

International Telecommunication Union

ITU-T

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

L.1371

(06/2020)

SERIES L: ENVIRONMENT AND ICTS, CLIMATE
CHANGE, E-WASTE, ENERGY EFFICIENCY;
CONSTRUCTION, INSTALLATION AND PROTECTION
OF CABLES AND OTHER ELEMENTS OF OUTSIDE
PLANT

**A methodology for assessing and scoring the
sustainability performance of office buildings**

Recommendation ITU-T L.1371

ITU-T



ITU-T L-SERIES RECOMMENDATIONS

**ENVIRONMENT AND ICTS, CLIMATE CHANGE, E-WASTE, ENERGY EFFICIENCY; CONSTRUCTION,
INSTALLATION AND PROTECTION OF CABLES AND OTHER ELEMENTS OF OUTSIDE PLANT**

OPTICAL FIBRE CABLES	
Cable structure and characteristics	L.100–L.124
Cable evaluation	L.125–L.149
Guidance and installation technique	L.150–L.199
OPTICAL INFRASTRUCTURES	
Infrastructure including node elements (except cables)	L.200–L.249
General aspects and network design	L.250–L.299
MAINTENANCE AND OPERATION	
Optical fibre cable maintenance	L.300–L.329
Infrastructure maintenance	L.330–L.349
Operation support and infrastructure management	L.350–L.379
Disaster management	L.380–L.399
PASSIVE OPTICAL DEVICES	L.400–L.429
MARINIZED TERRESTRIAL CABLES	L.430–L.449

For further details, please refer to the list of ITU-T Recommendations.

Recommendation ITU-T L.1371

A methodology for assessing and scoring the sustainability performance of office buildings

Summary

Recommendation ITU-T L.1371 provides a consistent framework for building owners, managers and operators to critically assess, score and improve the sustainability performance of office buildings in 10 key areas: energy; water; air; comfort; health and wellness; purchasing; custodial; waste; site; and stakeholders.

The framework described in Recommendation ITU-T L.1371 provides a set of concrete and measurable steps to reduce environmental impacts, and specifically greenhouse gas emissions, of existing office buildings, thus contributing to the achievement of Sustainable Development Goal 11 "Sustainable cities and communities –s Make cities inclusive, safe, resilient and sustainable".

The annex to Recommendation ITU-T L.1371 specifies an assessment scoring methodology to allow owners and managers to undertake a self-assessment to evaluate their building's current status and track progress going forward.

History

Edition	Recommendation	Approval	Study Group	Unique ID*
1.0	ITU-T L.1371	2020-06-29	5	11.1002/1000/14304

Keywords

Assessment, buildings, methodology, scoring, sustainability.

* To access the Recommendation, type the URL <http://handle.itu.int/> in the address field of your web browser, followed by the Recommendation's unique ID. For example, <http://handle.itu.int/11.1002/1000/11830-en>.

FOREWORD

The International Telecommunication Union (ITU) is the United Nations specialized agency in the field of telecommunications, information and communication technologies (ICTs). The ITU Telecommunication Standardization Sector (ITU-T) is a permanent organ of ITU. ITU-T is responsible for studying technical, operating and tariff questions and issuing Recommendations on them with a view to standardizing telecommunications on a worldwide basis.

The World Telecommunication Standardization Assembly (WTSA), which meets every four years, establishes the topics for study by the ITU-T study groups which, in turn, produce Recommendations on these topics.

The approval of ITU-T Recommendations is covered by the procedure laid down in WTSA Resolution 1.

In some areas of information technology which fall within ITU-T's purview, the necessary standards are prepared on a collaborative basis with ISO and IEC.

NOTE

In this Recommendation, the expression "Administration" is used for conciseness to indicate both a telecommunication administration and a recognized operating agency.

Compliance with this Recommendation is voluntary. However, the Recommendation may contain certain mandatory provisions (to ensure, e.g., interoperability or applicability) and compliance with the Recommendation is achieved when all of these mandatory provisions are met. The words "shall" or some other obligatory language such as "must" and the negative equivalents are used to express requirements. The use of such words does not suggest that compliance with the Recommendation is required of any party.

INTELLECTUAL PROPERTY RIGHTS

ITU draws attention to the possibility that the practice or implementation of this Recommendation may involve the use of a claimed Intellectual Property Right. ITU takes no position concerning the evidence, validity or applicability of claimed Intellectual Property Rights, whether asserted by ITU members or others outside of the Recommendation development process.

As of the date of approval of this Recommendation, ITU had not received notice of intellectual property, protected by patents, which may be required to implement this Recommendation. However, implementers are cautioned that this may not represent the latest information and are therefore strongly urged to consult the TSB patent database at <http://www.itu.int/ITU-T/ipr/>.

© ITU 2020

All rights reserved. No part of this publication may be reproduced, by any means whatsoever, without the prior written permission of ITU.

Table of Contents

	Page
1 Scope	1
2 References.....	1
3 Definitions	1
3.1 Terms defined elsewhere	1
3.2 Terms defined in this Recommendation.....	1
4 Abbreviations and acronyms	2
5 Conventions	2
6 Sustainability performance of office building	3
6.1 General performance definition.....	3
6.2 Application requirement.....	3
6.3 How to apply the assessment.....	3
7 Best Management Practices for office building.....	3
7.1 Energy.....	4
7.2 Water	5
7.3 Air.....	6
7.4 Comfort.....	6
7.5 Health and Wellness	7
7.6 Custodial.....	8
7.7 Waste	8
7.8 Stakeholder Engagement	10
8 Assessment Questions for Scoring	11
Annex A – List of Assessment Questions for Scoring	12
Bibliography.....	33

Recommendation ITU-T L.1371

A methodology for assessing and scoring the sustainability performance of office buildings

1 Scope

This Recommendation specifies a methodology for assessing and scoring, and subsequently improving, the sustainability performance of existing office buildings. The methodology described in this Recommendation provides building owners, managers and operators with a consistent framework to critically assess the sustainability performance and management of office buildings in 10 key areas: energy; water; air; comfort; health and wellness; purchasing; custodial; waste; site; and stakeholders.

It should be noted that the methodology proposed in this Recommendation applies only to existing office buildings and not to the construction of new buildings.

NOTE – This Recommendation is based on the BOMA BEST Sustainable Buildings assessment programme [b-BOMA].

2 References

The following ITU-T Recommendations and other references contain provisions which, through reference in this text, constitute provisions of this Recommendation. At the time of publication, the editions indicated were valid. All Recommendations and other references are subject to revision; users of this Recommendation are, therefore, encouraged to investigate the possibility of applying the most recent edition of the Recommendations and other references listed below. A list of the currently valid ITU-T Recommendations is published regularly. The reference to a document within this Recommendation does not give it, as a stand-alone document, the status of a Recommendation.

