



## 4. BEST Practices

### 4.1. Introduction

BEST Practices represent minimum threshold requirements for certification. All buildings must achieve the BEST Practices appropriate to their asset class to achieve any level of certification.

All applicants using the new online portal are required to upload documentation to support the BEST Practices prior to requesting verification.

Consult **section 5.2** for BEST Practices for Office, Enclosed Shopping Centre, Light Industrial, Open Air Retail, and Universal buildings.

Consult **section 5.3** for BEST Practices for Multi-Unit Residential Buildings and Health Care buildings.



## 4.2. BEST Practices for Office, Enclosed Shopping Centre, Light Industrial, Open Air Retail, Universal

### BEST Practice 1: Preventative Maintenance Program

Applicable to Office, Enclosed Shopping Centre, Light Industrial, Open Air Retail, and Universal

Is a Preventative Maintenance Program in place at the building?	
<b>Explanation &amp; Evaluation</b>	<p><b>Description:</b> 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.</p> <p><b>Requirements:</b> 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.</p> <p><b>Additional Information:</b> 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.</p>

#### REQUIREMENT DETAILS: Preventative Maintenance Program

This question is a BEST Practice and is required for all levels of certification, for all building types.

It is necessary to undertake preventative maintenance to maintain optimal performance of the building’s mechanical, electrical, and ventilation systems and their components. The building systems require periodic maintenance throughout their life cycle in addition to the need for overhauling, modernization, or replacement, at certain age or intervals, or due to specific issues or causes. These must be outlined specifically in a Preventative Maintenance Program.

The Preventive Maintenance Program must include the methodology and record for all actions that are necessary to maintain the optimal functioning of the building’s systems and their components. The required maintenance procedures will be unique to each property and the systems within these facilities.

The Preventative Maintenance Program must contain the following:

1. An inventory of which system or component must be reviewed and the type of action that is required (e.g., by room or by equipment type);
2. Guidelines on how frequently these actions must be taken (e.g., monthly, quarterly, yearly, etc.). These guidelines should be based on standards such as manufacturer specifications, code requirements and industry best practices;
3. Documentation that these actions have been taken (e.g., via signature and date);
4. Confirmation that follow-up action has been taken when warranted; and



- Record updates as new equipment is added or removed.

In addition to manual recording of this information many buildings may have online tracking software that outlines and tracks the Maintenance Program. These are acceptable if the software can monitor and track items 1-5 listed above.

The program can be common to a portfolio or campus of buildings however implementation must be building-specific.

The following is an example of a Preventative Maintenance Program. The items listed below constitute a sample only.

System	Component	Action Taken	Date Completed	Signature	Comments
<b>Annually</b>					
HVAC	Outdoor Air Intakes	Clear obstructions, bird droppings, standing water, proximity to cooling towers, trash compactors, exhausts and other pollutant sources.			
HVAC	Ventilation	Minimum outdoor air damper setting.			
HVAC	VAV Box	Minimum VAV box settings.			
HVAC	Ventilation	Duct and terminal coil cleanliness.			
HVAC	Duct insulation liner	Check for cleanliness, adhesion, and coating.			
HVAC	Cooling towers	Water treatment functioning as intended.			
FIRE	Fire Systems	Open fire dampers.			
HVAC/ ELEC	Measurement Devices and Sensors	Calibration of sensors (temperature, humidity, pressure, occupancy, photocell etc.).			
ELEC.	Controls (digital, pneumatic)	Ensure the proper functioning of all controls systems.			
<b>Semi-annually</b>					
HVAC	Building Equipment	Floor and equipment drain traps – properly sealed.			
HVAC	HVAC	Air quality measurements in			



System	Component	Action Taken	Date Completed	Signature	Comments
		select occupied areas of the building.			
<b>Quarterly</b>					
ELEC	Controls (digital, pneumatic)	Operation of outdoor damper actuators.			
ELEC	Lighting	Ensure all emergency lighting is functioning properly.			
<b>Monthly</b>					
HVAC	Ventilation	Air filter loading.			
ELEC.	Lighting	Change lamps as required.			
ELEC.	Generator	Generator testing.			

Additional references: ASHRAE 62.1-2010 "[The Standards for Ventilation and Indoor Air Quality](#)".



## BEST Practice 2: Energy Assessment

Applicable to Office, Enclosed Shopping Centre, Light Industrial, Open Air Retail, and Universal

Has an ASHRAE Level 1 Energy Assessment been conducted in the last five (5) years?	
<b>Explanation &amp; Evaluation</b>	<p><b>Description:</b> An ASHRAE Level 1 assessment refers to a simple audit of the building's configuration and energy systems. It focuses on the identification of the potential for energy efficiency improvements.</p> <p><b>Requirements:</b> An ASHRAE Level 1 Energy Assessment must have been conducted on the building in the last five (5) years.</p> <p>The Energy Assessment report must contain the following elements:</p> <ul style="list-style-type: none"><li>• 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.</li><li>• List major energy-consuming equipment.</li><li>• Prioritized list of proposed low-cost and no cost energy conserving measures (ECMs) to enable greater energy efficiency.</li><li>• 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.</li></ul> <p>Data used for this assessment must represent complete building data for all building spaces and uses.</p> <p><b>Additional Information:</b> 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.</p>

### REQUIREMENT DETAILS: ENERGY ASSESSMENT

This question is a BEST Practice and is required for all levels of certification, for all building types.

In order to meet this BEST Practice, the Energy Assessment must include the following information:

1. Owner/manager information;
2. Building name and address;
3. Building description;
4. Energy use analysis must include:
  - Utility billing analysis including cost and consumption history compiled from utility bills.
  - Energy intensity benchmarking observations including a calculation of annual energy use divided by building area (to obtain building performance indices such as MJ/m<sup>2</sup>/yr or



- kWh/ft<sup>2</sup>/yr for each energy source). Specify which floor area is being used (e.g. gross floor area, net floor area, gross leasable area, etc.) to improve the validity of comparison.
- The utility bills must cover a minimum of 12 months of continuous data.
5. Summary of major equipment and type of lighting systems in the building;
  6. Recommended Energy Conservation Measures:
    - List of identified retrofit and operation and maintenance energy conservation measures.
    - Explore sub-meter opportunities for large energy-using tenants.
  7. Basic estimates of financial savings the building owner will realize because of investing in ECMs; and
  8. Date of the assessment and signature of the person responsible for conducting the work:
    - The Energy Assessment must have been conducted within the last five (5) years from the date of verification.

### **Important Notes**

- i. The Energy Assessment may be completed by “in-house” technical staff or by a third party consultant (e.g. professional engineer or other knowledgeable energy consultant).
- ii. No major renovations to be performed after the date of the energy assessment. 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.

### **BOMA-Accepted Equivalent A: Energy Study Report**

Buildings that have been occupied for less than two (2) years may utilize an energy study report that was prepared during the design of the building in lieu of a post-construction energy audit report. This report must have shown simulated energy consumption for different design scenarios, and identify which options were chosen for the actual construction. Applicants must be able to demonstrate that these energy-reduction features were incorporated into the building.

### **BOMA-Accepted Equivalent B: Energy Communications Plan**

Where 75% or more of the building’s energy is purchased directly by tenants (e.g. most industrial and retail buildings) applicants may prepare an Energy Communication Plan in lieu of an Energy Assessment. Evidence of implementation is required to meet this BEST Practice.

This communication plan must document means of encouraging energy conservation initiatives by occupants. For example, the communication plan may include the following offerings by the landlord/management company:

- Encouragements to share energy consumption information with landlord.
- Providing walk through energy audit or assessment services.
- Delivery of “energy conservation tips” brochures to occupants.
- Energy conservation seminars for tenants / occupants.
- Other communication tools: posters, “turn it off stickers”, etc.



Evidence of implementation may include the following:

- Agendas and notes from tenant-building management meetings.
- Copies of marketing materials used to promote energy conservation within the building.
- Copies of communication to tenants/occupants regarding energy conservation.
- Copies of energy assessments or audits performed in tenant spaces.



## BEST Practice 3: Energy Management Plan

Applicable to Office, Enclosed Shopping Centre, Light Industrial, Open Air Retail, and Universal

Is an Energy Management Plan in place at the building?	
<b>Explanation &amp; Evaluation</b>	<p>This question is a BEST Practice and is required for all levels of certification.</p> <p><b>Description:</b> Energy management is the continuous process of managing behavioral, organizational and technical change to improve the building’s energy performance.</p> <p><b>Requirements:</b> The Energy Management Plan must have been reviewed and updated in the last three (3) years.</p> <p>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:</p> <ul style="list-style-type: none"> <li>• Whether a particular ECM will be pursued or not;</li> <li>• The person responsible for the implementation of the ECM;</li> <li>• The budget associated with the ECM; and</li> <li>• A timeline for completion.</li> </ul> <p>If a particular measure will not be followed-up for the building, indicate why this is the case.</p> <p>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.</p> <p><b>Additional Information:</b> 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.</p> <p>The BOMA-Accepted Equivalent is available for buildings that have been occupied for fewer than two (2) years.</p>

### REQUIREMENT DETAILS: Energy Management Plan

This question is a BEST Practice and is required for all levels of certification, for all building types.

Energy management is the continuous process of managing behavioural, organizational and technical change to improve your organization’s energy performance.

The Energy Management Plan must identify and document building-specific measures to improve energy efficiency and reduce demand. These measures should be based on a clearly identified performance target (using quantifiable performance indicators), identified through the energy audit or the operational staff.

The Energy Management Plan must have been reviewed and updated in the past three (3) years.

All actions must be evaluated for their technical feasibility and expected results (estimated energy savings and pre-feasibility study) as well as financial feasibility (through an economic cost/benefit analysis such as simple payback or ROI). These actions must be integrated into a timeline.





A documented plan for implementing energy conservation strategies is illustrated in the table below as an example of minimum requirements. A more detailed table is strongly encouraged, especially one which allows for continuous energy tracking.

### Energy Management Plan – Sample Form

No.	Proposed Measure	Budget	When	Expected Return	Responsible Person(s)
1	Day time cleaning	\$ --.00	2017	4 years	Jean Paul Kim
2	Re-commissioning feasibility study	\$ --.00	2018	18 months	Alexa Moreno

Natural Resources Canada provides a comprehensive roadmap for developing and implementing an Energy Management Plan titled [Energy Management Best Practices Guide – For Commercial and Institutional Buildings](#).

These practices are clearly stated as minimal best practices according to the *2011 ASHRAE Handbook HVAC applications* (chapter 36; chapter 41). If the energy reduction plan is done through an ESCO project, energy savings should be measured according to EVO Standards (Efficiency Valuation Organization) and *ASHRAE guideline 14-2002 Measurement of energy and demand savings*.

### BOMA-Accepted Equivalent: Energy Commissioning Plan

Buildings that have been occupied for fewer than two (2) years can meet this BEST Practice by demonstrating that an Energy Commissioning Plan has been put into place. The intent of this BOMA-accepted equivalent is to ensure that the building’s major systems and equipment are being optimized/fine-tuned for specific seasonal requirements, occupancy variability, etc.

The Energy Commissioning Plan must clearly demonstrate that the following actions have been considered and implemented in the previous 12 months – as per *2011 ASHRAE Handbook HVAC applications* (chapter 36; chapter 41):

1. An energy measurement or assessment plan for major operating systems and equipment AND an energy bill evaluation and follow up plan;
2. If a deficiency report has been generated (from the construction process) regarding building systems, plans to address these deficiencies must be included in the Energy Commissioning Report;
3. A person identified as responsible for the building energy performance;
4. Training for operations staff on performing the above.

### Important Notes:

- i. The Energy Commissioning Plan may be created and implemented by an “in-house” operational staff or by a third-party consultant (e.g. professional engineer or other knowledgeable energy consultant).



- ii. The energy measurement or assessment plan for major systems and equipment must include all operating systems and equipment that represent the greatest proportionate use of energy in the building (e.g. heating system; cooling system, etc.).
- iii. It is not always possible to assess the operations of major operating systems and equipment through the ongoing review of energy bills. Other methods of assessment include: tenant satisfaction surveys, control sequence reviews, etc.
- iv. The Energy Commissioning Plan must specifically identify the individuals responsible for the energy measurement of major operating systems and equipment, as well as those individuals responsible for reviewing energy billings.
- v. One person must be identified as being responsible for the overall energy commissioning plan.
- vi. Although demonstration of implementation is preferable, it is not necessary.
- vii. The plan can be common to a portfolio or campus of buildings however building specific information is required.



