

Western
UNIVERSITY · CANADA

Sustainable Design Guidelines

2026





TABLE OF CONTENTS /
Sustainable Design Guidelines

01. INTRODUCTION 2

02. HOW TO APPLY THE SUSTAINABLE DESIGN GUIDELINES 4

03. PROCESS REQUIREMENTS 7

04. PERFORMANCE REQUIREMENTS 12

APPENDICES 17
- A. Resources 18
- B. Western Sustainable Design Guidelines Checklist 19
- C. LEED v4 Scorecard 20

SUSTAINABLE DESIGN GUIDELINE REQUIREMENTS

1.0 INTRODUCTION

Western University is committed to improving the performance of buildings across its campus to reduce greenhouse gas emissions, improve human health, quality of space, and support thriving ecosystems. The objective of the Sustainable Design Guidelines (herein the Guidelines or SDG) is to establish minimum performance criteria for buildings and sites, strengthen best practices of sustainable design, and encourage advanced building performance over time.

The Guidelines have been developed by Western's Facilities Development and Engineering Department with contributions from Facilities Management staff, and builds upon:

- Campus Development Strategy (2025) (confirm final name of document),
- Western's Open Space Strategy (2025)
- Climate and Sustainability Strategy (2025), and
- Sustainable Procurement Strategy 2023-2025.

The Guidelines were informed by a study of past sustainable design strategies applied on campus and a review of best practices at other leading institutions and organizations. To streamline the effort with current campus processes, the Guidelines reference existing programs and policies, and are aligned with third party green building rating systems such as the LEED Green Building Rating System, Zero Carbon Building Standards, WELL Building Standard, and Green Globes Building Certification Program, where relevant and applicable.

Western recognizes that strong performance requirements must be supported by a shift in design, construction, and operation processes in order to improve long-term performance of its building portfolio. The University understands that a holistic approach to designing and retrofitting buildings on campus is required to optimize performance, and that consideration should be given to life cycle costing to understand long-term trade-offs between capital costs, operational cost savings and meeting campus performance goals. As such, in addition to minimum performance criteria, the Guidelines require a set of practices to be implemented as part of every project process to support strong project outcomes and ongoing performance.

All projects, as described herein, are expected to conform to the Sustainable Design Guidelines, unless special direction or exemption is granted in the form of a variance by the Facilities Development and Engineering Department. The Guidelines are supported with supplementary resources and a project delivery checklist which are found in the Appendices A—C..

1.1 Western University and LEED Compliance

Western may require projects to attain certification under the LEED Rating system. The selection of appropriate LEED rating system and level of certification will be established during project initiation in collaboration with the Facilities Development and Engineering Department. These Guidelines are intended to supplement the LEED compliance approach by identifying additional mandatory requirements that reflect Western's environmental and sustainability priorities. .

1.2 Guidelines Updates

Western's Sustainable Design Guidelines will be reviewed and updated by the Facilities Development and Engineering Department on a regular basis to reflect changes in code, best practices and overall Campus performance goals.

1.3. Professional Standards

Western's Sustainable Design Guidelines do not exempt consultants from liability or the need for due diligence, and it is expected that project teams use professional judgement when executing projects on Campus and referencing these Guidelines. Western's Facilities Development and Engineering Department should be consulted when issues arise in relation to the compliance with the Guidelines.

2.0 HOW TO APPLY THE SUSTAINABLE DESIGN GUIDELINES

Step 1 – Classify the Project

In order to accommodate the wide range of new buildings, renovations, alterations, and landscape projects that will be developed across the campus, the Guidelines have defined performance criteria for three project categories. At the outset of the project, the Facilities Development and Engineering (FDE) Department will determine and confirm a project's classification as per the project definitions below and assign a department Project Manager to oversee the process and liaise with a project team throughout the project delivery.

Table 1 – Project Classification

PROJECT TYPE		PROJECT DESCRIPTION
1	MAJOR CAPITAL PROJECTS	All new building construction projects and major renovations that include mechanical and electrical system upgrades or replacement, envelope improvements, and room reconfiguration.
2	MINOR CAPITAL PROJECTS*	Project examples may include minor space renovation, alteration or system upgrade or replacement (i.e., replacement of a single mechanical, electrical, or furniture system).
3	SITE PROJECTS	Project examples may include stormwater management, soft and hard landscaping, irrigation, or exterior lighting.

* All minor capital projects in LEED-certified buildings or buildings designed in accordance with the SDG must conform to the Guidelines, regardless of the total cost of the project.

In general, it is recognized that a certain degree of flexibility in interpretation will be required when applying the Guidelines to the range and diversity of minor capital projects, and variances will be directed and approved by the Facilities Development and Engineering Department on a case-by-case basis.

Step 2 – Apply Process + Performance Requirements

For each project type, the Guidelines are structured according to mandatory process and performance requirements.

Process Requirements are to apply across project scopes, and include all or some of the following:

- Integrated Design Process
- Climate Change Adaptation
- Energy Modeling

- Operational Carbon Projection and Decarbonization Plan
- Commissioning
- Performance Metering
- Life Cycle Assessment

Performance Requirements are structured around six categories that best reflect and align with Western's commitments to greenhouse gas reduction, human health and wellness, healthy ecosystems, and optimized operations. Mandatory performance requirements are described within each category. Additional guidance on strategies, resources, and tools that are relevant to these Guidelines are consolidated in Appendix A. In some cases, specific stretch goals have been identified for explicit consideration. However, project teams are strongly encouraged to strive for the highest performance achievable for each project beyond the mandatory requirements.