[ISO 50002] ISO 50002:2014, *Energy audits – Requirements with guidance for use*.

3 Definitions

3.1 Terms defined elsewhere

None.

3.2 Terms defined in this Recommendation

This Recommendation defines the following terms:

3.2.1 office building: A type of building that is used by commercial, telecommunications, institutional and governmental sectors primarily to conduct various types of business, administration and professional activities.

3.2.2 preventative maintenance programme: A systematic approach that outlines what equipment under a landlord's control should be reviewed, the corrective action that should be taken and how frequently this should occur.

3.2.3 energy assessment: An audit of a building's configuration and energy systems that focuses on the identification of the potential for energy efficiency improvements.

3.2.4 energy management: A continuous process of managing behavioural, organizational and technical change to improve a building's energy performance.

3.2.5 water assessment: An audit of a building's configuration and water systems that focuses on the identification of potential water-conserving measures.

3.2.6 indoor air quality plan: The result of a selection of appropriate and achievable air-quality goals; regular surveillance and testing to verify heating, ventilation and air conditioning (HVAC) performance and hygiene; efficient and effective procedures for addressing occupant indoor air quality (IAQ) concerns; and training for all property management and maintenance personnel.

3.2.7 occupant service request programme: A programme for service requests for maintenance that is used to identify issues pertaining to the building, including a formal process to allow tracking of various key performance indicators (KPIs), such as critical equipment maintenance and critical building maintenance.

3.2.8 hazardous building materials management programme: A programme to identify and manage the presence and condition of hazardous building materials.

3.2.9 hazardous chemical products management programme: A programme to identify chemical products in use or storage in a building to manage health hazards and safety risks, as well as potential environmental impacts.

3.2.10 green cleaning programme: A programme that emphasizes the use of environmentally preferred products, maintenance of cleaning equipment and effective cleaning practices.

3.2.11 waste source separation programme: A programme that facilitates the separation of waste at the point of generation for recycling and waste destined for disposal.

3.2.12 waste audit: An audit to determine the categories and amounts of a building's waste streams.

4 Abbreviations and acronyms

This Recommendation uses the following abbreviations and acronyms:

AST	Above ground Storage Tank
CRD	Construction, Renovation or Demolition
ECM	Energy Conservation Measure
EUI	Energy Use Intensity
GHG	Greenhouse Gas
HVAC	Heating, Ventilation and Air Conditioning
IAQ	Indoor Air Quality
KPI	Key Performance Indicator
LED	Light-Emitting Diode
MERV	Minimum Efficiency Reporting Value
N/A	Not Applicable
PCA	Property Condition Assessment
PCB	Polychlorinated Biphenyl
SOP	Standard Operating Procedure
UST	Underground Storage Tank
WCM	Water Conservation Measure
WUI	Water Use Intensity

5 Conventions

None.

6 Sustainability performance of office building

6.1 General performance definition

The sustainability performance of an office building is directly connected to the building's utility consumption and the amount of waste it generates. Utility consumption in buildings, including energy use (e.g., heating, cooling, lighting, ventilation) and water use (e.g., cooling, irrigation, toilets and other uses), is the key determinant of a building's sustainability performance and its environmental footprint (i.e., greenhouse gas (GHG) emissions). The generation of waste within a building has a further impact on the environment, depending on the methods of disposal.

6.2 Application requirement

This Recommendation can be applied to any office building in the private or public sector.

6.3 How to apply the assessment

This assessment should be applied in two parts.

The first part consists of a series of best practices that should be implemented in every building. These best practices are proven strategies that generally do not require significant capital expenditure for implementation. They focus on improving the operation of a building, from setting sustainability related goals and targets, to formulating plans that improve the efficiency of building and the comfort level of occupants. By implementing the best practices described in this Recommendation, buildings will see a marked improvement in terms of energy and water efficiency, waste reduction and occupant satisfaction.

The second part consists of answering a series of questions that are linked to a scoring system. Each question has a predetermined point value if it is answered in the positive. The building team should count up the total points gathered (sum of the numerator value for each question) and the total points available (sum of the denominator value for each question) to get a final percentage score. All questions should be answered in order to get a valid assessment score. A higher percentage score indicates a higher-performing building. The initial percentage score from the assessment can be used as a baseline for future improvement. Reviewing questions where no points were awarded can also be a viable way to identify the potential areas for improvement of the building.

Questions that are answered as "not applicable" (N/A) should be excluded from the scoring.

Building management may wish to gather a diverse team representing all areas of building operations, maintenance and cleaning to develop the policies, practices, goals and targets that are applicable.

NOTE 1 – A tool will be available to assist in scoring.

NOTE 2 – In order to take full advantage of this Recommendation, building management may wish to have external confirmation of their progress undertaken at regular intervals.

7 Best management practices for office building

Clauses 7.1 to 7.8 contain best management practices related to key areas of environmental performance and management of office buildings, namely; energy, water, air, comfort, health and wellness, custodial, waste, and stakeholders.

List of all best practices

The 16 best practices in clauses 7.1 to 7.8 consist of a list of management policies, plans and programmes. They should be implemented as the first step to improve the sustainability performance of an office building.

7.1 Energy

Recommended best practice 1

A preventative maintenance programme should be implemented for buildings

Description: Preventative maintenance recognizes that certain systems and their components require scheduled periodic maintenance, as well as overhauling or replacement after a certain age, at certain intervals or due to specific causes. The preventative maintenance programme is a systematic approach that outlines which equipment under the landlord's control should be reviewed, the corrective action that should be taken and how frequently this should occur.

The preventative maintenance programme should outline when preventative and corrective maintenance is required to be performed on the building's equipment.

Records should be maintained.

Additional information: Preventative maintenance involves inspecting and testing units for their operational efficiency and responses to faults. Corrective maintenance involves repairing a unit to bring it back to operability at its most efficient capability.

Recommended best practice 2

A minimum level 1 (or equivalent) energy assessment should have been conducted within the last 5 years

Description: Level 1 energy assessment refers to a simple audit of a building's configuration and energy systems. It focuses on identifying the potential for energy efficiency improvements in a building.

Level 1 energy assessment should have been conducted on a building in the last 5 years.

The energy assessment report should contain the following elements.

- An analysis of energy consumption through monthly utility bill review and benchmarking. For benchmarking purposes, utility bills should cover a minimum of 12 months of continuous data. If major renovations or retrofits to the building systems have occurred, use the data after the time of major renovation. Major renovations include upgrades to mechanical, building envelope and electrical systems (e.g., the procurement of new lighting for more than 50% of the building's lighting fixtures).
- A list of the most energy-consuming equipment.
- A prioritized list of proposed low-cost and no-cost energy conserving measures (ECMs) to enable greater energy efficiency.
- Estimation of the 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.