## BEST Practice 4: Energy Reduction Target

Applicable to Office, Enclosed Shopping Centre, Light Industrial, Open Air Retail, and Universal

Is an energy reduction target in place at the building?	
<b>Explanation &amp; Evaluation</b>	<p><b>Description:</b> 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.</p> <p><b>Requirements:</b> An energy reduction target must be identified along with a timeframe for completion.</p> <p>Targets must be put into writing, signed by senior management and reviewed annually, as well as be integrated into the Energy Management Plan.</p> <p><b>Additional Information:</b> 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.</p> <p>In the case of Recertification, building managers are expected to demonstrate what targets have been reached since certification.</p> <p>The BOMA-Accepted Equivalent is available for buildings where 75% or more of the building’s energy is purchased directly by tenants.</p>

### REQUIREMENT DETAILS: Energy Reduction Target

This question is a BEST Practice and is required for all levels of certification, for all building types.

Applicants will not be evaluated on whether or not they have reached the stated targets; rather the intent of this BEST Practice is to encourage building owners and managers to review available historical consumption data while also taking into consideration planned upgrades or improvements in order to set realistic targets.

Targets must be written and signed by senior management. Targets must be reviewed annually and be inserted into the Energy Management Plan.

Recertified buildings are expected to review previously set targets, demonstrate which ones were met, as well as provide a brief explanation regarding targets that were not met.

### BOMA-Accepted Equivalent: Energy Reduction Target Gap Analysis

Where 75% or more of the building’s energy is purchased directly by tenants (e.g. multi-tenant office, industrial or retail buildings) applicants may prepare an Energy Reduction Target Gap Analysis.

An Energy Reduction Target Gap Analysis allows the building owner or manager to understand where gaps exist in the available data. Once these gaps are filled, the building owner and manager will benefit from a better understanding of exactly how much energy is consumed in the building, thereby allowing for targets to be set.

This analysis must include information on the following:

1. Owner/manager information;
2. Building name and address;



3. Building description;
4. Base building annual energy usage summary; and
5. Tenant space analysis:
  - Summary of all tenant spaces.
  - Information on annual energy usage for all tenant spaces, where available.
  - Summary of tenant spaces where energy usage information is not available.
  - Documentation showing whether the missing energy data is being, or has been, sought after (i.e. Green Button Share my Data request sent etc.).



## BEST Practice 5: Water Assessment

Applicable to Office, Enclosed Shopping Centre, Light Industrial, Open Air Retail, and Universal

Has a Water Assessment been conducted in the last five (5) years?	
<b>Explanation &amp; Evaluation</b>	<p><b>Description:</b> 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.</p> <p><b>Requirements:</b> A water assessment must have been conducted on the building in the last five (5) years.</p> <p>The water assessment report must contain the following elements:</p> <ul style="list-style-type: none"><li>• 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.</li><li>• Assessment and list of current performance of water-consuming equipment.</li><li>• Prioritized list of proposed water conserving measures (WCM's) to enable greater water efficiency.</li><li>• Provision of estimates of financial savings the building owner will realize as a result of investing in WCMs and the simple payback period.</li></ul> <p><b>Additional Information:</b> The BOMA-Accepted Equivalent is available for buildings where 75% or more of the building's water is purchased directly by tenants or if the building has been occupied for fewer than two (2) years.</p>

### REQUIREMENT DETAILS: Water Assessment

This question is a BEST Practice and is required for all levels of certification, for all building types.

To meet this BEST Practice, the Water Assessment must include the following information:

1. Building Information
2. Owner/manager information
3. Building name and address
4. Building description
5. Date of water assessment
6. Water use analysis must include:
  - Water billing analysis including cost and consumption history compiled from utility bills.
  - Water intensity benchmarking observations including a calculation of annual water use divided by building area (to obtain a building performance index such as  $m^3/m^2/yr$ ). Specify which floor area is being used (e.g. gross floor area, net floor area, gross leasable area, etc.) to improve the validity of comparison.
  - The utility bills must cover a minimum of 12 months of continuous data.
7. Water-using equipment inventory, such as:
  - Domestic water fixtures (faucets, toilets, urinals).



- Water using appliances (dishwasher, washing machine etc.).
  - Cooling equipment including cooling towers, equipment “once-through” cooling and customized tenant cooling equipment.
  - Landscape irrigation equipment.
  - Water use for humidification equipment.
  - Water use from heating equipment (boiler blowdown, steam production and condensate management).
  - Any specialized equipment (including production use and process loads).
8. Recommended Water Conservation Measures (WCMs):
- List of identified retrofit and operation and maintenance water conservation measures.
  - Explore sub-meter opportunities for large water-using tenants.
9. Basic estimates of financial savings the building owner will realize because of investing in WCMs.
10. Date and signature of the person responsible for conducting the work:
- The Water Assessment must have been conducted within the last five (5) years from the date of verification.

#### **Important Notes:**

- i. The Water Assessment may be completed by “in-house” technical staff or by a third party consultant (e.g. a professional engineer or other knowledgeable water consultant).
- ii. The Water Assessment report may be combined with the Energy Assessment report.

#### **BOMA-Accepted Equivalent A: Water-using equipment inventory**

Buildings that have been occupied for less than two (2) years OR have buildings with no water meter may submit a Water-using Equipment Report which can be created with information contained in the building’s Operation and Maintenance Manual, As Built Drawings and Commissioning Report.

The Water-using Equipment Report must include the following information:

1. Building Information;
2. Owner/manager information;
3. Building name and address;
4. Building description;
5. Water-using Equipment Information: An inventory/survey of all water consuming equipment on facility premises and their locations throughout the building, such as:
  - Domestic water fixtures (faucets, toilets, urinals).
  - Water using appliances (dishwasher, washing machine etc.).
  - Cooling equipment including cooling towers, equipment “once-thru” cooling and customized tenant cooling equipment.
  - Landscape irrigation equipment.
  - Water use for humidification equipment.
  - Water use from heating equipment (boiler blowdown, steam production and condensate management).



- Any specialized equipment (including production use).
6. Baseline consumption of this equipment based on data from the building automation system and water sub-meters OR based on equipment performance estimates informed by manufacturer specifications PLUS an estimated calculation of the equipment's annual consumption, such as:
    - Sinks and faucets: aerator output multiplied by estimation of annual use.
    - Toilets and urinals: flush output multiplied by estimation of annual use.
    - Showerhead: output of the showerhead multiplied by estimation of annual use.
    - Cooling towers: estimate make-up water required to compensate for losses due to evaporation, drift and splash-out, leaks and overflow, and bleed or blowdown.
    - Evaporation: Directly related to heat transfer and operational management. Assume approximately 1.8 GPH (centrifugal) or 3.7 GPH (absorption) per ton of cooling multiplied by the load percentage.
    - Bleed/blowdown: Losses represent a non-linear function of the concentration cycles (purity of make-up water over the purity of the recirculating water). Higher cycles mean fewer blowdowns are needed.
    - Drift and splash-out: Losses are not significant for well-maintained towers under normal conditions. Assume approximately 0.014 GPH per ton of cooling or about 0.008% of recirculating water.
    - Leaks and overflows: These are difficult to measure or estimate and losses are not significant in well-maintained towers. Visual inspection for leaks should be performed.
    - Irrigation system: output of the sprinklers multiplied by operating hours.
  7. Recommended Water Conservation Measures:
    - List of identified retrofit and operation and maintenance water conservation measures.
    - Estimated costs, savings and payback period of measures.
    - Establish water reduction targets.
    - Explore feasibility of installing a base building meter if not present.
    - Explore sub-meter opportunities for the cooling tower make-up line and other major water consuming equipment.
  8. Date and signature of the person responsible for conducting the work.
    - The Water-using equipment inventory must have been conducted within the last five (5) years from the date of verification.

### **BOMA-Accepted Equivalent B: Water Communications Plan**

Where 75% or more of the building's water is purchased directly by tenants (e.g. most Light Industrial and Open Air Retail buildings), applicants may prepare a Water Communication Plan in lieu of a Water Assessment report. Evidence of implementation is required to meet this BEST Practice.



This communication plan must document means of encouraging water conservation initiatives by occupants. For example, the communication plan may include the following offerings by the landlord/management company:

- Providing walk through water audit or assessment services of tenant spaces.
- Delivery of “water conservation tips” brochures to occupants.
- Water conservation seminars for tenants/occupants.
- Other communication tools: posters, “shut-it-off stickers”, etc.

Evidence of implementation may include the following:

- Agendas and notes from tenant-management team meetings.
- Copies of marketing materials used to promote water conservation measures.
- Copies of communication to tenants/occupants regarding water conservation tips/opportunities.
- Copies of water use assessments or audits done in tenant spaces.





## BEST Practice 6: Water Management Plan

Applicable to Office, Enclosed Shopping Centre, Light Industrial, Open Air Retail, and Universal

Is a Water Management Plan in place at the building?	
<b>Explanation &amp; Evaluation</b>	<p><b>Description:</b> Water management is the continuous process of managing behavioural, organizational and technical change to improve the building’s water performance.</p> <p><b>Requirements:</b> 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.</p> <p>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.</p> <p><b>Additional Information:</b> 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.</p> <p>The BOMA-Accepted Equivalent is available for buildings that have been occupied for fewer than two (2) years.</p>

### REQUIREMENT DETAILS: Water Management Plan

This question is a BEST Practice and is required for all levels of certification, for all building types.

The Water Management Plan should identify and document building-specific measures to improve water efficiency and reduce demand. These measures should be based on a clearly identified performance target (using quantifiable performance indicators), identified through the water assessment or the operational staff.

The Water Management Plan must have been reviewed and updated in the past three (3) years.

All actions must be evaluated for their technical feasibility and expected results (estimated water savings and pre-feasibility study) as well as financial feasibility (through an economic cost/benefit analysis such as simple payback or ROI). These actions must be integrated into a timeline.

A documented plan for implementing water conservation strategies is illustrated in the table below as an example of minimum requirements. A more detailed table is strongly encouraged, especially one which allows for continuous water tracking.



## Water Management Plan – Sample Form

No.	Proposed Measure	Budget	When	Expected Return	Responsible Person(s)
1	Low-flow fixtures	\$ --.00	2017	4 years	Jean Paul Kim
2	Non-potable irrigation	\$ --.00	2018	18 months	Alexa Moreno

### BOMA-Accepted Equivalent: Water Commissioning Plan

Buildings that have been occupied for less than two (2) years can meet this BEST Practice by demonstrating that a Water Commissioning Plan has been put into place. The intent of this BOMA-accepted equivalent is to ensure that the building’s major systems and equipment are being optimized/fine-tuned for specific seasonal requirements, occupancy variability, etc.

The Water Commissioning Plan must clearly demonstrate that the following actions have been considered and implemented in the previous 12 months:

1. A water measurement or assessment plan for major operating systems and equipment as well as a water bill evaluation and follow up plan;
2. If a deficiency report has been generated (from the construction process) regarding building systems, plans to address these deficiencies must be included in the Water Commissioning Report;
3. A person identified as responsible for the building water performance;
4. Training for operations staff on performing the above.

### Important Notes:

- i. The Water Commissioning Plan may be created and implemented by an “in-house” operational staff or by a third-party consultant (e.g. professional engineer or another appropriate consultant).
- ii. The water measurement or assessment plan for major systems and equipment must include all operating systems and equipment that represent the greatest proportion of water consumption in the building (e.g. district hot water, cooling towers, etc.)
- iii. It is not always possible to assess the operations of major operating systems and equipment through the ongoing review of water bills. Other methods of assessment include: tenant satisfaction surveys, control sequence review, etc.
- iv. The Water Commissioning Plan must specifically identify the individuals responsible for the water measurement of major operating systems and equipment, as well as those individuals responsible for water bill review.
- v. One person must be identified as being responsible for the overall water commissioning plan.
- vi. Although demonstration of implementation is preferable, it is not necessary.
- vii. The plan can be common to a portfolio or campus of buildings however building specific information is required.



