanation & Evaluation** | **Description**: Many organizations commit to producing an annual sustainability or corporate social responsibility (CSR) report that discusses sustainable performance (e.g., energy efficiency, water efficiency, carbon footprint, tenant satisfaction rates, employee turnover, community investment, etc.). Reporting is important from a transparency perspective; it provides pertinent information to internal and external stakeholders about the organization, much like an annual (financial) report does.<br>Making such reports publicly available shows strengthened commitment to sustainability/CSR and increases corporate accountability to pursuing continuous improvement.<br>**Requirements:** Produce a sustainability or CSR report and make it publicly available. The report must have been produced in the last two (2) years.<br>**Additional Information:** Since reports aren't typically created for individual buildings, it is acceptable and encouraged to include the building's data in a report that aggregates the performance of buildings in a given real estate portfolio.<br>Information can be communicated in a variety of ways, such as through infographics or text. Sustainable performance examples include: energy efficiency, water efficiency, carbon footprint, tenant satisfaction rates, employee turnover, community investment, etc.<br>For all innovation questions, if you are unable to answer "Yes", select "Not Applicable" instead. No points will be lost. | |
| **Scoring** | Yes | 6/6 |
| | N/A | 0/0 |

| 10.05.03 | Is the sustainability report verified or validated by an external third party? | |
|---|---|---|
| **Explanation & Evaluation** | **Description:** Report verification ensures sustainability report compliance with best practices in sustainability/CSR reporting standards.<br>**Requirements:** Demonstrate that a third-party verifier was engaged to confirm the most recent sustainability or corporate social responsibility report.<br>**Additional Information:** Some organizations have their reports verified to determine compliance with best practices in sustainability/CSR reporting standards (e.g., the Global Reporting Initiative's reporting framework). Some organizations have portions of their reports verified (e.g., carbon emissions data) to ensure data has been collected and reported in accordance with leading carbon emissions protocols (e.g., The Climate Registry's General Reporting Protocol). Other organizations hire an external consultant to review and provide feedback on the quality and completeness of the report (e.g., Canadian Business for Social Responsibility, or Chartered Professional Accountants associations).<br>For all innovation questions, if you are unable to answer "Yes", select "Not Applicable" instead. No points will be lost. | |
| **Scoring** | Yes | 6/6 |
| | N/A | 0/0 |