See [ISO 50002] and [b-ANSI/ASHRAE/ACCA 211] for further guidance.

Recommended best practice 3

An energy management plan should be implemented for buildings

Description: Energy management is the continuous process of managing behavioural, organizational and technical change to improve a building's energy performance.

The energy management plan should have been reviewed and updated within the last 3 years.

The plan should identify a list of ECMs for the building (such as those provided in the energy audit, as available). For each initiative, identify the following:

- whether a particular ECM will be pursued;

- the person responsible for the implementation of the ECMs;
- the budgets associated with the ECMs; and
- a timeline for completion.

If a particular measure will not be followed-up for the building, indicate why this is the case.

Recommended best practice 4

Energy-reduction targets should be implemented for buildings

Description: Clear, long-term, outcome-oriented targets can help to shape expectations and create the conditions in which all actors have the confidence to develop solutions to common problems. By establishing targets and adopting relevant indicators, progress can be assessed, and appropriate actions can be taken.

An energy-reduction target should be identified along with a timeframe for completion.

Targets should be put in writing, signed by senior management and reviewed annually, and be integrated into the energy management plan.

Additional information: The energy-reduction target can be established to encompass either all utilities as a whole or divided into each type of utility (electricity, gas) under the control of the building management.

7.2 Water

Recommended best practice 5

A water assessment should have been conducted within the last 5 years.

Description: A water assessment refers to a simple audit of the building's configuration and water systems. It focuses on the identification of potential water-conserving measures.

A water assessment should have been conducted on the building within the last 5 years.

The water assessment report should contain the following elements.

- An analysis of water consumption through monthly utility bill analysis and benchmarking. For benchmarking purposes utility bills should cover a minimum of 12 months of continuous data
- A list of water-consuming equipment.
- A prioritized list of proposed low-cost and no-cost water conserving measures (WCMs) to enable greater water efficiency.
- Estimation of the financial savings the building owner will realize as a result of investing in WCMs.

Recommended best practice 6

A water management plan should be implemented for buildings

Description: Water management is the continuous process of managing behavioural, organizational and technical change to improve a building's water performance.

The water management plan should have been reviewed and updated within the last 3 years.

The plan should identify a list of water conservation measures (WCMs) 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.

The water management plan can be common to a portfolio or campus of buildings; however, implementation should be building specific.

7.3 Air

Recommended best practice 7

An indoor air quality monitoring plan should be implemented for buildings

Description: Improved IAQ is achieved through the selection of appropriate and achievable air quality goals, conducting regular surveillance and testing to verify HVAC performance and hygiene, identifying efficient and effective procedures for addressing occupant IAQ concerns, and conducting training for all property management and maintenance personnel.

The air quality monitoring plan should contain the following elements.

- Determination and statement of the IAQ goals for the building, including targets for air quality, parameters for measurements, such as carbon dioxide, carbon monoxide, temperature, relative humidity, dust, volatile organic compounds and other known contaminants of concern.
- Set a schedule for HVAC inspection and maintenance tasks to ensure good hygiene (e.g., cleanliness, no standing water).
- Identify HVAC systems that will impact the IAQ goals listed in the previous entries.
- Create a preventative maintenance schedule for these systems (may overlap with the preventative maintenance programme best practice). Equipment and systems should be checked at least annually.
- 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 programme best practice).
- Identify training requirements for property management and building maintenance staff relating to IAQ.

Review the plan annually and update as necessary.

7.4 Comfort

Recommended best practice 8

An occupant service request programme should be implemented for buildings

Description: Service requests for maintenance are used to identify issues pertaining to the building. Having a formal process in place allows tracking of various KPIs, such as critical equipment maintenance and critical building maintenance.

Establish an occupant service request programme for the building. The programme should include the following components:

- 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);
- information on the origins of the service request;
- information on the status of the service request (e.g., in progress, resolved); and
- information on the corrective action taken.

Documentation should be kept on file for a minimum of 3 months. The occupant service request programme can be common to a portfolio or campus of buildings; however, implementation should be building specific.

Additional information: Service requests can be made by all building occupants, including tenants, visitors and staff.

7.5 Health and wellness

Recommended best practice 9

A hazardous building materials management programme should be implemented for buildings

Description: The presence and condition of hazardous building materials should be identified and managed for the safety of building occupants.

The hazardous building materials management programme should include:

- inventory of all building materials known or presumed to contain asbestos, lead, polychlorinated biphenyls (PCBs), silica and mercury (at a minimum);
- inspection of known or presumed asbestos-containing materials installed within the past 12 months, where present;
- inspection of materials or equipment known or presumed to contain lead, mercury, PCBs or other hazardous building materials installed within the last 3 years, where present;
- corrective actions identified during the inspections completed;
- management protocols for unexpected disturbance of asbestos;
- pre-construction assessment of materials and equipment impacted by renovation activities for the presence of hazardous building materials;
- a proactive plan for the abatement of accessible asbestos-containing materials (including in the areas above acoustic tiles) and PCB-containing equipment and ballasts;
- awareness training for building maintenance staff on asbestos safety;
- review and update as the location of hazardous materials changes in the building, at a minimum every 3 years.

As with any management programme, continuous improvement should be the goal. The management programme should be reviewed as changes to the responsibilities, personnel, plans, quantity or condition of the materials occur.

Recommended best practice 10

A hazardous chemical products management programme should be implemented for buildings

Description: The identification and management of chemical products in use or storage in a building is essential to manage health hazards and safety risks, as well as determining their potential environmental impacts.

The hazardous chemical products management programme should include:

- periodic inventory updates of in-use, base-building hazardous chemical products (at least annually or as procurement is revised);
- records on storage of chemical products in accordance with product safety data sheets;
- safety data sheets available for all hazardous chemical products dated within the past 3 years;
- chemical products labelled in accordance with the *Globally harmonized system of classification and labelling of chemicals* [b-UNECE GHS];
- 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);
- review and updating of the plan as products are changed and at least annually.

7.6 Custodial

Recommended best practice 11

A green cleaning programme should be implemented for buildings

Description: A green cleaning programme emphasizes using environmentally sound products for the maintenance of cleaning equipment and effective cleaning practices.

Requirements: Develop a green cleaning programme for the facility. It should include the following components:

- establishment of standard operating procedures (SOPs) for cleaning activities;
- cleaning products certified by a third party;
- cleaning logs (describing the activities carried out, the times they were carried out and by whom);
- training for building cleaning staff;
- annual review and updating;
- cleaning product certification by a third-party (e.g., EcoLogo, Green Seal or equivalent) to reduce the risks of occupant and building cleaning staff exposure to unclean materials.