## BEST Practice 7: Indoor Air Quality Monitoring Plan

Applicable to Office, Enclosed Shopping Centre, Light Industrial, Open Air Retail, and Universal

Is an Indoor Air Quality Monitoring Plan in place at the building?	
<p><b>Explanation &amp; Evaluation</b></p>	<p><b>Description:</b> 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.</p> <p><b>Requirements:</b> The Air Quality Monitoring Plan must contain the following elements:</p> <ul style="list-style-type: none"> <li>• 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.</li> <li>• Set a schedule for HVAC inspection and maintenance tasks to ensure good hygiene (cleanliness, no standing water, etc.).</li> <li>• Identify HVAC systems that will impact the IAQ goals listed above.</li> <li>• 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.</li> <li>• 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).</li> <li>• Identify training requirements for property management and building maintenance staff relating to IAQ.</li> <li>• Review the plan annually and update as necessary.</li> </ul> <p>Where ventilation systems are owned and maintained by the tenants, the building owner/manager must provide an Indoor Air Quality Monitoring Plan for their use.</p> <p>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.</p> <p><b>Additional Information:</b> 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.</p> <p>Refer to the USEPA I-BEAM for more information on developing an <a href="#">IAQ Monitoring Plan</a>.</p>



## REQUIREMENT DETAILS: Air Quality Monitoring Plan

This question is a BEST Practice and is required for all levels of certification, for all building types.

The Air Quality Monitoring Plan is a guidance document that will inform future action. Implementation is not required as a part of this BEST Practice. Rather, this BEST Practice is focused on intent.

Below are suggestions to inform the components of the IAQ Monitoring Plan.

Suggested performance goals for IAQ include the following for frequently occupied indoor spaces:

- Carbon dioxide not exceeding 700 ppm above ambient (ASHRAE 62.1);
- Carbon monoxide not exceeding 9 ppm (ASHRAE 62.1);
- Total volatile organic compound concentrations do not exceed 1000  $\mu\text{g}/\text{m}^3$  (440 ppb) (Health Canada);
- $\text{PM}_{10}$  does not exceed 50  $\mu\text{g}/\text{m}^3$  (ASHRAE 62.1);
- Temperature in the range of 21 – 27 C°, taking into account seasonal variances, relative humidity (ASHRAE 55);
- Relative humidity in the range of 30-60% (USEPA I-BEAM) or more than 20% (CSA);
- HVAC system interiors are in good general condition, clean, free of standing water and debris, and have no visible suspect mould growth.

If other local regulations exist for the above performance criteria, the most stringent will apply.

Regarding the preventative maintenance schedule for HVAC systems and equipment that will impact IAQ, include language regarding how environmental quality performance will be verified. At a minimum, testing should be conducted over a typical work day, taking into account fluctuations in contaminant levels that may occur. Testing should be conducted, at a minimum, in the morning and afternoon.

The US EPA provides a free sample [Indoor Air Quality audit checklist](#).

### **BOMA-Accepted Equivalent: Indoor Air Quality Monitoring Plan for Tenants**

In the case where all ventilation systems and equipment are owned and operated exclusively by the tenants, the building owner or manager must provide tenants with suggested guidelines on how to prepare an Indoor Air Quality Monitoring Plan based on the requirements listed above. Although ensuring adherence by the tenants to this plan is highly encouraged, it is not required to meet this BEST Practice.

#### **Important Notes:**

- i. The person developing the Indoor Air Quality Monitoring Plan must be competent based on the following criteria (aligned with the definition of various provincial Occupational Health and Safety Acts):
  - Adequate qualifications – the person has a good working knowledge and understanding of the legislation surrounding indoor environmental quality (i.e. training certificates or educational background in hygiene, occupational health and safety, environmental engineering, building science or similar);



- Suitable training – the person must have training that is appropriate to implementing an indoor environmental quality monitoring program and which comply with provincial minimum safety training requirements; and
  - Sufficient experience – the person must have enough experience to safely perform the work without supervision or with only a minimal degree of supervision.
- ii. Although demonstration of implementation is preferable, it is not necessary.
  - iii. The plan can be common to a portfolio or campus of buildings however building specific information is required.



## BEST Practice 8: Occupant Service Request Program

Applicable to Office, Enclosed Shopping Centre, Light Industrial, Open Air Retail, and Universal

Is an Occupant Service Request Program in place?	
<b>Explanation &amp; Evaluation</b>	<p><b>Description:</b> 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.</p> <p><b>Requirements:</b></p> <p>Establish an Occupant Service Request Program for the building. The Program must include the following components:</p> <ul style="list-style-type: none"> <li>• 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).</li> <li>• Information on the origins of the service request;</li> <li>• Information on the status of the service request (e.g. in progress, resolved, etc.); and</li> <li>• Information on the corrective action taken.</li> </ul> <p>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.</p> <p><b>Additional Information:</b> Service requests can be made by all building occupants, including tenants, visitors and staff.</p>

### REQUIREMENT DETAILS: Occupant Service Request Program

This question is a BEST Practice and is required for all levels of certification, for all building types.

Building management must have in place a documented means for addressing occupant (tenant and building staff) concerns regarding maintenance service requests. Visitors to the building may also log service requests. Such service request logs can provide evidence of occupant dissatisfaction and its causes. Trends in complaint rates over time may indicate occupant reactions to changes in building operation.

The Occupant Service Request Program must have a mechanism in place for recording the following information:

- Incident log number;
- Occupant name, company and department, location in building.
- Date complaint was received;
- Description of complaint;
- Suggested cause;
- Summary of problem;
- Actions completed;



- Date of occupant interview (if applicable);
- Remedial action report;
- Date of when occupant was advised about actions taken;
- Additional details (as required).

Service requests must be reviewed and acted upon within 1-2 weeks, unless otherwise specified (e.g., critical area or critical equipment).

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.



## BEST Practice 9: Hazardous Building Materials Management Program

Applicable to Office, Enclosed Shopping Centre, Light Industrial, Open Air Retail, and Universal

Is a Hazardous Building Materials Management Program in place at the building?	
<b>Explanation &amp; Evaluation</b>	<p><b>Description:</b> The presence and condition of hazardous building materials must be identified and managed for the safety of building occupants.</p> <p><b>Requirements:</b> The Hazardous Building Materials Management Program must include:</p> <ul style="list-style-type: none"> <li>Inventory of all building materials known or presumed to contain asbestos, lead, PCBs, silica and mercury (at a minimum);</li> <li>Inspection of known/presumed asbestos-containing materials within the past 12 months, where present;</li> <li>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;</li> <li>Corrective actions identified during the inspections completed;</li> <li>Management protocols for unexpected disturbance of asbestos;</li> <li>Pre-construction assessment of materials and equipment impacted by renovation activities for the presence of hazardous building materials;</li> <li>A proactive plan for the abatement of accessible asbestos-containing materials (including in the areas above acoustic tiles) and PCB-containing equipment and ballasts;</li> <li>Awareness training for building maintenance staff on asbestos safety; and</li> <li>Review and updating as changes occur to the location of hazardous materials in the building, at a minimum every three (3) years.</li> </ul> <p>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.</p> <p>Demonstration of implementation is required. The program can be common to a portfolio or campus of buildings however implementation must be building-specific.</p>

### REQUIREMENT DETAILS: Hazardous Building Materials Management Program

This question is a BEST Practice and is required for all levels of certification, for all building types.

To mitigate the risk of exposure to hazardous materials associated with building materials, equipment and finishes, the building owner/manager must develop a plan to periodically inspect the condition of these materials, conduct safe repair, assess disturbance or complete removal of these materials, and to adequately train personnel in contact with hazardous materials.

The Hazardous Building Materials Management Program must include:

1. Inventory of all building materials known or presumed to contain asbestos, lead, PCBs, silica and mercury (at a minimum).





The survey for hazardous building materials are performed typically room by room, or by area. Samples may be required to confirm presence of hazardous building materials. All building owners or tenants must verify sampling requirements with the province specific regulation governing sampling methodology for hazardous building materials.

All building materials should be presumed to contain asbestos and all paint should be presumed to contain lead until analysis is performed at an accredited laboratory (see Notes for the list of acceptable accreditations). The presence of these substances must be identified prior to any renovation or demolition.

Building materials containing asbestos must be identified. Local regulations prescribe the type of materials to be sampled, the number of samples of each material to be analyzed and the minimum quantity of asbestos fibres by dry weight for the material to be considered asbestos-containing. A comprehensive survey must have the following information at a minimum for BOMA BEST verification purposes:

- Type of hazardous materials present in the building;
- Location of the hazardous materials;
- The extent of the hazardous material within the building;
- The approximate quantity of hazardous material in each area.

[ASTM E2356 - 14 “Standard Practice for Comprehensive Building Asbestos Surveys”](#) provides guidelines on completing an asbestos survey.

2. Inspection of known/presumed asbestos-containing materials within the past 12 months, where present.

The condition or state of the asbestos-containing materials (e.g. poor, fair, good) must be reviewed.

3. 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.
4. Corrective actions identified during the inspections completed.

The program must include a list of recommended actions to meet province specific regulatory requirements with respect to maintenance, inspection, training and abatement.

5. Management protocols for unexpected disturbance of asbestos.
6. Pre-construction assessment for the presence of hazardous building materials and equipment that may be directly impacted by renovation activities.
7. A proactive plan for the abatement of accessible asbestos-containing materials (including in the areas above acoustic tiles) and PCB-containing equipment and ballasts.
8. Awareness training for building maintenance staff on asbestos safety.
9. Reviewing and updating as changes occur to the location of hazardous materials in the building every three (3) years

### **Important Notes:**

- i. If the hazardous materials inventory was done at the time of acquisition and, if no other hazardous building materials were brought into the building, or found, and, if no changes in building materials have been implemented since the original survey, then a formal statement to this effect will be sufficient for verification purposes. The statement must clearly reference the



previous hazardous materials survey and the policies that have been put in place to ensure that no additional hazardous materials have been brought into the building and that existing building materials have not been replaced.

- ii. Buildings with multiple tenants must have a Hazardous Building Materials Survey that includes all tenant spaces. Building owners are responsible for ensuring that the building in its entirety is represented in the Hazardous Building Materials Survey.
- iii. The laboratory performing the sample testing should be accredited by one of the following organizations: the Canadian Association for Laboratory Accreditation (CALA), the National Voluntary Laboratory Accreditation Program (NVLAP), the American Industrial Hygiene Association (AIHA), or the Institut de recherche Robert-Sauvé en santé et en sécurité du travail (IRSST).
- iv. The person completing the hazardous building materials inventory and inspection must be competent based on the following criteria (aligned with the definition of various provincial Occupational Health and Safety Acts):
  - Adequate qualifications – the person has good working knowledge and understanding of the legislation surrounding hazardous materials (i.e. training certificates or educational background in hygiene, occupational health and safety, environmental engineering, building science or similar);
  - Suitable training – the person must have training that is appropriate to conducting hazardous building materials inventories and which comply with provincial minimum safety training requirements; and
  - Sufficient experience – the person must have enough experience to safely perform the work without supervision or with only a minimal degree of supervision.
- v. Demonstration of implementation is required.
- vi. The program can be common to a portfolio or campus of buildings however implementation must be building-specific.



## BEST Practice 10(A): Hazardous Chemical Products Management Program

Applicable **ONLY** to Office, Enclosed Shopping Centre and Universal

Is a Hazardous Chemical Products Management Program in place at the building?	
<b>Explanation &amp; Evaluation</b>	<p><b>Description:</b> 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.</p> <p><b>Requirements:</b> The Hazardous Chemical Products Management Program must include:</p> <ul style="list-style-type: none"> <li>• Periodic inventory of in-use, base-building hazardous chemical products (at least annually, or as procurement is revised);</li> <li>• Storage of chemical products in accordance with product Safety Data Sheets;</li> <li>• Safety Data Sheets available for all hazardous chemical products dated within the past three (3) years;</li> <li>• Chemical products labeled in accordance with WHMIS/GHS/HAZCOM</li> <li>• 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);</li> <li>• Review and updating of the Plan as products are changed and at least annually.</li> </ul> <p>Demonstration of implementation is required. The program can be common to a portfolio or campus of buildings however implementation must be building-specific.</p>

### REQUIREMENT DETAILS: Hazardous Chemical Products Management Program

This question is a BEST Practice and is required for all levels of certification, for Office, Enclosed Shopping Centres and Universal buildings. This is **not** a BEST Practice requirement for Light Industrial or Open Air Retail buildings.

Internationally, a globally harmonized system for safety related to the use of hazardous chemical products has been developed by the United Nations. Similar systems such as the Workplace Hazardous Materials Information System (WHMIS) in Canada and HAZCOM in the US are regulated approaches to the management of hazardous chemical or use-related products.

A use-related product is defined as anything that is brought into the building and can include a hazardous chemical. A hazardous chemical is defined as a dangerous good which could be a solid, liquid, or gas that can harm people, other living organisms, property, or the environment.

