



Sustainable Operations & Maintenance Plan

LANGARA COLLEGE

Revision May 2021

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Introduction

The Langara community has a strong commitment to environmental, financial, and social sustainability, which includes responsibility to students, faculty, staff, the institution, our community, and the world. As part of the College's commitment to reducing energy and greenhouse gas (GHG) Emissions, an Environmental Responsibility Policy was established in June 2001. The purpose of the board governance policy is as follows:

To provide direction to the College regarding the creation of learning and working environment characterized by social responsibility, the Board is committed to:

- *protecting and enhancing the environment for future generations, and*
- *using and managing its own physical environment more sustainably*

In 2017, Langara College renewed its Sustainability policy to affirm its ongoing commitment to and responsibility for fostering an institutional culture characterized by leadership in environmental, social and financial sustainability. The College also established a sustainability committee to advise senior leadership and pursue opportunities for all members of the College community to make choices that promote sustainability in the teaching, learning, researching and working environments in alignment with strategic directions.

Langara has been actively monitoring and managing energy usage of its facilities for over 20 years. In addition, Langara was leading the way when it established a policy to have any new building constructions be minimum LEED® Gold before it was required by the City of Vancouver. Today, Langara has 4 LEED Gold certified building; with our new Science & Technology (S&T) Building open, over 40% of the campus will be LEED Gold buildings.

The 2025 Strategic Plan – Weaving a shared future is an ambitious plan to strengthen the College's culture, programming, community connections, sustainability, and Indigenization. It again reaffirms the College's commitment to sustainability and includes a goal to achieve a STARS Bronze rating and work towards Silver.

Within this context, Langara has created this Sustainable Operations and Maintenance Plan to ensure that all campus facilities are helping the College achieve its sustainability goals and minimize its impact on the planet.

Langara’s Sustainable Operations & Maintenance Plan

Langara’s Sustainable Operations and Maintenance Plan guides decisions for operations and maintenance of existing facilities on Langara’s campus and is an important component of the College’s commitment to sustainability.

1.1 Application

The Plan applies to all facilities operated and maintained on Langara College’s main campus.

1.2 Structure

The Plan primarily references the requirements of LEED Operations and Maintenance v4 (LEED O+M v4). While the Plan does not require certification, building operations and maintenance follow the criteria and requirements from LEED O+M, and follow three basic types of sustainability requirements:

- Mandatory requirements that identify the minimum level of sustainability requirements for all building operations and maintenance, aligned with LEED O+M v4 pre-requisites.
- Optional pursuits that align with best practices and that the College may pursue. These requirements represent LEED O+M v4 credits that align with the College’s sustainability priorities

These requirements are summarized below, and further details on requirements can be found in the LEED O+M v4 Reference Guide.

1.3 Mandatory requirements

| Prerequisite | Intent | Requirements* |
|---|---|---|
| Water Performance | To support water management and reduce water consumption. | Have permanently installed water meters that measure the total potable water use for the project and associated grounds. All potable or reclaimed water supplied to the project must be metered. 3 billing water meters are available, additional meters are read manually. We continue to consider other metering strategies and temporary metering to understand usage patterns. |
| Energy Efficiency Best Management Practices | To promote continuity of information to ensure that energy-efficient operating strategies are maintained and provide a foundation for training and system analysis. | Conduct an ASHRAE Level 1 walk-through assessment to identify preliminary energy use. Recent participation in Continuous optimization program and Thermal energy study completed. We continue to review realtime metering to understand usage patterns and anomalies. |
| Fundamental Refrigerant Management | To reduce stratospheric ozone depletion. | Do not use chlorofluorocarbon (CFC)-based refrigerants in heating, ventilating, air-conditioning, and refrigeration (HVAC&R) systems unless a third-party audit shows that system replacement or conversion is not economically feasible or unless a phase-out plan for CFC-based refrigerants is in place. Phase-out plans should be scheduled for completion within 10 years. |

| | | |
|---|--|---|
| <p>Energy Performance</p> | <p>To support energy management and reduce environmental and economic harms associated with excessive energy use by reducing greenhouse gas emissions and achieving higher levels of operating energy performance.</p> | <p>Have permanently installed energy meters or submeters that measure total building energy consumption (electricity, natural gas, chilled water, steam, fuel oil, propane, etc).</p> <p>Measure the project’s energy use on a monthly basis for twelve consecutive months, and use that data to obtain an energy performance score.</p> <p>We have real-time energy use available at building an sub meter level, including Kaizen analysis software capability.</p> |
| <p>Minimum Indoor Air Quality</p> | <p>To contribute to the comfort and well-being of building occupants by establishing minimum standards for indoor air quality (IAQ).</p> | <p>Maintain the ventilation system equipment and associated components based on Table 8.2 of ASHRAE 62.1-2016. Include information on ventilation system operation and preventative maintenance in the current facilities requirements and operations and maintenance plan required for compliance with EA prerequisite Energy Efficiency Best Management Practices.</p> |
| <p>Indoor environmental Performance</p> | <p>To assess how well the building is performing for the occupants, in particular with regards to indoor air quality and comfort.</p> | <p>Conduct an occupant satisfaction survey and/or an indoor air quality evaluation.</p> <ul style="list-style-type: none"> • Occupant satisfaction is gathered via a survey conducted in the system at least once in the year. • Indoor air quality is evaluated from interior Carbon dioxide levels (CO2) and interior total Volatile Organic compound (TVOC) measurements taken at least once in the year. <p>Plan to carry out initial survey & measurements/ study in within the next year.</p> |

**See LEED O+M v4 Reference Guide for further details on requirements and reporting related to the above.*

1.4 Optional pursuits

| Prerequisite | Intent | Requirements* |
|---------------------------------|--|--|
| Enhanced Refrigerant Management | To reduce ozone depletion and support early compliance with the Montreal Protocol while minimizing direct contributions to climate change. | <p>Option 1. No Refrigerants or Low-Impact Refrigerants Do not use refrigerants, or use only refrigerants (naturally occurring or synthetic) that have an ozone depletion potential (ODP) of zero and a global warming potential (GWP) of less than 50.</p> <p>OR</p> <p>Option 2. Calculation of Refrigerant Impact Select refrigerants that are used in heating, ventilating, air-conditioning, and refrigeration (HVAC&R) equipment to minimize or eliminate the emission of compounds that contribute to ozone depletion and climate change.</p> |

**See LEED O+M v4 Reference Guide for further details on requirements and reporting related to the above.*

1.5 Reporting and conclusion

The Plan does not require certification, building operations and maintenance follow the criteria and requirements from LEED O+M, and incorporate reporting into other annual operations and maintenance reporting processes.

Langara works closely with its Operating Engineers from ACML to communicate quarterly and annually on progress. Energy exception reporting is received monthly. Carbon Neutral Action Reports are completed annually, along with and energy management plan update.