Where custodial services are contracted, communicate custodial goals and green cleaning initiatives to the contracted company. The contracted company should provide the building owner or manager with detailed maintenance SOPs. Confirm the contracted company is meeting these objectives through detailed cleaning logs supplied by the contractor.

The green cleaning programme can be common to a portfolio or campus of buildings; however, implementation should be building specific.

Additional information: An accepted equivalent is available for buildings where cleaning is performed exclusively by individual tenants. In these cases, the building owner or manager should provide tenants with a guidance document regarding the development of a green cleaning programme for the building.

7.7 Waste

Recommended best practice 12

A waste source separation programme should be implemented for buildings

Description: A source separation programme facilitates the separation of waste at the point of generation into that for recycling and that destined for disposal.

The source separation programme should, at minimum, include the collection of paper, metal cans, glass, plastics 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.

The source separation programme should consist of the following components.

- 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.
- The provision of information and guidance to users (e.g., signs), potential users and custodial staff describing the expectations of the programme and encouraging effective source separation of waste to minimize contamination and to ensure full use of the programme.

- 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 or disposal of each material category (reports from the service provider should transparently demonstrate this).
- Reasonable efforts should be made to ensure that the separated waste is re-used or recycled.

The programme can be common to a portfolio or campus of buildings; however, implementation should be building specific.

Additional information: The contamination of recyclable material does not disqualify this requirement, though continued contamination should be addressed in the waste reduction work plan. Off-site sorting such as at a transfer station from a single common receptacle does not qualify as source-separation in the context of this application.

Recommended best practice 13

A waste audit should have been completed for a building within the past 3 years.

The waste audit should address:

- the time period and duration of the waste sampling;
- the sample size (representing at least 10% of the total building's waste and recycling materials);
- details specific to each collected waste stream;
- how the waste data were categorized, evaluated and analysed based on its composition (the site should be equipped with a minimum number of work tables, precise scales and mobile containers for weighing the waste).

The resulting waste audit report should include:

- a summary of the sampling protocol and methodology used;
- annualization of daily waste, as well as other waste stream such as construction, renovation or demolition (CRD) waste and hazardous materials;
- total of each waste stream and overall total;
- diversion rate;
- capture rate;
- summary of recommendations for improving waste diversion.

The audit should be performed by a person with adequate qualifications, as well as suitable training and experience.

Additional information: In the case of tenant-managed waste streams, these need not be included in the waste audit; however, best practices recommend that tenants provide annual generation and disposal weight reporting for all materials that they collect independent of the building system to calculate current diversion. If tenant-managed waste streams are included, the divertible materials and disposal material should be included. If tenant-managed waste streams are included in the diversion rate, they should also be included in the audit.

The waste audit should be performed on the building and should not be based on generalized waste facility averages.

Recommended best practice 14

A waste reduction work plan should be implemented for the building

Description: A waste reduction plan is an action plan prepared based on the updated waste audit.

The waste reduction work plan should consist of the following components.

- The plan should be prepared in conjunction with the waste audit (conducted within the past 3 years). The content should reflect the updated audit. The waste-reduction work plan should address all recycling streams in the building, describing ways to increase recycling rates and reduce waste being generated.
- The waste reduction work plan should include, to the extent that is reasonable, plans to address the 3R (reduce, re-use, and recycle) hierarchy: reduction first, followed by re-use and then recycling. The waste reduction work plan may fit under a larger waste management plan but should be action oriented and include identification and planning for the prevention, reduction and diversion of each identified waste stream.
- 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.
- The waste reduction work plan should 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 (e.g., via the building's website or intranet service, posting in waste and recycling depot or in the tenant manual).

The waste reduction work plan should be reviewed every 3 years to reflect changes in the building strategy, challenges and achievement. In the case of a recertification, previous waste reduction work plans should be reviewed to examine whether previous goals and objectives have been met.

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.

Additional information: The waste reduction work plan targets the collection programmes for which the building manager or owner is responsible.

7.8 Stakeholder engagement

Recommended best practice 15

An overarching environmental policy to guide building management should be implemented

Description: An environmental policy or vision establishes the direction building management wishes to take regarding future improvements in a 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.

Create an overarching environmental policy (or vision), which contains the following components.

- A specific objective or vision statement for each of the 10 categories in the assessment. In each case, provide a clear objective or vision regarding what the organization (or building) hopes to achieve within a specified timeline (e.g., achieve a 5% reduction in energy consumption in 5 years; perform the building's first air quality audit).
- Enter the vision statement for each assessment category in the space provided in the online portal.

Additional information: The statements provided for each category can be pulled directly from objectives established in previous questions in this assessment. This best practice seeks to bring them together into an overarching document.

The policy can be common to a portfolio or campus of buildings.

Recommended best practice 16

An occupant environmental communication programme should be implemented

Description: Increasing building occupant awareness on and engagement in environmental and sustainable practices can have a significant impact on the sustainability performance of a building. Improving the environmental performance of a 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 and improved management-tenant relationships.

The occupant environmental communication programme should address the following components:

- selecting the communication strategies that will be used;
- selecting the activities that will be encouraged;
- identifying responsible individuals among management for moving each aspect of the plan forward;
- creating a timeline for implementation.

Demonstrate that at least two communication strategies have been implemented within the past 12 months.

The programme can be common to a portfolio or campus of buildings; however, implementation should be building specific.

Additional information: *Occupants* are the permanent/regular occupants of the building, such as tenants and staff. If the building is owner-occupied, surveys should be directed to staff. Visitors to the building are not considered to be occupants.

8 Assessment questions for scoring

Within each area of assessment, the question focuses on five areas of progressive importance.

- 1) **Demonstration of intent** – Policies and procedures.
- 2) **Assessment** – How the building is assessing its performance.
- 3) **Operations and maintenance** – Practices implemented to operate a building more sustainably.
- 4) **Building systems** – Equipment, including ICTs that have been implemented and that lead to improved sustainability.
- 5) **Innovation** – Innovative methods of management or innovative technologies.

Each question describes an environmental measure that impacts building management or performance, some being more important than others. Points are attributed to each question. The number of points available per question is calculated based on the impact and importance of the measure. The perceived sustainability impact of each question was scored on a scale of 1 to 5, with 5 representing the most beneficial and 1 the least beneficial. A value was attributed according to each measure's respective economic, social and environmental benefit.

The energy category represents the most important measures and, therefore, captures about 30% of the total points available. The remaining 70% of points were deemed to be of equal importance and spread evenly across the other nine categories.

The outcome is a point system that awards more points for taking action where it matters; action that leads to a better understanding of building systems and improvement in operational performance. The assessment starts with the implantation of industry best practices as a first step and leads the way for improvement over time, rewarding actions that carry greater importance and impact.