The Hazardous Chemical Products Management Program must contain the following components:

1. Periodic inventory of in-use, base-building hazardous chemical products.

Every building that uses hazardous chemicals or use-related products shall keep and maintain a record of the chemicals or use-related products in the work place that are used, handled, or stored in the building.



Any Hazardous Chemicals or Use-Related Products brought into or used in the building should be included in this Inventory:

- A list of chemicals or use-related products brought into the building for use, handling and storage.
  - The location where the chemical(s) or use-related products are used, handled and stored.
  - Safety Data Sheets for each chemical or use-related product used, handled and stored.
  - The approximate quantities of each chemical or use-related product stored on site.
  - A live index of the chemicals or use-related products including the chemical name and page reference for easy access to Safety Data Sheets and other relevant information related to each chemical.
2. Storage of chemical products in accordance with product Safety Data Sheets.

Hazardous products should be stored in rooms with proper ventilation, controlled temperatures, drain protection and adequate shelf space. Containers should be capped to avoid potential spills and fumes, properly labelled and kept in securely locked areas.

3. Safety Data Sheets available for all hazardous chemical products dated within the last three (3) years.

A Safety Data Sheet), as required by this BEST Practice, is a document that contains information on the potential hazards (health, fire, reactivity and environmental) and how to work safely with the chemical product. It is an essential starting point for the development of a complete health and safety program. It also contains information on the use, storage, handling and emergency procedures related to the hazards of the material.

4. Chemical products labeled in accordance with WHMIS/GHS/HAZCOM.
5. 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).

Relevant building maintenance staff must be trained on safe handling and use of chemicals pertaining to their work, symbol recognition, safety data sheets, first aid and spill response, storage and disposal.

6. Review and updating of the Program as products are changed and at least annually.

The Hazardous Chemicals Management Program should be modified as chemical products are changed/added, and must be reviewed annually to make sure the safety data sheets are dated within the last three (3) years, individuals working with the products have received the appropriate training, and products are appropriately labelled, etc.

#### **Important Notes:**

- i. Demonstration of implementation is required. The program can be common to a portfolio or campus of buildings however implementation must be building-specific.
- ii. Tenants, as well as building owners, are required to have an up-to-date Hazardous Chemical or Use-Related Product Inventory. It is an industry best management practice for building owners to keep an up-to-date record of all tenant Hazardous Chemical or Use-Related Product Inventories.



- iii. There are no specific competency requirements for compiling a Hazardous Chemical or Use-Related Product Inventory, however the individual conducting the inventory must have good working knowledge and understanding of the applicable regulatory requirements, including at a minimum, WHMIS.



## BEST Practice 10(B): Tenant Hazardous Chemical Products Management Program

Applicable **ONLY** to Light Industrial and Open Air Retail

Is a Tenant Hazardous Chemicals Monitoring Program in place?	
<b>Explanation &amp; Evaluation</b>	<p><b>Description:</b> Tenants, as well as building owners, are required to have an up-to-date Hazardous Chemical or Use-Related Product Inventory. Building owners must keep an up-to-date record of all tenant Hazardous Chemical or Use-Related Product Inventories.</p> <p><b>Requirements:</b> At a minimum, the Tenant Hazardous Chemicals Monitoring Program must address the following:</p> <ul style="list-style-type: none"> <li>• Periodic (at least annual) tenant inventory including location and approximate quantities of hazardous chemicals in tenant areas. This inventory can be conducted by the tenant or the property owner. In all cases, the results of the inventory must be provided to the building owner/manager.</li> <li>• Provision of Safety Data Sheets on all hazardous chemicals in tenant areas.</li> <li>• Periodic checks on the safe storage and use of the chemicals or use-related products (at least annual).</li> </ul>

### REQUIREMENT DETAILS: Tenant Hazardous Chemicals Monitoring Program

This question is a BEST Practice and is required for all levels of certification, for Light Industrial or Open Air Retail buildings only. This is **not** a BEST Practice requirement for Office, Enclosed Shopping Centres and Universal buildings.

Tenants, as well as building owners, are required to have an up-to-date Hazardous Chemical or Use-Related Product Inventory. It is an industry best management practice for building owners to keep an up-to-date record of all tenant Hazardous Chemical or Use-Related Product Inventories.

A use-related product is defined as anything that is brought into the building and can include a hazardous chemical. A hazardous chemical is defined as a dangerous good which could be a solid, liquid, or gas that can harm people, other living organisms, property, or the environment.

At a minimum, the Tenant Hazardous Chemicals Monitoring Program must address the following:

1. Periodic (at least annual) tenant inventory including location and approximate quantities.

There are no specific competency requirements for compiling a Hazardous Chemical or Use-Related Product Inventory however, the individual conducting the inventory must have good working knowledge and understanding of the applicable regulatory requirements, including at a minimum, the Hazardous Materials Information System (WHMIS).

2. Provision of Safety Data Sheets.

A Safety Data Sheet (SDS), as required by this BEST Practice, is a document that contains information on the potential hazards (health, fire, reactivity and environmental) and how to work safely with the chemical product. It is an essential starting point for the development of a complete health and safety



program. It also contains information on the use, storage, handling and emergency procedures related to the hazards of the material.

3. Periodic checks on the safe storage and use of the chemicals or use-related products.

Hazardous products should be stored in rooms with proper ventilation, controlled temperatures, drain protection and adequate shelf space. Containers should be capped to avoid possible spills and fumes, properly labelled and kept in securely locked areas.



## BEST Practice 11: Green Cleaning Program

Applicable to Office, Enclosed Shopping Centre, Light Industrial, Open Air Retail, and Universal

Is a Green Cleaning Program in place at the building?	
<b>Explanation &amp; Evaluation</b>	<p><b>Description:</b> A Green Cleaning Program emphasizes the use of environmentally preferred products, maintenance of cleaning equipment and effective cleaning practices.</p> <p><b>Requirements:</b> Develop a Green Cleaning Program for the facility. It must include the following components:</p> <ul style="list-style-type: none"> <li>• Standard operating procedures (SOP) for cleaning activities.</li> <li>• Cleaning products certified by a third party.</li> <li>• Cleaning logs (describing the activities carried out, the times they were carried out and by whom).</li> <li>• Training for building cleaning staff.</li> <li>• Annual review and updating.</li> </ul> <p>Cleaning product must be certified by a third-party (EcoLogo or Green Seal) to reduce both occupant and building cleaning staff exposure.</p> <p>Where custodial services are contracted, communicate custodial goals and green cleaning initiatives to the contracted company. The contracted company must provide the building owner/manager with detailed maintenance SOPs. Confirm the contracted company is meeting these objectives through detailed cleaning logs supplied by the contractor.</p> <p>Demonstration of implementation is required. The program can be common to a portfolio or campus of buildings however implementation must be building-specific.</p> <p><b>Additional Information:</b> The BOMA-Accepted Equivalent is available for buildings where cleaning is performed exclusively by individual tenants. In these cases, the building owner or manager must provide tenants with a guidance document regarding developing a Green Cleaning Program for the building.</p>

### REQUIREMENT DETAILS: Green Cleaning Program

This question is a BEST Practice and is required for all levels of certification, and for all buildings types.

#### **BOMA-Accepted Equivalent: Green Cleaning Program for Tenants**

In the case where where cleaning is performed exclusively by individual tenants, the building owner or manager must provide tenants with suggested guidelines with a guidance document regarding developing a Green Cleaning Program for the building that meets the requirements listed above. Although ensuring adherence by the tenants to this program is highly encouraged, it is not required to meet this BEST Practice.





## BEST Practice 12(A): Source Separation Program

Applicable **ONLY** to Office, Enclosed Shopping Centre and Universal

Is a Source Separation Program in place at the building?	
<b>Explanation &amp; Evaluation</b>	<p><b>Description:</b> A Source Separation Program facilitates the separation of waste at the point of generation for recycling and waste destined for disposal.</p> <p><b>Requirements:</b> 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.</p> <p>The source separation program must consist of the following components:</p> <ul style="list-style-type: none"> <li>• 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 as long as 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.</li> <li>• 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.</li> <li>• 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).</li> <li>• Reasonable efforts are made to ensure that the separated waste is reused or recycled.</li> </ul> <p>Demonstration of implementation is required. The program can be common to a portfolio or campus of buildings however implementation must be building-specific.</p> <p><b>Additional Information:</b> The contamination of recyclable material does not disqualify this requirement, though continued contamination should be addressed in the Waste Reduction Work Plan.</p> <p>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.</p> <p>Buildings that have achieved a certification through the 3RCertified program can answer “Yes” and show their certification to the Verifier. <a href="#">3RCertified</a> is a certification program for buildings in the Industrial, Commercial and Institutional (IC&amp;I) sectors that reviews how organizations manage solid waste reduction and diversion operations. It is available across Canada.</p>



### **REQUIREMENT DETAILS: Source Separation Program**

This question is a BEST Practice and is required for all levels of certification, for Office, Enclosed Shopping Centres and Universal buildings. This is **not** a BEST Practice requirement for Light Industrial or Open Air Retail buildings.

#### **BOMA-Accepted Equivalent: Alternative Source Separation Program**

Alternative source separation programs are permitted in so far as the following have been met:

1. At a minimum, there must be two streams to minimize contamination;
2. The waste hauler must provide the building manager with evidence that they are compliant with the province or territory's legislation concerning waste collection and processing practices;
3. The waste hauler must provide the building manager with a letter confirming that their collection and processing practices result in capture rates of at least 80% over the year.



## BEST Practice 12(B): Waste Reduction and Diversion Policy

Applicable **ONLY** to Light Industrial and Open Air Retail

Is a Waste Reduction and Diversion Policy in place at the building?	
<b>Explanation &amp; Evaluation</b>	<p><b>Description:</b> 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.</p> <p><b>Requirements:</b> 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:</p> <ul style="list-style-type: none"> <li>• Day to day activities from all waste producing areas, including food service and retail; and</li> <li>• Periodic events such as conferences, catered meetings and functions, training, tenant relocation activities, construction, renovation and demolition projects, fit-ups, etc.</li> </ul> <p>The Policy (and any subsequent updates) must be dated and signed by Senior Management (an individual with decision-making abilities on budget expenditures).</p> <p>Demonstration of implementation is not required, nor is building-specific information. The policy can be common to a portfolio or campus of buildings.</p> <p><b>Additional Information:</b> Buildings that have achieved a certification through the 3RCertified program can answer “Yes” and show their certification to the Verifier. <a href="#">3RCertified</a> is a certification program for buildings in the Industrial, Commercial and Institutional (IC&amp;I) sectors that reviews how organizations manage solid waste reduction and diversion operations. It is available across Canada.</p>

This question is a BEST Practice and is required for all levels of certification, for Light Industrial or Open Air Retail buildings. This is **not** a BEST Practice requirement for Office, Enclosed Shopping Centres and Universal buildings.



## BEST Practice 13: Waste Audit

Applicable **ONLY** to Office, Enclosed Shopping Centre and Universal

Has a Waste Audit been completed for the building in the past three (3) years?	
<b>Explanation &amp; Evaluation</b>	<p><b>Requirements:</b> Following the <a href="#">BOMA BEST Waste Auditing Requirements</a>, the Waste Audit must address:</p> <ul style="list-style-type: none"> <li>• The time period and duration of the waste sampling.</li> <li>• The sample size (representing at least 10% of the total building’s waste and recycling materials).</li> <li>• Details specific to each collected waste stream.</li> <li>• 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).</li> </ul> <p>The resulting Waste Audit Report must include:</p> <ul style="list-style-type: none"> <li>• Summary of the sampling protocol and methodology used.</li> <li>• Annualization of daily waste as well as other waste stream such as construction, renovation and demolition (CRD) waste and hazardous materials.</li> <li>• Total of each waste stream and overall total.</li> <li>• Diversion rate.</li> <li>• Capture rate.</li> <li>• Summary of recommendations for improving waste diversion.</li> </ul> <p>The audit must be performed by a person with adequate qualifications as well as suitable training and experience.</p> <p><b>Additional Information:</b> 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. The Waste Audit must be performed at the building and must not be based on generalized waste facility averages.</p> <p>Buildings that have achieved a certification through the 3RCertified program can answer “Yes” and show their certification to the Verifier. <a href="#">3RCertified</a> is a certification program for buildings in the Industrial, Commercial and Institutional (IC&amp;I) sectors that reviews how organizations manage solid waste reduction and diversion operations. It is available across Canada.</p>



## **REQUIREMENT DETAILS: Waste Audit**

This question is a BEST Practice and is required for all levels of certification, for Office, Enclosed Shopping Centres and Universal buildings. This is **not** a BEST Practice requirement for Light Industrial or Open Air Retail buildings.

