

## Facilities Management

### Building Operations & Maintenance Sustainability Guidelines

#### 1. Purpose

To establish a procedure for ensuring that sustainability principles are incorporated in the operations and maintenance (O&M) of Concordia's buildings and grounds. The goal is to meet as many of the guideline objectives as possible in order to reach the long term goal of economy, energy efficiency, resource conservation, and pollution prevention while meeting comfort, health and safety requirements of the building users.

#### 2. Scope

These guidelines are intended to be applied to building and grounds O&M at Concordia University. All Facilities Management departments, including Strategic Planning, Property Management and Project Management are responsible for incorporating these guidelines into their activities and projects. These guidelines extend to other internal stakeholders (e.g., academic and service departments) involved with O&M, as well as external contractors and third party developers.

#### 3. Definitions

**3.1. Building and Grounds Operations and Maintenance (O&M):** Broad range of services required to assure the built and landscaped environment will perform the functions for which it was designed and constructed. These services include planned, preventive, predictive and corrective (repair) maintenance.

**3.2. University buildings:** Premises owned and operated by Concordia University and leased buildings where the custodial and maintenance staff members are under a contract agreement with the university and the university has controls over the energy and water systems.

#### 4. Sustainability Guidelines

##### 4.1. Impacts on the surrounding site

- a) Reduce harmful chemical use, energy waste, water waste, air pollution, solid waste, and/or chemical runoff during the following O&M activities that impact surrounding sites:
  - Cleaning of building exterior, pavement, and other impervious surfaces;
    - When cleaning the exterior of buildings a low water consumption power washer is used and is done at minimum frequencies.
  - Fertilizer is not used on the downtown grounds.
- b) Directives for reducing negative environmental impacts from O&M activities that impact surrounding sites:

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- Use low emissions maintenance equipment, where feasible;
- Do not use biosolid-based fertilizers or “weed and feed” formulations;
- Monitor irrigation systems manually or with automated systems at least every two weeks during the operating season for appropriate water usage, system times, leaks, or breaks;
- Calcium chloride-based deicer for 30% of deicing needs. Sodium chloride used for the remaining 70%.
- Store materials and equipment to prevent air and site contamination;
- Follow guidelines established in an Integrated Pest Management Plan for any pesticide use;
- Establish and maintain an Integrated Residual Materials Management Program and Plan that addresses reduction, reuse, recycling, and composting of residual material generated by the Concordia community on campus.
  - The integrated residual materials management plan should include:
    - Objectives and plans for materials reduction and diversion;
    - A plan to measure progress, including compiling and analyzing waste management data at a minimum frequency of once per year;
    - A community engagement plan;
    - A residual materials management policy ;
    - Waste bin standards for renovations including:
      - Established storage locations for compostable and recyclable materials, including mixed paper, corrugated cardboard, glass, plastics, and metals.

#### 4.2. Energy consumption

- a) Establish and maintain an Energy Management Plan for current facilities requirements that contains the information necessary to operate the University’s buildings efficiently. The plan should include the following:
  - A current sequence of operations for the building;
  - The building occupancy schedule;
  - Equipment run-time schedules;
  - Set points for all HVAC equipment;
  - Minimum outside air requirements;
  - Any changes in schedules or set points for different seasons, days of the week, and times of day;
  - A systems narrative describing the mechanical and electrical systems and equipment in the building;
  - Building enclosure limits area of fenestration with respect to orientation;
  - Engaging and encouraging community to practice responsible energy saving measures by Controlled lighting, turning off computers, nightly temperature & lighting set-backs in our automated buildings;
  - Energy coordination role.
  
- b) Reduce the environmental and economic harms associated with excessive energy use such that a minimum energy operating performance is established:
  - Option 1: Benchmark against typical buildings: If national average source energy data are unavailable for buildings of similar type, benchmark against the building site energy data of at least three similar buildings, normalized for climate, building use, and occupancy. Demonstrate improvements.

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#### 4.3. Building energy metering

- a) Meters should be installed in major buildings. Gas and electricity consumption data should be collected and reported every month for the major buildings.

#### 4.4. Usage of environmentally preferable materials

- a) As per the University's Environmental Policy (VPS-5), consider life cycle costs and impacts when assessing products and equipment for procurement and, when possible, tender to suppliers that are local and/or committed to environmental sustainability. Some priorities include:
  - Give precedence to products containing postconsumer recycled content;
  - Consider extended use of equipment and supplies.
    - Batteries should be rechargeable
- b) Low emissions of volatile organic compounds
  - All paints and coatings wet-applied on site must meet the applicable VOC limits of the California Air Resources Board (CARB) 2007, Suggested Control Measure (SCM) for Architectural Coatings, or the South Coast Air Quality Management District (SCAQMD) Rule 1113, effective June 3, 2011.
- c) Cleaning and janitorial products and equipment
  - Through contractual obligations, Concordia's cleaning & janitorial contractor is obligated to use cleaning products that are environmentally-certified, such as UL EcoLogo, Green Seal or equivalent
    - Powered floor maintenance equipment should have vacuums, guards, or other devices for capturing fine particles such as HEPA filters;
    - Propane-powered floor equipment is not used.
- d) Lead-free plumbing fixtures for all potable water i.e. kitchen faucets and drinking fountains.
- e) Refrigerants for cooling system are selected based on the environmental impact i.e. CO2 ice maker vs. ammonia-based, ozone friendly R-410A refrigerants.

#### 4.5. Indoor environmental quality

- a) Implement and maintain an HVAC system maintenance program, to ensure the proper operations and maintenance of HVAC components as they relate to outdoor air introduction and exhaust.
- b) Maintain a reporting mechanism for air quality problems issue.
- c) Concordia Smoke-Free Environment Policy (VPS-1)
  - Smoking or the use of an electronic cigarette is prohibited in all enclosed public spaces, in work and learning environments and in all outdoor places prohibited by the Quebec Tobacco Control Act;
  - Smoking or the use of an electronic cigarette is prohibited within nine (9) metres of doors, windows that open and building intakes/ventilation systems.

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#### 4.6. Water consumption

- a) Low-consumption fixtures will be used in all new projects, renovations and repairs. Fixtures labelled as low-consumption will be prioritized i.e. labelled WaterSense.
- b) Existing equipment and fixtures will be targeted to be replaced or updated to meet a 20% reduction in water consumption (with respect to figures from March 2013).
- c) Most fluid-cooled equipment should be connected to a closed-loop system that recycles water and recovers the heat.

#### 4.7. Building water metering

- a) All major buildings will be fitted with a new water meter. These meters will be read at regular intervals, either remotely or in person, in order to track Concordia's domestic water use.
- b) Compile annual data to be included in Facilities Management internal report.

### 5. Compliance

These guidelines are prioritized in the O&M activities of the university. In order to ensure compliance these guidelines were created in collaboration with the relevant parties involved. The guidelines are distributed to appropriate staff members and training is given to ensure that the guidelines are well understood and carried out correctly. An audit is completed to ensure that these guidelines are followed and updated when necessary.

### 6. References

References used to develop the Building Operations & Maintenance Sustainability Guidelines include:

#### 6.1. Concordia University Policies

- a) BD-7: Sustainability Policy
- b) VPS-1: Smoke-Free Environment Policy
- c) VPS-5: Environmental Policy
- d) VPS-32: Policy on Computer Provisioning

#### 6.2. USGBC LEED v4 Building Operations and Maintenance (O+M) Rating Systems with Canadian Alternative Compliance Paths

### 7. Signature

This SOP requires the following approvals:

Michel Nadeau  
Associate Vice-President  
Facilities Management



Signature

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Date

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