Questions listed as not scored are to prompt building management to gather and maintain documents and information to better understand their building operations.

The questions and scoring are listed in Annex A.

Annex A

List of assessment questions for scoring

(This annex forms an integral part of this Recommendation.)

This annex contains the assessment questions for scoring related to the key areas of environmental performance and management of office buildings, namely: energy, water, air, comfort, health and wellness, purchasing, custodial, waste, site, and stakeholder engagement.

List of questions related to energy

Demonstration of intent

01.01.01 – Does building staff participate in a formalized training programme focused on energy efficiency?

Yes	14/14
No	0/14

01.01.02 – List the training courses or internal training completed by operations staff in the last 2 years and those planned during the next 12 months.

Not Scored	
------------	--

01.01.03 – Does the capital plan include measures to ensure continuous improvement of the energy efficiency of the building envelope?

Yes	13/13
No	0/13

01.01.04 – Have 3 years of energy consumption data been analysed in order to establish trends?

Yes	7/7
No	0/7
N/A	0/0

Assessment

01.02.02 – What is the calculated weather-normalized site energy use intensity (EUI) for this building?

Not Scored	
------------	--

01.02.04 – Has a thermal imaging scan of the roof or walls been performed within the last 5 years?

	Yes	No
Roof only	4/4	0/4
Walls only	4/4	0/4

01.02.05 – Has a level 2 energy assessment been performed on the building within the last 5 years? A level 2 audit includes the requirements of a level 1 energy assessment plus more detailed energy calculations and financial analysis of proposed energy efficiency measures.

See [ISO 50002] and [b-ANSI/ASHRAE/ACCA 211] for further guidance.

Yes	20/20
No	0/20

N/A	0/0
-----	-----

Operations and maintenance

01.03.01 – Are operation manuals or sequence of operations for major pieces of mechanical equipment easily accessible?

Yes	14/14
No	0/14
N/A	0/0

01.03.02 – Does building management track and monitor building performance and consumption patterns?

Yes	8/8
No	0/8

01.03.03 – Are maintenance work orders created digitally?

Yes	5/5
No	0/5

01.03.04 – Has a low-cost ECM been implemented within the last 3 years?

Yes	25/25
No	0/25

01.03.05 – Are control strategies used on the mechanical equipment to reduce energy consumption and demand?

	Yes	No	N/A
Unoccupied setback	2/2	0/2	0/0
Outdoor air temperature reset	2/2	0/2	0/0
Demand control ventilation	2/2	0/2	0/0
Scheduling (specify how)	2/2	0/2	0/0
Economizer control (specify type)	2/2	0/2	0/0

01.03.06 – Are the equipment and energy systems regularly re- or retro-commissioned?

Yes	10/10
No	0/10

01.03.07 – Are newly installed energy systems and equipment appropriately commissioned?

Yes	9/9
No	0/9

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

Yes	5/5
No	0/5
N/A	0/0

01.03.09 – Is a boiler maintenance programme in place in the building?

Yes	7/7
No	0/7
N/A	0/0

01.03.10 – Are strategies in place to control escalator based on use patterns?

Yes	5/5
No	0/5
N/A	0/0

Building systems

01.04.01 – What type of building automation system is in place in the building?

Direct digital control	8/8
Hybrid	5/8
Pneumatic	2/8
None	0/8
N/A	0/0

01.04.02 – What percentage of the building's energy consumption is sub-metered?

50% or more	8/8
25-49%	6/8
10-24%	4/8
Less than 10%	0/8

01.04.03 – What building areas incorporate at least 50 % of Energy Star, DesignLight Consortium (DLC) or equivalent approved lighting lamps and ballasts?

	Yes	No	N/A
Office	2/8	0/8	0/0
Warehouse	2/8	0/8	0/0
Building Exterior	2/8	0/8	0/0
Common Areas	2/8	0/8	0/0

01.04.04 – What percentage of the building exterior and parking lot fixtures have light-emitting diode (LED) lamps or automated controls?

80-100	14/14
60-79%	11/14
40-59%	8/14
20-39%	5/14
1-19%	2/14
None	0/14
N/A	0/0

01.04.05 – What percentage of lighting fixtures are controlled by sensors?

75-100%	11/11
50-74%	9/11
25-49%	6/11
10-24%	3/11
Less than 10%	0/11
N/A	0/0

01.04.06 – What percentage of the total installed pump and fan motors are actively controlled by variable speed drives or variable frequency drives?

75-100%	14/14
50-74%	10/14
25-49%	6/14
Less than 25%	4/14
None	0/14
N/A	0/0

01.04.07 – What percentage of the building's lighting is connected to an addressable lighting control system?

75-100%	9/9
50-74%	6/9
25-49%	3/9
Less than 25%	0/9

Innovation

01.05.01 – Is 75% or more of the total installed pump and fan motor wattage considered premium efficiency?

Yes	1/1
N/A	0/0

01.05.02 – Is 75% or more of the central heating equipment efficient?

Yes	1/1
N/A	0/0

01.05.03 – Are 75% of the rooftop package units efficient?

Yes	1/1
N/A	0/0

01.05.04 – Are 75% of the chillers and air conditioning systems efficient?

Yes	1/1
N/A	0/0

01.05.05 – Is 75% of the domestic water heating equipment efficient?

Yes	1/1
N/A	0/0

01.05.06 – Does 75% of the building's exhaust air pass through a ventilation heat or energy recovery system?

Yes	1/1
N/A	0/0

01.05.07 – Are 75% of the building's exterior windows considered efficient?

Yes	1/1
N/A	0/0

01.05.09 – Are strategies or systems in place to allow peak shedding?

Yes	1/1
N/A	0/0

01.05.10 – Are the building's real-time consumption patterns shared with building occupants?

Yes	1/1
N/A	0/0

01.05.11 – Are renewable-energy certificates or low-impact electricity purchased?

Yes	1/1
N/A	0/0

01.05.12 – Are renewable natural resources used on site to generate at least 1 % of the building's energy?

Yes	1/1
N/A	0/0

01.05.13 – Is the building connected to any form of energy cogeneration system, or to a district or community energy system?

Yes	1/1
N/A	0/0

List of questions related to water

Demonstration of intent

02.01.01 – Is a water damage monitoring and management programme in place in the building?

Yes	5/5
No	0/5

02.01.02 – Is a maintenance programme in place for interior features requiring water?

Yes	3/3
No	0/3
N/A	0/0

Assessment

02.02.02 – What is the calculated water use intensity (WUI) for the building?

Not Scored	0/0
------------	-----

02.02.03 – What is the WUI range achieved by this building?