A description of the requirements for completing an audit compliant with the BEST Practice is available in the [BOMA BEST Waste Auditing Requirements](#).

For a more comprehensive description of the details on the process, and for additional suggestions (not required) on performing a valuable waste audit, download the [Waste Auditing Guiding Principles](#).

### **Important Notes:**

The person performing the Waste Audit must be competent based on the following criteria:

- i. Adequate qualifications – the person has a good working knowledge and understanding of the legislation surrounding waste;
- ii. Suitable training – the person must have training that is appropriate to performing a waste audit and which complies with provincial minimum safety training requirements; and
- iii. Sufficient experience – the person must have enough experience to safely perform the work without supervision or with only a minimal degree of supervision.



## BEST Practice 14: Waste Reduction Work Plan

Applicable **ONLY** to Office, Enclosed Shopping Centre and Universal

Is a Waste Reduction Work Plan in place at the building?	
<b>Explanation &amp; Evaluation</b>	<p><b>Description:</b> A waste reduction plan an action plan prepared in to reflect the updated waste audit.</p> <p><b>Requirements:</b> The Waste Reduction Work Plan must consist of the following components:</p> <ul style="list-style-type: none"> <li>• 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.</li> <li>• The Waste Reduction Work Plan must include, to the extent that is reasonable, plans to address the 3R's (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.</li> <li>• 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.</li> <li>• 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).</li> </ul> <p>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.</p> <p>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.</p> <p><b>Additional Information:</b> The Waste Reduction Work Plan targets the collection programs for which the building manager or owner is responsible.</p> <p>Buildings that have achieved a certification through the 3RCertified program can answer "Yes" and show their certification to the Verifier. <a href="#">3RCertified</a> is a certification program for buildings in the Industrial, Commercial and Institutional (IC&amp;I) sectors that reviews how organizations manage solid waste reduction and diversion operations. It is available across Canada.</p>

This question is a BEST Practice and is required for all levels of certification, for Office, Enclosed Shopping Centres and Universal buildings. This is **not** a BEST Practice requirement for Light Industrial or Open Air Retail buildings.



## BEST Practice 15: Environmental Policy

Applicable to Office, Enclosed Shopping Centre, Light Industrial, Open Air Retail, and Universal

Is an overarching Environmental Policy guiding the building's management?	
<b>Explanation &amp; Evaluation</b>	<p><b>Description:</b> An Environmental Policy or vision establishes the direction building management wishes to take on 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.</p> <p><b>Requirements:</b> Create an overarching Environmental Policy (or vision) which contains the following components:</p> <ul style="list-style-type: none"><li>• 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 on 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.).</li><li>• Enter the vision statement for each assessment category in the space provided in the online portal.</li></ul> <p><b>Additional Information:</b> 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.</p> <p>Demonstration of implementation is not required, nor is building-specific information. The policy can be common to a portfolio or campus of buildings.</p>

This question is a BEST Practice and is required for all levels of certification, for all building types.



## BEST Practice 16: Occupant Environmental Communication Program

Applicable to Office, Enclosed Shopping Centre, Light Industrial, Open Air Retail, and Universal

Is an Occupant Environmental Communication Program in place at the building?	
<b>Explanation &amp; Evaluation</b>	<p><b>Description:</b> 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.</p> <p><b>Requirements:</b> The Occupant Environmental Communication Program must address the following components:</p> <ul style="list-style-type: none"> <li>• Selecting the communication strategies that will be used;</li> <li>• Selecting the activities that will be encouraged;</li> <li>• Identifying responsible individuals among management for moving each aspect of the plan forward; and</li> <li>• Creating a timeline for implementation.</li> <li>• Demonstrate that at least two (2) communication strategies have been implemented in the past 12 months.</li> </ul> <p>Demonstration of implementation is required. The program can be common to a portfolio or campus of buildings however implementation must be building-specific.</p> <p><b>Additional Information:</b> <i>Occupants</i> 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.</p>

### REQUIREMENT DETAILS: Occupant Environmental Communication Program

This question is a BEST Practice and is required for all levels of certification, for all building types.

Building management must have in place an Occupant Environmental Communication Program for communicating with tenants and building staff on environmental issues specific to the building. Components of this Program must have been implemented within the past 12 months.

*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.

The key aspects of effective communication are: **frequency, accuracy, comprehensiveness and inclusiveness**. To ensure that building occupants work together with building management to achieve environmental goals, regular communication must be executed. As such, the Program must clearly outline communication strategies, activities, responsibilities and timelines for implementation. The following communication framework must be evident:

- Communication strategies: clearly describe the communication strategies that will be used with tenants/occupants.





- **Activities:** clearly describe the activities/events that will be communicated to occupants (e.g., Earth Day event or energy awareness campaigns with “turn off your monitor” stickers).
- **Responsibilities:** clearly describe who will be responsible for each aspect of the Occupant Sustainability Communications Program.
- **Timeline for implementation:** clearly describe the timeline for implementation of all activities, events, and strategies put in place in the context of the Occupant Sustainability Communications Program.

The communication program must also include specific initiatives to effectively engage tenants and building staff around environmental/sustainability issues, and encourage them to work with building management to drive performance improvements in the building. At least two (2) initiatives must have been implemented in the last 12 months. The table below provides suggestions on possible communication objectives and how they may be implemented (for guidance purposes only):

Objective	Possible Communication and Implementation Ideas
To increase engagement:	<ul style="list-style-type: none"> <li>• Create a Management/Tenant task force or Green Team with all major stakeholders represented (e.g. tenant representatives, cleaners/janitors, and building management) to develop, promote, and implement environmental/sustainability initiatives.</li> <li>• Designate one or more of the Management Team to be the property’s Environmental Ambassador to lead the program.</li> <li>• Hold tenant meetings to educate them about the new environmental program.</li> <li>• Develop a calendar that highlights the year’s planned engagement opportunities with tenants or building occupants. Send an announcement letter to each tenant.</li> </ul>
If you want to launch an event:	<ul style="list-style-type: none"> <li>• Host environmental/sustainability related events or competitions for occupants and tenants:               <ul style="list-style-type: none"> <li>○ Sustainable commuting challenges; battery/lightbulb/electronic recycling drives.</li> <li>○ BBQs (waste free if possible) or other functions to celebrate global events such as Earth Week in April, Energy Conservation Week in May, Waste Reduction Week in October.</li> </ul> </li> </ul>
If you want to incentivize new behaviour:	<ul style="list-style-type: none"> <li>• Establish incentive programs to promote participation in environmentally preferable/sustainable practices and performance improvements:               <ul style="list-style-type: none"> <li>○ Rewards and recognition for individuals and/or tenant organizations who are implementing sustainable best practices,</li> <li>○ Discounts or financial incentives for tenants and building staff to encourage more sustainable choices/behaviours (such as discounted transit passes, discounts to local businesses that provide environmentally preferable products or services, or financial incentives for building staff who bike to work).</li> </ul> </li> </ul>



<p>If you want to relay management's activities and results:</p>	<ul style="list-style-type: none"><li>• Post and/or distribute and/or e-mail notices of audit results, new environmental programs and policies, performance summaries (for building energy or water consumption).</li><li>• Create a building website highlighting the environmental performance of the building.</li><li>• Regularly communicate environmental/sustainability goals (related to the building's sustainability policy/statement), achievements, and performance improvement tips to tenants and building occupants through a variety of relevant communications channels:<ul style="list-style-type: none"><li>○ Newsletters, eNewsletters, Memos.</li><li>○ Lobby/Common Area Posters, Screens or central Communications Board.</li><li>○ Elevator Messaging (e.g. ENN).</li><li>○ Website and Social Media (e.g. Twitter, Facebook).</li><li>○ Tenant-Landlord Collaboration Opportunities (e.g. Natural Resource Canada Sustainability Initiatives-metering reporting).</li></ul></li></ul>
--	--

**Important Note:**

In the case where the applicant has developed an Energy, Water or Waste Communication Program to comply with previous BEST Practices, these plans cannot be reused here. Additional communication efforts will be required to meet these BEST Practices. The topic may be the same, but the scope or objective must be broadened in order to qualify.



### 4.3. BEST Practices for MURB and Health Care Facilities

#### Energy

Applicable **ONLY** to MURB and Health Care Facilities

1.3.2.1	Has the building conducted an energy assessment within the past five (5) years?
Tip:	<p>This question is a BEST Practice and is required for all levels of certification. Documentation demonstrating this BEST Practice must be uploaded.</p> <p>A minimum of an ASHRAE Level 1 Walk-through audit or equivalency is required that includes:</p> <ul style="list-style-type: none"> <li>• Utility billing analysis with benchmarking observations</li> <li>• Summary of major equipment and type of lighting systems in the buildings</li> <li>• List of potential energy conservation opportunities, estimated savings, and simple payback, based on walk-through audit of the facility</li> </ul> <p>The assessment report must identify low-cost improvements and potential capital improvements as well as issues for a future more-detailed audit.</p> <p>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.</p>
1.3.3.1	Is there a building-specific Energy Management (reduction) Plan to address issues raised in the energy assessment?
Tip:	<p>This question is a BEST Practice and is required for all levels of certification. Documentation demonstrating this BEST Practice must be uploaded.</p> <p>The Energy Management Plan must document building-specific measures to improve building energy efficiency and reduce demand based on the most recent energy assessment and targets. These measures should be based on a clearly identified energy performance target, identified through the energy assessment or by the operational staff. The Plan must show allocated resources, estimated payback, and implementation timelines for specific energy efficiency improvements.</p> <p>The BOMA-Accepted Equivalent is available for buildings that have been occupied for fewer than two (2) years.</p>
1.3.8.14	Is there a preventive maintenance program for the HVAC (heating, ventilating, and air-conditioning)?
Tip:	<p>This question is a BEST Practice and is required for all levels of certification. Documentation demonstrating this BEST Practice must be uploaded.</p> <p>Preventive 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 Preventive Maintenance Program</p>



	is a systematic approach that outlines what equipment must be reviewed, the corrective action that must be taken and how frequently this must occur.
--	--

### 1.3.2.1 Energy Assessment

An energy assessment report must be presented for on-site verification. Requirements are outlined in the tip language and must include the following information:

1. Owner/manager information;
2. Building name and address;
3. Building description;
4. Energy assessment (walk-through, analysis);
5. Utility billing analysis with benchmarking observations (e.g. a comparison of building performance indices such as MJ/m<sup>2</sup>/yr or kWh/ft<sup>2</sup>/yr for each energy source);
6. Summary of major equipment and type of lighting systems in the building; and
7. List of potential energy conservation opportunities, estimated savings, and simple payback based on walk-through audit of the facility.

#### IMPORTANT NOTES:

- I. The Energy Assessment may be completed by in-house technical staff or by a third party consultant (e.g. professional engineer or other appropriate energy consultant).
- II. Assessments are evaluated based on meeting the requirements outlined in the question tip language. Energy assessments **MUST BE DATED** and **SIGNED** by the person responsible for conducting the work.
  - BOMA BEST verifiers will look for signature and date. An Energy Assessment must have been conducted within the last five (5) years of the **date the BOMA BEST verification assessment was conducted**.

#### BOMA-Accepted Equivalents

##### 1. Energy Study Report

Buildings that have been occupied for fewer than two (2) years may utilize an energy study report that was prepared during the design of the building in lieu of a post-construction energy audit report. This report must have shown simulated energy consumption for different design scenarios, and identify which options were chosen for the actual construction. Applicants must be able to demonstrate that these energy-reduction features were incorporated in the building.

##### 2. Energy Communications Plan

Where 75% or more of the building's energy is purchased directly by tenants, applicants may prepare an Energy Communication Plan in lieu of an Energy Study Report.

This communication plan must document means of encouraging energy conservation initiatives by occupants. For example, the communication plan may include the following offerings by the landlord/management company:

- Providing walk through energy audit or assessment services.



- Delivery of “energy conservation tips” brochures to occupants.
- Energy conservation seminars for tenants / occupants.
- Other communication tools: posters, “turn it off stickers”, etc.

Evidence of implementation may include the following:

- Agendas and notes from tenant-building management meetings.
- Copies of marketing materials used to promote energy conservation within the building.
- Copies of communication to tenants/occupants regarding energy conservation.
- Copies of energy assessments or audits performed in tenant spaces.

**IMPORTANT NOTES:**

- I. Applicants must make available the communication plan and evidence of its implementation to the verifier, as part of the on-site tour.

**1.3.3.1 Energy Management Plan**

The Energy Management Plan should identify and document building-specific measures to improve energy efficiency and reduce demand. These measures should be based on a clearly identified performance target (using quantifiable performance indicators), identified through the energy audit or the operational staff.

All actions must be evaluated for their technical feasibility and expected results (estimated energy savings and pre-feasibility study) as well as financial feasibility (through an economic cost/benefit analysis such as simple payback or ROI). These actions must be integrated into a timeline.

A documented plan for implementing energy conservation strategies is illustrated in the table below as an example of minimum requirements. A more detailed table is strongly encouraged, especially one which allows for continuous energy tracking.

**Energy Management Plan – Sample Form**

No.	Proposed Measure	Budget	When	Expected Return	Responsible Person(s)
1	Day time cleaning	\$ --.00	2017	4 years	Jean Paul Kim
2	Re-commissioning feasibility study	\$ --.00	2018	18 months	Alexa Moreno

Natural Resources Canada provides a comprehensive roadmap for developing and implementing an Energy Management Plan titled [Energy Management Best Practices Guide – For Commercial and Institutional Buildings](#).

These practices are clearly stated as minimal best practices according to the *2011 ASHRAE Handbook HVAC applications* (chapter 36; chapter 41). If the energy reduction plan is done through an ESCO project, energy savings should be measured according to EVO Standards (Efficiency Valuation Organization) and *ASHRAE guideline 14-2002 Measurement of energy and demand savings*.



### **BOMA-Accepted Equivalent**

Buildings that have been occupied for fewer than two (2) years can meet this BEST Practice by demonstrating that an Energy Commissioning Plan has been put into place. The intent of this BOMA-accepted equivalent is to ensure that the building's major systems and equipment are being optimized/fine-tuned for specific seasonal requirements, occupancy variability, etc.

The Energy Commissioning Plan must clearly demonstrate that the following actions have been considered and implemented in the previous twelve (12) months – as per *2011 ASHRAE Handbook HVAC applications* (chapter 36; chapter 41):

1. An energy measurement or assessment plan for major operating systems and equipment AND an energy bill evaluation and follow up plan;
2. If a deficiency report has been generated (from the construction process) regarding building systems, plans to address these deficiencies must be included in the Energy Commissioning Report.
3. A person identified as responsible for the building energy performance;
4. Training for operations staff on performing the above.

#### **IMPORTANT NOTES:**

- The Energy Commissioning Plan may be created and implemented by an “in-house” operational staff or by a third-party consultant (e.g. professional engineer or other appropriate energy consultant).
- The energy measurement or assessment plan for major systems and equipment shall include all operating systems and equipment that represent the greatest proportion of energy consumption in the building (e.g. heating system; cooling system, etc.).
- It is not always possible to assess the operations of major operating systems and equipment through the ongoing review of energy bills. Other methods of assessment include: tenant satisfaction surveys, control sequence review, etc.
- The Energy Commissioning Plan must specifically identify the individuals responsible for the energy measurement of major operating systems and equipment, as well as those individuals responsible for energy bill review.
- One person must be identified as being responsible for the overall energy commissioning plan.



### 1.3.8.14 Preventative Maintenance Program

It is necessary to undertake preventative maintenance to maintain optimal performance of the building’s mechanical, electrical, and ventilation systems and their components. The building systems require periodic maintenance throughout their life cycle in addition to the need for overhauling, or replacement, at a certain age or interval, or due to specific issues or causes. These must be outlined specifically in a Preventative Maintenance Program.

The Preventive Maintenance Program must include the methodology and record for all actions that are necessary to maintain the optimal functioning of the building’ systems and their components. The required maintenance procedures will be unique to each property and the systems within these facilities. The Preventative Maintenance Program must contain the following:

1. An inventory of which system or component must be reviewed and the type of action that is required (e.g. by room or by equipment type);
2. Guidelines on how frequently these actions must be taken (e.g. monthly, quarterly, yearly, etc.). These guidelines should be based on standards such as manufacturer specifications, code requirements and industry best practices;
3. Documentation that these actions have been taken (e.g. via signature and date);
4. Confirmation that follow-up action has been taken when warranted; and
5. Record updates as new equipment is added or removed.

In addition to manual recording of this information many buildings may have online tracking software that outlines and tracks the Maintenance Program. These are acceptable if the software can monitor and track items 1-5, listed above.

The following is an example of a Preventative Maintenance Program. The items listed below constituted a sample only.

System	Component	Action Taken	Date Completed	Signature	Comments
<b>Annually</b>					
HVAC	Outdoor Air Intakes	Clear obstructions, bird droppings, standing water, proximity to cooling towers, trash compactors, exhausts and other pollutant sources.			
HVAC	Ventilation	Minimum outdoor air damper setting.			
HVAC	VAV Box	Minimum VAV box settings.			
HVAC	Ventilation	Duct and terminal coil cleanliness.			
HVAC	Duct insulation	Check for cleanliness, adhesion, and coating.			



System	Component	Action Taken	Date Completed	Signature	Comments
	liner				
HVAC	Cooling towers	Water treatment functioning as intended.			
FIRE	Fire Systems	Open fire dampers.			
HVAC/ ELEC	Measurement Devices and Sensors	Calibration of sensors (temperature, humidity, pressure, occupancy, photocell etc.).			
ELEC.	Controls (digital, pneumatic)	Ensure the proper functioning of all controls systems.			
<b>Semi-annually</b>					
HVAC	Building Equipment	Floor and equipment drain traps – properly sealed.			
HVAC	HVAC	Air quality measurements in select occupied areas of the building.			
<b>Quarterly</b>					
ELEC	Controls (digital, pneumatic)	Operation of outdoor damper actuators.			
ELEC	Lighting	Ensure all emergency lighting is functioning properly.			
<b>Monthly</b>					
HVAC	Ventilation	Air filter loading.			
ELEC.	Lighting	Change lamps as required.			
ELEC.	Generator	Generator testing.			

Additional references: ASHRAE 62.1-2010 “[The Standards for Ventilation and Indoor Air Quality](#)”.





## Water

### Applicable **ONLY** to MURB and Health Care Facilities

2.3.1	Is there a written policy intended to minimize water use, and encourage water conservation?
Tip:	<p>This question is a BEST Practice and is required for all levels of certification. Documentation demonstrating this BEST Practice must be uploaded.</p> <p>A water conservation policy must express a commitment to reduce demand for water and to establish goals and strategies to reduce water consumption.</p>
2.3.4	Has the building conducted a water assessment within the past five (5) years?
Tip:	<p>This question is a BEST Practice and is required for all levels of certification. Documentation demonstrating this BEST Practice must be uploaded.</p> <p>The water assessment report must include:</p> <ul style="list-style-type: none"> <li>• Water billing analysis including cost and consumption history;</li> <li>• Water intensity benchmarks;</li> <li>• Water-using equipment inventory and end-use analysis;</li> <li>• List of potential water conservation measures including maintenance procedures and retrofit measures;</li> <li>• Estimated costs, savings and payback times for recommended measures.</li> </ul> <p>The water assessment report may be incorporated into the energy assessment report.</p> <p>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.</p>

#### 2.3.1 Water conservation Policy

A water conservation policy should express a commitment to reduce demand for water and to establish goals and strategies to reduce water consumption.

The water conservation policy may be a national, corporate policy for all buildings managed by a single company. However, to meet this BEST Practice, building management must demonstrate its awareness of the policy, and is implementing specific measures in accordance with its strategic guidance.

#### IMPORTANT NOTES:

- I. For on-site verification applicants must make available:
  - A copy of the required policy;
  - Examples of how the policy is being implemented on-site by property management; and
  - Documents demonstrating the policy's implementation must be dated.
- II. Policy should be an official document on a company's website (internal and/or external); and/or printed on company's letterhead with appropriate management signature.



### 2.3.4 Water Assessment

A Water Assessment report must be reviewed by the verifier. Requirements are outlined in the tip language (noted in the BEST Practice questions table) and must include the following information:

#### Building Information

- Owner/manager information;
- Building name and address;
- Building description;
- Date of water assessment

#### Water Use Analysis

- Water billing analysis including cost and consumption history compiled from utility bills;
- Water intensity benchmarking which includes a calculation of annual water use divided by building area;
- Water-using equipment inventory and end-use analysis compared with consumption, such as:
  - Domestic water fixtures (faucets, toilets, urinals);
  - Water using appliances (dishwasher, washing machine etc.);
  - Cooling equipment including cooling towers, equipment “once-through” cooling and customized tenant cooling equipment;
  - Landscape irrigation equipment;
  - Water use for humidification equipment;
  - Water use from heating equipment (boiler blowdown, steam production and condensate management);
  - Any specialized equipment (including production use).
- Recommended Measures:
  - List of identified retrofit and operation and maintenance water conservation measures;
  - Estimated costs, savings and payback period of measures;
  - Explore sub-meter opportunities for large water-using tenants.

#### IMPORTANT NOTES:

- I. The Water Assessment may be completed by in-house technical staff or by a third party consultant (e.g. professional engineer or other appropriate water consultant).
- II. Assessments are evaluated based on meeting the requirements outlined in the tip language and by date. Water assessments **MUST BE DATED** and **SIGNED** by the person responsible for conducting the work.
  - BOMA BEST verifiers will look for signature and date. A Water Assessment must have been conducted within the last five (5) years of the **date the assessment was conducted**.
- III. The Water Assessment report may be combined with the Energy Assessment report.



## BOMA-Accepted Equivalents

### 1. Water-using equipment inventory

Buildings that have been occupied for fewer than two (2) years OR have buildings with no water meter may submit a Water-using Equipment Report which can be created with information contained in the building's Operation and Maintenance Manual, As Built Drawings and Commissioning Report.

The Water-using Equipment Report must include the following information:

#### Building Information

- Owner/manager information;
- Building name and address;
- Building description;
- Date of equipment inventory.

#### Water-using Equipment Information

- Inventory/survey of all water consuming equipment on facility premises and their locations throughout the building, such as:
  - Domestic water fixtures (faucets, toilets, urinals);
  - Water using appliances (dishwasher, washing machine etc.);
  - Cooling equipment including cooling towers, equipment "once-thru" cooling and customized tenant cooling equipment;
  - Landscape irrigation equipment;
  - Water use for humidification equipment;
  - Water use from heating equipment (boiler blowdown, steam production and condensate management);
  - Any specialized equipment (including production use).
- Baseline consumption of this equipment based on data from the building automation system and water sub-meters OR based on equipment performance estimates informed by manufacturer specifications PLUS an estimated calculation of the equipment's annual consumption, such as:
  - Sinks and faucets: aerator output multiplied by estimation of annual use;
  - Toilets and urinals: flush output multiplied by estimation of annual use;
  - Showerhead: output of the showerhead multiplied by estimation of annual use;
  - Cooling towers: estimate make-up water required to compensate for losses due to evaporation, drift and splash-out, leaks and overflow, and bleed or blowdown.
    - Evaporation: Directly related to heat transfer and operational management. Assume approximately 1.8 GPH (centrifugal) or 3.7 GPH (absorption) per ton of cooling multiplied by the load percentage.
    - Bleed/blowdown: Losses represent a non-linear function of the concentration cycles (purity of make-up water over the purity of the recirculating water). Higher cycles mean fewer blowdowns are needed.



- Drift and splash-out: Losses are not significant for well-maintained towers under normal conditions. Assume approximately 0.014 GPH per ton of cooling or about 0.008% of recirculating water.
- Leaks and overflows: These are difficult to measure or estimate and losses are not significant in well-maintained towers. Visual inspection for leaks should be performed.
- Irrigation system: output of the sprinklers multiplied by operating hours.
- Recommended Measures:
  - List of identified retrofit and operation and maintenance water conservation measures;
  - Estimated costs, savings and payback period of measures;
  - Establish water reduction target.
  - Explore feasibility of installing base building meter if not present
  - Explore sub-meter opportunities for the cooling tower make-up line.

## 2. Water Communications Plan

Where 75% or more of the building's water is purchased directly by tenants, applicants may prepare a Water Communication Plan in lieu of a Water Assessment report.