Unknown / Unable to obtain	0/15
1.0 m ³ m ⁻² year ⁻¹ and above	0/15
Between 0.8 and 0.99 m ³ m ⁻² year ⁻¹	4/15
Between 0.65 and 0.79 m ³ m ⁻² year ⁻¹	6/15
Between 0.50 and 0.64 m ³ m ⁻² year ⁻¹	8/15
Between 0.33 and 0.49 m ³ m ⁻² year ⁻¹	10/15
Between 0.2 and 0.32 m ³ m ⁻² year ⁻¹	12/15
Less than 0.2 m ³ m ⁻² year ⁻¹	15/15

Building systems

02.04.01 – Which type of water efficient controls are used for irrigation?

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

02.04.02 – What percentage of the building's water consumption is sub-metered?

30% or more	9/9
20-29%	6/9
10-19%	3/9
Less than 10%	0/9

02.04.03 – What percentage of water fixtures are efficient, based on inventory amount?

02.04.04 – Toilet: 4.8 l/flush or less

75-100%	8/8
50-74%	4/8
25-49%	2/8
Less than 25%	0/8
N/A	0/0

02.04.05 – Urinals: 1.9 l/flush or less

75-100%	8/8
50-74%	4/8
25-49%	2/8
Less than 25%	0/8
N/A	0/0

02.04.06 – Lavatory and kitchen taps: 5.7 l/min or less

75-100%	5/5
50-74%	3/5
25-49%	2/5
Less than 25%	0/5
N/A	0/0

02.04.07 – Shower heads: 7.6 l/min or less

75-100%	4/4
50-74%	2/4
25-49%	1/4
Less than 25%	0/4
N/A	0/0

Innovation

02.05.01 – Is a potable water testing programme in place in the building?

Yes	1/1
N/A	0/0

02.05.02 – Have 3 years of water consumption been analysed in order to establish trends?

Yes	1/1
N/A	0/0

02.05.03 – Are non-potable water sources used in the building?

Yes	1/1
N/A	0/0

List of questions related to air

Demonstration of intent

03.01.01 – Is a training programme on indoor air quality (IAQ) in place for property managers and building maintenance staff?

Yes	14/14
No	0/14

03.01.02 – Is smoking restricted on the property?

Yes	11/11
No	0/11

03.01.03 – Is a plan in place to control construction-generated contaminants prior to base building or tenant renovations?

Yes	3/3
No	0/3

Assessment

03.02.01 – Does the air quality meet the goals set out in the IAQ monitoring plan?

Yes	9/9
No	0/9
Unknown	0/9

Operations and maintenance

03.03.01 – Are the results of the most recent IAQ audit available to building occupants?

Yes	4/4
No	0/4
N/A	0/0

03.03.02 – Has the building manager acted on recommended corrective actions identified in the IAQ audit?

Yes	6/6
No	0/6
N/A	0/0

03.03.03 – Is there a process in place for investigating and correcting when manual overrides of the HVAC system occur?

Yes	12/12
No	0/12
N/A	0/0

03.03.04 – Is night-time outdoor air purging performed in the building?

Yes	8/8
No	0/8
N/A	0/0

03.03.05 – Are there minimum open set points on all variable air volume dampers?

Yes	10/10
No	0/10
N/A	0/0

Building systems

03.04.01 – What minimum efficiency reporting value (MERV) filters are in use for all outdoor air and return air (i.e., circulating air) systems?

MERV 7 or below	0/15
MERV 8-12	8/15
MERV 13-16	13/15
N/A	0/0

03.04.02 – Do all high traffic entryways have track-off systems such as grills, grates or matting in place throughout the year?

Yes	9/9
-----	-----

No	0/9
----	-----

03.04.03 – Are measures in place to alert building operators that HVAC filtration systems need replacement?

Yes	4/4
No	0/4
N/A	0/0

03.04.04 – Do measured outdoor air ventilation rates meet or exceed 2.5 l/s-person?

Yes	9/9
No	0/9

03.04.05 – Is there an enclosed parking garage, loading dock or fuel/gas-fired equipment room within or connected to the building?

Yes	For informational purposes
No	For informational purposes

03.04.06 – Is the enclosed parking garage or gas/fuel-fired equipment room ventilated?

Yes	7/7
No	0/7

Innovation

03.05.01 – Do the following space types have a dedicated exhaust system?

	Yes	N/A
Enclosed printing/copying rooms	1/3	0/0
Tenant and staff kitchens	1/3	0/0
Custodial/chemical storage rooms	1/3	0/0

03.05.02 – Are concentrations of carbon monoxide below 25 ppm in the enclosed parking garage or gas/fuel-fired equipment room?

Yes	1/1
N/A	0/0

03.05.03 – Are air sanitation measures in place in main HVAC systems or in 50% or more of return-air systems?

Yes	1/1
N/A	0/0

03.05.04 – Are the measured outdoor air ventilation rates greater than 0.3 l/s·m²?

Yes	1/1
N/A	0/0

List of questions related to comfort

Assessment

04.02.01 – Has an assessment been performed of background sound levels generated from exterior and base-building sources?

Yes	8/8
No	0/8

04.02.02 – Is the building designed such that potential accessibility barriers are addressed?

Yes	14/14
No	0/14
N/A	0/0

Innovation

04.05.01 – Do occupants have local control of thermal comfort parameters?

Yes	1/1
N/A	0/0

04.05.02 – Do frequently occupied spaces have radiant building surfaces?

Yes	1/1
N/A	0/0

04.05.03 – Is the building currently certified for accessibility to a recognized standard (e.g., The Rick Hansen Foundation Accessibility Certification™ [b-RHFAC] or equivalent)

Yes – RHF Accessibility Certified Gold	2/2
Yes – RHF Accessibility Certified	1/1
N/A	0/0

List of questions related to health and wellness

Demonstration of intent

05.01.01 – Is a *Legionella* bacteria control management programme in place in the building?

Yes	17/17
No	0/17
N/A	0/0

05.01.02 – Is a refrigerant safety programme in place in the building?

Yes	13/13
No	0/13
N/A	0/0

05.01.03 – Is a safety programme in place for halocarbon fire suppression systems?

Yes	15/15
No	0/15
N/A	0/0

05.01.04 – Is a management programme in place at the building for above or underground storage tanks (ASTs or /USTs) for fuel?

Yes	8/8
No	0/8
N/A	0/0

Assessment

05.02.01 – Has a radon risk assessment been completed for the building?

Yes	15/15
No	0/15

Operations and maintenance

05.03.01 – Are mitigation strategies in place to bring radon concentrations to within acceptable limits?

Yes	9/9
No	0/9
Unknown	0/9
N/A	0/0

Building systems

05.04.01 – Are secondary containment measures in place in base-building areas where chemicals are stored or used?