This communication plan must document means of encouraging water conservation initiatives by occupants. For example, the communication plan may include the following offerings by the landlord/management company:

- Providing walk through water audit or assessment services of tenant spaces.
- Delivery of "water conservation tips" brochures to occupants.
- Water conservation seminars for tenants/occupants.
- Other communication tools: posters, "shut-it-off stickers", etc.

Evidence of implementation may include the following:

- Agendas and notes from tenant-management team meetings.
- Copies of marketing materials used to promote water conservation measures.
- Copies of communication to tenants/occupants regarding water conservation tips/opportunities.
- Copies of water use assessments or audits done in tenant spaces.

### IMPORTANT NOTES:

- I. Applicants must make available the communication plan and evidence of its implementation for review to the verifier, as part of the on-site tour.



## Waste Reduction

Applicable **ONLY** to MURB and Health Care Facilities

3.1.1.1	Is there a waste diversion program that incorporates the recycling of materials such as: paper and cardboard; bottles and cans; food waste; and plastics for occupants, visitors and operations at the site, to the extent that local infrastructure is available to accommodate these materials?
Tip:	<p>This question is a BEST Practice and is required for all levels of certification. Documentation demonstrating this BEST Practice must be uploaded.</p> <p>The property must have an active recycling program. A BOMA-accepted equivalent may suffice in particular situations.</p>
3.1.2.13	Is there a written policy intended to minimize construction waste being sent to landfill?
Tip:	<p>This question is a BEST Practice and is required for all levels of certification. Documentation demonstrating this BEST Practice must be uploaded.</p> <p>Construction and demolition waste - which accounts for about 30% of Canada's landfill - can be reduced by implementing a source separation and recycling program on-site. The program must meet the minimal requirements of the jurisdiction (e.g. 3R Code of Practice). The waste specifications should address recycling of corrugated cardboard, metals, concrete blocks, clean dimensional wood, plastic, glass, gypsum board and carpet.</p>

### 3.1.1.1 Waste Diversion Program

To meet this BEST Practice, applicants must implement a waste diversion program that aims to reduce total volume of waste generated, and divert as much volume of materials from landfill as possible. Waste minimization and diversion is done through a reuse and recycling program available on-site to all building occupants.

Waste diversion programs should strive to achieve high diversion rates of standard fibre and container streams, as well as hazardous materials such as toner cartridges, fluorescent lamps and electronic equipment. Composting of organic material, either on site or through an off-site contractor, should also be included in this program, where possible.

#### BOMA-Accepted Equivalents

##### 1. Tenant Coordinated Waste Diversion

Where tenants are directly managing their own waste removal, the building applicant must confirm tenant(s)'s waste diversion efforts.

In the absence of tenant material recycling/reuse, the applicant must demonstrate it has made an effort to provide recycling facilities.

- For example, in retail plazas, each individual tenant (retail unit) may produce a small volume of recyclables; the property manager may provide a common recycling area for tenants as a value-added service (and to make recycling more cost-effective).



## 2. Lack of Recycling Facilities

Where recycling facilities may not be available, the applicant must provide a confirmation letter from the local municipality, provincial government, or other appropriate body as evidence. Where recycling facilities are available, but the local municipality does not collect recyclables, the applicant must demonstrate that reasonable efforts to contract a commercial hauler were made.

### 3.1.2.13 Construction Waste Policy

The construction waste policy must clearly identify the applicant's commitment to reducing construction and demolition waste from being sent to landfill. The Policy should meet the minimal requirements of the jurisdiction (e.g. 3R Code of Practice) by implementing a source separation and recycling program on-site. The waste specifications should address recycling of corrugated cardboard, metals, concrete blocks, clean dimensional wood, plastic, glass, gypsum board and carpet.

The Construction Waste Policy may be a national, corporate policy for all buildings managed by a single company. However, to meet this BEST Practice, building management must demonstrate awareness of the policy and show that it is implementing specific measures in accordance with its strategic guidance.

#### IMPORTANT NOTES:

- I. For on-site verification, applicants must make available:
  - A copy of the required policy;
  - Sample specification must be made available for review and specification may include:
    - Documentation of a recent renovation contract that specifies materials for reuse, resale and diversion.
    - Tenant design guidelines that specify materials for reuse, resale and diversion.
    - Corporate or on-site program specifications for the diversion of demolition, construction and renovation materials.
  - Examples of how the Policy is being implemented on-site by property management; and
  - Documents demonstrating the Policy's implementation must be dated.
- II. The Policy should be an official document on a company's website (internal and/or external); and/or printed on company's letterhead with appropriate management.



## Emissions and Effluents

### Applicable **ONLY** to MURB and Health Care Facilities

4.2.2	Is there a documented management plan for Ozone Depleting Substances (ODS) that includes:
Tip:	<p>This question is a BEST Practice and is required for all levels of certification. Documentation demonstrating this BEST Practice must be uploaded.</p> <p>Maintenance of the refrigeration system can reduce operating costs by improving the chiller performance, avoiding costly repairs, and reducing the need for refrigerant replacement. If there are no ODS, mark "not applicable".</p>
i) Inventory of refrigerants and records?	
Tip:	Inventory should show the present ODS and records should show the historical quantities of ODS.
ii) Maintenance reports, loss reports, and leak test results?	
iii) Operational staff training?	
Tip:	Environmental awareness courses should include course content on “Refrigerant Control” or “CFC Handling” that has been developed by the Heating, Refrigeration and Air Conditioning Institute of Canada (HRAI) and Environment Canada. These courses are typically one day in length. When the maintenance of the equipment is outsourced, the contractor should provide evidence of meeting the staff training requirements.
iv) Periodic leak testing?	
4.2.2.5	Is there a phase-out plan for ozone-depleting refrigerants?
Tip:	<p>This question is a BEST Practice and is required for all levels of certification. Documentation demonstrating this BEST Practice must be uploaded.</p> <p>Effective January 1, 2015, operating or allowing the operation of a chiller containing CFC will be prohibited. If there are no ODSs, mark "Not Applicable".</p>
4.4.1.1	Has a hazardous building materials survey and a use-related chemical inventory been completed within the last three years?
Tip:	<p>This question is a BEST Practice and is required for all levels of certification. Documentation demonstrating this BEST Practice must be uploaded.</p> <p>A <b>Hazardous Materials Survey</b> should include only building-related hazardous materials and must indicate, at a minimum, whether the following four hazardous building materials are present in the building: Asbestos-containing materials (e.g., insulation coverings, putties and caulking, older equipment); Polychlorinated biphenyls (PCBs) (e.g., old fluorescent lighting ballasts, transformers); Lead (e.g., lead in paint); and Mercury (e.g., thermostats, lighting). The</p>



	<p>survey must indicate the type of hazardous materials present in the building, its location, the quantity, its condition, and a list of recommended actions to meet province-specific regulatory requirements with respect to maintenance, inspection, training and abatement.</p> <p>In addition, a <b>Hazardous Chemicals or Use-Related Products Inventory</b> must also be conducted and include pesticides, at a minimum. This Inventory must include a list of chemicals or use-related products brought into the building for use, handling and storage; location, Safety Data Sheets for each chemical or use-related product; approximate quantities; and a live index of the chemicals or use-related products including the chemical name and page reference for easy access to Safety Data Sheets (SDS) and other relevant information related to each chemical.</p>
4.5.2.2	Is there a Hazardous Products (hazardous chemicals) Management Plan?
Tip:	<p>This question is a BEST Practice and is required for all levels of certification. Documentation demonstrating this BEST Practice must be uploaded.</p> <p>A hazardous products management plan should indicate how controlled products are received at the facility, how they are to be used and safe disposal procedures. It should also include the provision of WHMIS sheets for all products identified in the inventory. Chemicals used in buildings that are classified as hazardous include oils, biocides, solvents, insecticides, pesticides and herbicides. Biomedical waste (including cytotoxic waste) and pharmaceutical waste must also be included. They should be stored in rooms with proper ventilation, controlled temperatures, drain protection and adequate shelf space. Containers should be capped to avoid possible spills and fumes, properly labelled and kept in securely locked areas.</p>

#### 4.2.2 Management Plan for Ozone Depleting Substances

Ozone Depleting Substances (ODS) may be found in buildings and include CFCs, HCFCs, halons and other substances used in refrigerants, fire extinguishing systems and chemicals (sterilizing agents and solvents).

Applicants must present a management plan for ODS that includes the following:

1. Inventory of refrigerants and records;
2. Maintenance reports, loss reports, and leak test results;
3. Operational staff training; and
4. Periodic leak testing.

Applicants may opt to implement the elements of their ODS management plan using either in-house staff or using third-party contractors. Personnel (in-house or third-party) performing any ODS related work must be appropriately trained to manage associated risks.

##### 4.2.2.5 Phase-Out of Ozone Depleting Refrigerants

Applicants must be able to provide an implementation plan that demonstrates a phase-out of ozone depleting refrigerants in accordance with *Canada's Strategy to Accelerate the Phase-Out of CFC and Halon Uses and to Dispose of the Surplus Stocks* (Phase-Out Strategy).

Federal regulations under the Canadian Environmental Protection Act (CEPA) – *Ozone-depleting Substances Regulations, 1998 (SOR/99-7)* – specify a complete phase-out of CFCs in all refrigeration and





chillers by 2020. Canada's Phase-Out Strategy is part of the on-going process to fulfill Canada's commitment to protect the earth's ozone layer.

To learn more about the Phase-Out Strategy: download the official document at the following link: [http://www.ccme.ca/files/Resources/air/ods/phase\\_out\\_cfc\\_1316\\_e.pdf](http://www.ccme.ca/files/Resources/air/ods/phase_out_cfc_1316_e.pdf)

#### IMPORTANT NOTES:

- I. Applicants must refer to the Canadian federal regulation with regards to phasing out of all ODS by 2020. For more information see Environment Canada's Ozone Depleting Substances webpage: <http://www.ec.gc.ca/ozone/default.asp?lang=En&n=D57A0006-1>.
- II. A plan to use HCFCs such as refrigerant R-123 is acceptable as an interim solution, until a viable substitute with zero ozone depletion potential becomes available.

### 4.4.1.1 Hazardous Building Materials Survey and Hazardous Chemicals or Use-Related Products Inventory

#### 1. Hazardous Materials Survey

A survey of hazardous building materials present at the facility should include only building-related hazardous materials. As a minimum requirement for meeting this BEST Practice, the hazardous materials survey must indicate whether the following are present:

- Asbestos-containing materials (e.g., insulation coverings, putties and caulking, older equipment);
- Polychlorinated biphenyls (PCBs) (e.g., old fluorescent lighting ballasts, transformers);
- Lead (e.g., lead in paint); or
- Mercury (e.g., thermostats, lighting).

#### Hazardous Materials Survey Requirement:

The survey for hazardous building materials are performed typically room by room, or by area. Samples may be required to confirm presence of hazardous building materials. All building owners or tenants must verify sampling requirements with the province specific regulation governing sampling methodology for hazardous building materials. A comprehensive survey should have the following information at a minimum for BOMA BEST verification purposes:

- Type of hazardous materials present in the building;
- Location of the hazardous materials;
- The extent of the hazardous material within the building;
- The approximate quantity of hazardous material in each area;
- The condition or state of the hazardous material (i.e. poor, fair, good); and
- A list of recommended actions to meet province specific regulatory requirements with respect to maintenance, inspection, training and abatement.

The survey should be reviewed at least annually and updated as necessary.

#### IMPORTANTE NOTES:

- I. If the hazardous materials survey was done at the time of acquisition and, if no other hazardous building materials were brought into the building, or found, and, if no changes in building



materials have been implemented since the original survey, then a formal statement to this effect will be sufficient for verification purposes. The statement must clearly reference the previous hazardous materials survey and the policies that have been put in place to ensure that no additional hazardous materials have been brought into the building and that existing building materials have not been replaced.

- II. Buildings with multiple tenants must have a Hazardous Building Materials Survey that includes all tenant spaces. Building owners are responsible for ensuring that the building in its entirety is represented in the Hazardous Building Materials Survey.
- III. The following criteria applies to establish competency with respect to the person(s) or organization (internal or external to the building), that has completed the Hazardous Building Materials Survey:
  - Has a good working knowledge and understanding of the legislation surrounding hazardous materials (i.e. training certificates or educational background in hygiene, occupational health and safety, environmental engineering, building science or similar);
  - Has at least one year of work experience conducting hazardous building materials surveys; and
  - Has led the completion of at least five Hazardous Building Materials Surveys.