Yes	10/10
No	0/10
N/A	0/0

Innovation

05.05.01 – Are features that attempt to simulate the natural environment installed in commonly occupied base-building areas?

Yes	1/1
N/A	0/0

List of questions related to purchasing

Demonstration of intent

06.01.01 – Is an environmental procurement programme in place in the building that includes components 06.01.02 to 06.01.09?

06.01.02 – Cleaning devices, products and supplies

Yes	2/2
No	0/2

06.01.03 – Office supplies

Yes	2/2
No	0/2

06.01.04 – Products used for building operations and maintenance

Yes	2/2
No	0/2

06.01.05 – Cleaning equipment

Yes	2/2
No	0/2

06.01.06 – Building materials used for renovations

Yes	2/2
No	0/2

06.01.07 – Energy efficient equipment

Yes	2/2
No	0/2

06.01.08 – Water efficient equipment

Yes	2/2
No	0/2

06.01.09 – Are private or independent retailers engaged in an environmental procurement programme?

Yes	7/7
No	0/7
N/A	0/0

Operations and maintenance

06.03.01 – Is the environmental procurement programme reviewed and updated annually?

Yes	5/5
No	0/5
N/A	0/0

List of questions related to custodial

Demonstration of intent

07.01.01 – Are details about the green cleaning initiative shared with building occupants?

Yes	7/7
No	0/7

Assessment

07.02.01 – Is a green cleaning audit conducted annually on the building?

Cleanliness goals are being met	5/11
Green products are being used appropriately	6/11
No	0/11

Operations and maintenance

07.03.01 – Does building management maintain an inventory and sanitation schedule for frequently-touched surfaces?

Yes	5/5
No	0/5

07.03.02 – Are pest-reduction strategies in place in the building?

Yes	9/9
No	0/9

Building Systems

07.04.01 – Is high-efficiency cleaning equipment used in the building?

Yes	13/13
No	0/13

Innovation

07.05.01 – Is a daytime cleaning schedule included in the green cleaning programme?

Yes	1/1
N/A	0/0

List of questions related to waste

Demonstration of intent

08.01.01 – Is a waste reduction and diversion policy in place in the building?

Yes	10/10
No	0/10

08.01.02 – Is a programme in place at the building to minimize CRD waste being sent to landfill?

Yes	8/8
No	0/8

08.01.03 – Are communication strategies in place to promote a greater understanding of the waste reduction work plan?

Yes	7/7
No	0/7

Assessment

08.02.01 – What is the building's reduce, re-use, recycle (3Rs) diversion rate?

90%-100%	15/15
80%- 89.9%	12/15
70-79.9%	9/15
60-69.9%	6/15
50-59.9%	3/15
40-49.9%	2/15
30-39.9%	1/15
Under 30%	0/15
Unknown	0/15

08.02.02 – What is the building's capture rate?

90-100%	10/10
80%-89.9%	8/10
70-79.9%	6/10
60-69.9%	4/10
50-59.9%	2/10
Under 50%	0/10
Unknown	0/10

08.02.03 – Is there evidence of a reduction in the overall generation of waste relative to your baseline year?

Yes	6/6
No	0/6
N/A	0/0

Operations and maintenance

08.03.01 – Are any of the following waste diversion initiatives in place in the building?

Packaging reduction	4/24
Electronic communication	4/24
Bulk dispensers	4/24
Food waste diversion	4/24
Re-usable china and utensils	4/24
Paper accountability system	4/24
Take-back programmes	4/24
Removable carpet tiles	4/24
Other	4/24
None	0/24

08.03.02 – Has the recycling programme been expanded to include any of the following waste materials?

Batteries	2/16
Electronics	2/16
Ballasts, fluorescent tubes, CFL and lamps containing mercury	2/16
Coffee cups	2/16
Coffee pods	2/16
Organic food material for composting (if not offered by municipality)	2/16
Low grade paper	2/16
Grease or cooking oil	2/16
Toner cartridges	2/16
Wood	2/16
Scrap metal	2/16
Furniture	2/16
Merchandise bulk packaging (shrink wrap, polystyrene foam)	2/16
Other waste material	2/16
None	0/16

08.03.03 – Are re-use initiatives in place in the building that have the potential to result in less waste disposal?

Yes	8/8
No	0/8

Innovation

08.05.01 – Are recycling bins provided to staff, tenants and visitors for point of generation collection throughout the building?

Yes	1/1
N/A	0/0

08.05.02 – Are other measures in place in the building to improve waste diversion?

Yes	1/1
N/A	0/0

08.05.03 – Has the final disposition or destination been identified of at least three materials removed from the site for re-use, recycling, composting or disposal?

Yes	1/1
N/A	0/0

List of questions related to site

Demonstration of intent

09.01.01 – Is a landscape management programme in place for the building that includes the considerations in 09.01.02 to 09.01.05.

09.01.02 – Use of native species

Yes	2/2
No	0/2
N/A	0/0

09.01.03 – Protect or restore habitat

Yes	2/2
No	0/2
N/A	0/0

09.01.04 – Control or removal of invasive or non-native species

Yes	2/2
No	0/2
N/A	0/0

09.01.05 – Use of environmentally preferable pesticides, fertilizers and herbicides or minimize their use

Yes	2/2
No	0/2
N/A	0/0

09.01.06 – Is there a hardscape management programme in place for the building that includes the considerations in 09.01.07 to 09.01.13?

09.01.07 – Regular cleaning of hardscape areas such as sidewalks, pavement, parking garages, parking lots

Yes	2/2
No	0/2
N/A	0/0

09.01.08 – Regular cleaning of the building's exterior facade

Yes	2/2
No	0/2

09.01.09 – Use of environmentally preferable cleaning chemicals

Yes	2/2
No	0/2
N/A	0/0

09.01.10 – Use of environmentally preferable maintenance equipment

Yes	2/2
No	0/2
N/A	0/0

09.01.11 – Use of environmentally preferred snow and ice melting products

Yes	2/2
No	0/2
N/A	0/0

09.01.12 – Are de-icing agents appropriately applied?

Yes	2/2
No	0/2
N/A	0/0

09.01.13 – Has a resilience or business continuity plan been prepared for the building that includes the components in 09.01.14 to 09.01.18.

09.01.14 – A long-term climate-change risk assessment

Yes	5/5
No	0/5

09.01.15 – An adaptation plan based on assessed long-term climate risks

Yes	5/5
No	0/5

09.01.16 – A short-term hazard assessment

Yes	5/5
No	0/5

09.01.17 – Plans to safeguard against potential short-term hazards

Yes	5/5
No	0/5

09.01.18 – Has the resilience plan been reviewed, signed, and dated by senior management within the last 3 years?

Yes	3/3
No	0/3
N/A	0/0

Assessment

09.02.01 – Has a property condition assessment (PCA) report been completed for this building within the past 5 years?