## **2. Hazardous Chemicals or Use-Related Products Inventory**

Every building that uses hazardous chemicals or use-related products shall keep and maintain a record of the chemicals or use-related products in the work place that are used, handled, or stored in the building.

A use-related product is defined as anything that is brought into the building and can include a hazardous chemical. A hazardous chemical is defined as a dangerous good which could be a solid, liquid, or gas that can harm people, other living organisms, property, or the environment.

As a minimum requirement for meeting this BEST Practice, the Hazardous Chemicals or Use-Related Products Inventory must indicate whether the following is present:

- Pesticides

Hazardous Chemicals or Use-Related Products Inventory Requirement:

Although not required in this BEST Practice, best management practices dictate that all other Hazardous Chemicals or Use-Related Products brought into or used in the building should also be included in this Inventory.

The hazardous chemical or use-related product inventory must include at a minimum the following information for BOMA BEST verification purposes:

- A list of chemicals or use-related products brought into the building for use, handling and storage;
- The location where the chemical(s) or use-related products are used, handled and stored;
- Material Safety Data Sheets for each chemical or use-related product used, handled and stored;
- The approximate quantities of each chemical or use-related product stored on site; and



- A live index of the chemicals or use-related products including the chemical name and page reference for easy access to Material Safety Data Sheets (MSDS) and other relevant information related to each chemical.

The inventory should be reviewed at least annually and updated as necessary.

**IMPORTANT NOTES:**

- I. A Safety Data Sheet (SDS), as required by this BEST Practice, is a document that contains information on the potential hazards (health, fire, reactivity and environmental) and how to work safely with the chemical product. It is an essential starting point for the development of a complete health and safety program. It also contains information on the use, storage, handling and emergency procedures related to the hazards of the material.
- II. Tenants, as well as building owners, are required to have an up-to-date Hazardous Chemical or Use-Related Product Inventory. It is the responsibility of every tenant to provide the Building Owner with an up-to-date Use-Related Product Inventory records for Pesticides only (for the purposes of this BEST Practice). It is the responsibility of every Building Owner to provide the most up-to-date building operations Use-Related Product Inventory records for Pesticides only to BOMA BEST verifiers. It is an industry best management practice for building owners to keep an up-to-date record of all tenant Hazardous Chemical or Use-Related Product Inventories; however, it is not necessary to meet this requirement.
- III. There are no specific competency requirements for compiling a Hazardous Chemical or Use-Related Product Inventory however, the individual conducting the inventory must have good working knowledge and understanding of the applicable regulatory requirements, including at a minimum, WHMIS.

#### **4.5.2.2 Hazardous Products Management Plan**

A Hazardous Products Management Plan should indicate how controlled products are received at the facility, how they are to be used and safe disposal procedures. It should also include the provision of Workplace Hazardous Materials Information System (WHMIS) sheets for all products identified in the inventory. Chemicals used in buildings that are classified as hazardous include oils, biocides, solvents, insecticides, pesticides and herbicides.

Hazardous products should be stored in rooms with proper ventilation, controlled temperatures, drain protection and adequate shelf space. Containers should be capped to avoid possible spills and fumes, properly labelled and kept in securely locked areas.

**Additional Information and Resources:**

BOMA BEST is a leader in building management and has identified this technical requirement as a best management practice. Its completion does not preclude users from understanding and meeting their legal responsibilities regarding compliance with federal, provincial or municipal legislation.

The rights and responsibilities of workers, responsibilities of employers and supervisors are similar in all jurisdictions across Canada. However, the details of the OH&S legislation and how the laws are enforced vary from one jurisdiction to another. In addition, provisions in the regulations may be "mandatory",



"discretionary" or "as directed by the Minister." More information on where to find province specific regulatory requirements and guidance documents can be found on province specific Occupational Health and Safety websites or through the various Ministries of Labour. BOMA BEST encourages building managers and owners to understand and apply province specific OH&S regulatory requirements as they apply to hazardous materials and hazardous chemicals management.



## Indoor Environment

### Applicable **ONLY** to MURB and Health Care Facilities

5.1.8.1	Does building management have in place a documented means for addressing tenant/occupant concerns regarding indoor air quality (such as a complaint form and incident log)?
Tip:	<p>This question is a BEST Practice and is required for all levels of certification. Documentation demonstrating this BEST Practice must be uploaded.</p> <p>Building management must have in place a documented means for addressing patient and staff concerns regarding indoor air quality. Complaint logs can provide evidence of occupant dissatisfaction and its causes. Trends in complaint rates over time may indicate occupant reactions to changes in building operation.</p> <p>The incident log must provide fields to capture the following information:</p> <ul style="list-style-type: none"><li>• Incident log number; Form completed by __; Date</li><li>• Occupant Name; Company &amp; Department; Location in Building</li><li>• Date complaint was received; Description of Complaint; Suggested cause; Summary of problem</li><li>• Actions completed; date of occupant interview</li><li>• CO2 measurements; ventilation rate assessment (if required); ventilation system inspection; airborne contaminant sampling (if required)</li><li>• Remedial action report completed</li><li>• Occupant advised of actions taken</li></ul>

#### 5.1.8.1 Indoor Air Quality

1. To meet this BEST Practice, follow the specific tip instructions specifying what an incident log for tenant/occupant indoor air quality concerns must capture.
2. Refer to occupational health and safety regulations that may be in effect in your jurisdiction.
3. It is suggested that the building manager develop standards and specifications for controlling indoor air quality during construction activities. Remedial procedures for water damage are also suggested to reduce the risk of molds.
4. It is recommended that an integrated approach to indoor air quality be implemented by involving service technicians, building operators, consulting professionals and tenants.



## Environmental Management Systems

Applicable **ONLY** to MURB and Health Care Facilities

6.2.5	Does building management have a written policy for the selection of building materials that attempts to reduce any potential negative impact on the environment?
Tip:	<p>This question is a BEST Practice and is required for all levels of certification. Documentation demonstrating this BEST Practice must be uploaded.</p> <p>The policy committing the organization to using low environmental impact building materials and equipment in its facilities should be part of the tenant construction guidelines or in an appendix to a lease where tenant improvement restrictions are mentioned. Examples of low impact building materials include materials with high recycled content or low off-gassing carpeting and furnishings. See section 5.6 <i>Indoor Air Quality - Control of Pollutants at Source</i> in the questionnaire referring to the checklist of items to be discussed with architects etc. Consider the following criteria:</p> <ul style="list-style-type: none"> <li>• Avoiding materials that will result in excessive scrap material because of sizing needs;</li> <li>• Salvaging reusable materials during demolition;</li> <li>• Selecting materials that have recycled content;</li> <li>• Selecting renewable materials; and</li> <li>• Selecting materials with low embodied energy and low maintenance requirements.</li> </ul> <p>Management should be able to demonstrate that the policy is actually implemented and put into practice in projects.</p>
6.4.1.1	Has a documented Communications Work Plan been developed and/or updated for tenants/occupants regarding environmental initiatives and practices in the building within the past 12 months?
Tip:	<p>This question is a BEST Practice and is required for all levels of certification. Documentation demonstrating this BEST Practice must be uploaded.</p> <p>Building management must have in place a building-specific Communications Work Plan, which must include evidence of communication strategies, activities, responsibilities and timelines for implementation. Tenants should be provided with information, and should have a forum or hotline to discuss their environmental concerns and to coordinate their activities. The key aspects of effective communication are frequency, accuracy, comprehensiveness and inclusiveness. To ensure that building occupants work together with building owners to achieve environmental goals, there must be frequent communication. Please see the Application Guide (BEST Practices section) for details on the core components of a Communications Work Plan required by this BEST Practice.</p>



## 6.2.5 Policy on Selection of Building Materials

The policy committing the organization to using low environmental impact building materials and equipment in its facilities should be part of the tenant construction guidelines or in an appendix to a lease where tenant improvement restrictions are mentioned.

Examples of low environmental impact building materials include materials with high recycled content and/or low off-gassing carpeting and furnishings.

Consider the following criteria:

- Avoiding materials that will result in excessive scrap material because of sizing needs.
- Salvaging reusable materials during demolition.
- Selecting materials that have recycled content.
- Selecting renewable materials.
- Selecting materials with low embodied energy and low maintenance requirements.

Management should be able to demonstrate that the policy is being implemented and put into practice in various projects.

### IMPORTANT NOTES:

- I. For on-site verification applicants must make available:
  - A copy of the required policy;
  - Examples of how the policy is being implemented on-site by property management; and
  - Documents demonstrating policy's implementation must be dated.
- II. Policy should be an official document on a company's website (internal and/or external); and/or printed on company's letterhead with appropriate management.

## 6.4.1.1 Tenant Communications

Building management must have in place a Communications Work Plan for communicating with tenants/occupants on environmental issues specific to the building to comply with this BEST Practice.

The core components of this work plan include communication strategies, activities, responsibilities and timelines for implementation. Evidence of each of these components must be clear in the Communications Work Plan. The components of the Communications Work Plan must have been put into place in the last 12 months and evidence of this implementation must be available.

The core components include the following:

1. Communication strategies: clearly describe the communication strategies that will be used with tenants/occupants.
2. Activities: clearly describe the activities/events that will be communicated to tenants/occupants (ex: Earth Day event or energy awareness campaigns with "turn off your monitor" stickers).
3. Responsibilities: clearly describe who will be responsible for each aspect of the Communications Work Plan.
4. Timeline for implementation: clearly describe the timeline for implementation of all activities, events, and strategies put in place in the context of the Communications Work Plan.



The key aspects of effective communication are: **frequency, accuracy, comprehensiveness and inclusiveness**. To ensure that building occupants work together with building management to achieve environmental goals, regular communication must be executed.

Applicants must be able to provide copies of the environmental Communications Work Plan and samples of the material provided to tenants/occupants as part of the plan. If materials are provided by corporate head-office and are generic to be used nationally, the on-site building management is expected to demonstrate how the environmental communications plan and generic materials, if any, are specifically targeted to building tenants/occupants and integrated to address building-specific environmental issues.

A well-understood system for communicating with tenants/occupants on environmental issues specific to the building can include a combination of the following techniques (the table below should be used for guidance purposes only):

Possible Communications Techniques	Possible Implementation Ideas
Initial Environmental Program Development	<ul style="list-style-type: none"> <li>• Create a Management-Tenant task force or Green Team.</li> <li>• Designate one or more of the Management Team to be the property's Environmental Ambassador to lead the program.</li> <li>• Develop a calendar that highlights the year's planned engagement opportunities with tenants or building occupants.</li> </ul>
Initial Program Launch	<ul style="list-style-type: none"> <li>• Send an announcement letter to each tenant.</li> <li>• Hold tenant meetings to educate them about the new environmental program.</li> <li>• Establish an awareness program explaining the benefits of green operation for the occupants and the environment.</li> <li>• Create new events or coincide events with existing environmental celebrations. Examples include:               <ul style="list-style-type: none"> <li>○ Sweater Day in February</li> <li>○ Earth Hour in March</li> <li>○ Earth Day and Earth Week in April</li> <li>○ Energy Conservation Week in May</li> <li>○ Waste Reduction Week in October</li> </ul> </li> </ul>
Relaying Management's Activities and Results	<ul style="list-style-type: none"> <li>• Post and/or distribute and/or e-mail notices of audit results, new environmental programs and policies, performance summaries (for building energy or water consumption).</li> <li>• Create a building website highlighting the environmental performance of the building.</li> <li>• Consider active and passive communications, as available, and discern their frequency. Examples include:               <ul style="list-style-type: none"> <li>○ Newsletters, eNewsletters, Memos</li> <li>○ Green Team Meetings</li> <li>○ Lobby/Common Area Posters, Screens or central Communications</li> </ul> </li> </ul>





	<p>Board</p> <ul style="list-style-type: none"><li>○ Elevator Messaging (e.g. ENN)</li><li>○ Website and Social Media (e.g. Twitter, Facebook)</li><li>○ Tenant-Landlord Collaboration Opportunities (e.g. Natural Resource Canada Sustainability Initiatives-metering reporting)</li></ul>
New Tenants/Occupants	<ul style="list-style-type: none"><li>● Modify lease agreements to include green lease considerations.</li><li>● Provide continuing education in environmental awareness.</li><li>● Create a tenant handbook/manual which highlights environmental awareness.</li><li>● Modify Tenant Fit Up Manual/Design Criteria to include green building considerations (e.g., low VOC paint, ENERGY STAR appliances, etc.)</li></ul>