Yes	10/10
No	0/10
N/A	0/0

09.02.02 – Has an environmental site assessment been completed for the property?

Yes	10/10
No	0/10

Operations and maintenance

09.03.01 – Have steps been taken to address the issues identified in the PCA report?

Yes	10/10
No	0/10
N/A	0/0

09.03.02 – Are controls in place to address migration of known soil or groundwater contaminants into the building?

Yes	8/8
No	0/8
N/A	0/0

09.03.03 – Are high albedo surfaces cleaned regularly to maintain effective solar reflectance?

Yes	5/5
No	0/5
N/A	0/0

Building systems

09.04.01 – Are measures in place to reduce light pollution?

Yes	6/6
No	0/6

Innovation

09.05.01 – Does the facility site include features to minimize and manage storm water runoff?

Yes	1/1
N/A	0/0

09.05.02 – Has building management developed a third-party accredited environmental management system?

Yes	1/1
N/A	0/0

09.05.03 – Are bird-friendly measures in place to mitigate daytime collisions?

Yes	1/1
N/A	0/0

09.05.04 – Does 75 % or more of the available impermeable surface area have a high solar reflectance index value?

Yes	1/1
N/A	0/0

09.05.05 – Is 30 % or more of the roof space covered by a green roof?

Yes	1/1
N/A	0/0

List of questions related to stakeholder engagement

Demonstration of intent

10.01.01 – Has the environmental policy been clearly communicated to building occupants?

Yes	3/3
No	0/3

10.01.02 – Are members of the building management team specifically responsible for implementing environmental initiatives?

Yes	12/12
No	0/12

10.01.03 – Is the building's environmental performance tied to one or more KPIs for building staff?

Yes	9/9
No	0/9

10.01.04 – Are tenants required to comply with specific environmental criteria?

Energy efficiency	1/4
Water efficiency	1/4
Environmental fit-up plan	1/4
Waste reduction and recycling	1/4
None	0/4
N/A	0/0

Assessment

10.02.01 – Does building management regularly conduct an occupant satisfaction survey that includes the components in 10.02.02 to 10.02.09?

10.02.02 – Quality and effectiveness of building management and services

Yes	3/3
No	0/3

10.02.03 – Air quality

Yes	3/3
No	0/3

10.02.04 – Thermal comfort

Yes	3/3
No	0/3

10.02.05 – Lighting

Yes	3/3
No	0/3

10.02.06 – Acoustics

Yes	3/3
No	0/3

10.02.07 – Frequency and timeliness of communication and response times

Yes	3/3
No	0/3

10.02.08 – Environmental or sustainability priorities

Yes	3/3
No	0/3

10.02.09 – Is a transportation survey conducted in the building?

Yes	20/20
No	0/20

Operations and maintenance

10.03.01 – Does building management act on responses obtained from occupant satisfaction surveys?

	Yes	No	N/A
Quality and effectiveness of building management and service	1/8	0/8	0/0
Air quality	1/8	0/8	0/0
Thermal comfort	1/8	0/8	0/0
Lighting	1/8	0/8	0/0
Acoustics	1/8	0/8	0/0
Frequency and timeliness of communication and response times	1/8	0/8	0/0
Environmental/sustainability priorities	1/8	0/8	0/0
Transportation survey	1/8	0/8	0/0

10.03.02 – Are opportunities created and promoted for occupants to contribute to the community?

Yes	5/5
No	0/5

Building systems

10.04.01 – Are the following measures in place in the building to promote sustainable modes of travel?

10.04.02 – Promoting the use of public transport

Yes	4/4
No	0/4
N/A	0/0

10.04.03 – Encouraging carpooling or car sharing programmes

Yes	4/4
No	0/4
N/A	0/0

10.04.04 – Providing a charging station for electric or hybrid vehicles

Yes	4/4
No	0/4
N/A	0/0

10.04.05 – Providing safe, secure, and covered bicycle racks

	Yes	No	N/A
Safe and secured racks	2/4	0/4	0/0
Covered racks	2/4	0/4	0/0

10.04.06 – Providing showering and changing facilities for occupant use

Yes	4/4
No	0/4
N/A	0/0

Innovation

10.05.02 – Is the building's environmental performance documented in a publicly available sustainability report?

Yes	6/6
N/A	0/0

10.05.03 – Is the sustainability report verified or validated by an external third party?

Yes	6/6
N/A	0/0

Bibliography

- [b-ANSI/ASHRAE/ACCA 211] ANSI/ASHRAE/ACCA Standard 211-2018, *Standard for commercial building energy audits*.
- [b-BOMA] Building Owners and Managers Association of Canada (2016). *About BOMA Canada*. Toronto, ON: BOMA Canada. Available [viewed 2020-08-28] at: <http://bomacanada.ca/bomabest/aboutbomabest/>
- [b-RHFAC] Rick Hansen Foundation (2020). Rick Hansen Foundation Accessibility Certification™. Available [viewed 2020-08-29] from: <https://www.rickhansen.com/become-accessible/rating-certification#main-content>
- [b-UNECE GHS] United Nations (2011), *Globally harmonized system of classification and labelling of chemicals (GHS)*, 4th edition. Geneva: UNECE. 568 pp. Available [viewed 2020-08-26] at: https://www.unece.org/fileadmin/DAM/trans/danger/publi/ghs/ghs_rev04/English/ST-SG-AC10-30-Rev4e.pdf

SERIES OF ITU-T RECOMMENDATIONS

Series A	Organization of the work of ITU-T
Series D	Tariff and accounting principles and international telecommunication/ICT economic and policy issues
Series E	Overall network operation, telephone service, service operation and human factors
Series F	Non-telephone telecommunication services
Series G	Transmission systems and media, digital systems and networks
Series H	Audiovisual and multimedia systems
Series I	Integrated services digital network
Series J	Cable networks and transmission of television, sound programme and other multimedia signals
Series K	Protection against interference
Series L	Environment and ICTs, climate change, e-waste, energy efficiency; construction, installation and protection of cables and other elements of outside plant
Series M	Telecommunication management, including TMN and network maintenance
Series N	Maintenance: international sound programme and television transmission circuits
Series O	Specifications of measuring equipment
Series P	Telephone transmission quality, telephone installations, local line networks
Series Q	Switching and signalling, and associated measurements and tests
Series R	Telegraph transmission
Series S	Telegraph services terminal equipment
Series T	Terminals for telematic services
Series U	Telegraph switching
Series V	Data communication over the telephone network
Series X	Data networks, open system communications and security
Series Y	Global information infrastructure, Internet protocol aspects, next-generation networks, Internet of Things and smart cities
Series Z	Languages and general software aspects for telecommunication systems