Performance areas include:

- Energy + Greenhouse Gas Emissions: states minimum performance goals for building energy performance, greenhouse gas emissions, and implementation of best practices related to building commissioning and metering.
- Water Use: establishes minimum performance goals for building and landscape water use.
- Health + Wellness: establishes minimum performance criteria for indoor environmental quality.
- Site Considerations: outlines best practices for hard and soft landscapes, storm water management, and exterior lighting.
- Constructability: establishes construction best practices, considers material sourcing, and waste streams.
- Operations + Maintenance: connects design to user experience and best practices in operation.

Conformance with the Guidelines is defined accordingly:

- Mandatory ( )—requirement must be met by the project.
- Mandatory when applicable ()—requirement will be determined mandatory by FDE and will be dependent on the project scope.
- Optional when applicable ( )—depending on the scale and scope of the project, the requirement may be optional and will be confirmed by the FDE.
- Not applicable (–)—requirement does not apply to the project.

Step 3 – Accountability + Verification

All projects must confirm conformance with the Guidelines at various stages throughout design, construction, occupancy, and operation. At each milestone, project teams should undertake a design review to ensure the SDG requirements are integrated into the building design, and must submit the following information in addition to the specific requirements listed in the preceding sections:

- A completed Sustainable Design Guidelines (SDG) Checklist (see Appendix B).
- A narrative of the project's sustainable design approach and conformance with the SDG requirements; and
- When applicable, a LEED scorecard.

Project teams are required to retain all applicable supporting documentation (e.g., documents, drawings, CCOs, photos, etc.). Facilities Development and Engineering Department may request supporting documentation to verify conformance with the Guidelines.

Step 4 – Conform with LEED or other Rating System

Projects selected to certify through the LEED Rating Systems will determine the appropriate LEED rating system and level of certification in collaboration with the Facilities Development and Engineering Department. LEED projects must conform to the Process and Performance Requirements outlined within these Guidelines.

Project teams should complete milestone LEED reviews to ensure prerequisite and credit requirements are integrated into the building design and specifications. The following four milestone reviews are recommended at a minimum:

- 90% Schematic Design
- 90% Design Development
- 50% and 90% Construction Documents
- Periodic LEED reviews during construction

Step 5 – Variances

Where a project team determines any part of the Sustainable Design Guidelines to exceed the scope of the project, be overly onerous or not applicable, the team may apply to the Facilities Development and Engineering Department for a variance. Variance requests must be submitted no later than the end of Schematic Design.

3.0 PROCESS REQUIREMENTS

Integrated Design

Requirements:

Conduct integrated design charrettes (workshops) as part of the schematic design process.

	MAJOR	MINOR	SITE
PROJECT CONFORMANCE	●	–	–

● *Mandatory,* ◑ *Mandatory when applicable,* ○ *Optional when applicable,* – *Not applicable*

Guidance:

The intent of the charrettes is for the University and project team to explore a range of strategies and to understand the synergies between them with the goal of improving the project's performance. Charrettes should address project goals, explore design strategies, and include full representation from the design team, relevant University stakeholders, including Operations and Maintenance staff and additional experts such as ecologists, energy modelers or academic researchers. The number of charrettes will be dependent on the project scope and will be specified at the project outset by the Facilities Development and Engineering Department.

Milestone Steps and Documentation:

Upon completion of individual charrettes, project teams are responsible for issuing charrette minutes to document the range of goals and strategies discussed.

A project's schematic design report submission should include a summary of the integrated design charrette, the project's sustainable design goals and range of strategies explored to meet the Guidelines.

Climate Change Adaptation

Requirements:

Examine publicly available current and future weather and climate data to assess project design opportunities associated with potential vulnerabilities.

	MAJOR	MINOR	SITE
PROJECT CONFORMANCE	●	○	○

● Mandatory, ◑ Mandatory when applicable, ○ Optional when applicable, – Not applicable

Guidance:

Analysis may include, but is not limited to, precipitation and temperature data, humidity, solar radiation, wind speed and direction, and long-term climate projections. Weather and climate analysis should inform design strategies related to rainwater capture and reuse, renewable energy technologies, and resiliency planning. This information can also be used to inform the development of an energy model. It is recommended that project teams consult publicly available data from common sources such as local weather stations or US Department of Energy's Energy Efficiency and Renewable Energy Weather Data site. See Appendix A for additional resources.

Project teams may wish to consider the following questions as part of the climate change adaptation analysis:

- What are the results of the climate model data?
- What are the vulnerabilities of the site?
- How has the design of this new project responded to these vulnerabilities and climate data?

Milestone Steps and Documentation:

A project's schematic design report submission should include a summary of the climatic metrics and how these have informed the building design (i.e., orientation) and potential integration of design strategies such as solar shading, rainwater harvesting, natural ventilation etc.

Energy Modeling

Requirements:

Conduct energy analysis and modeling at various stages to inform the building design through detailed analysis.

	MAJOR	MINOR	SITE
PROJECT CONFORMANCE	●	○	–

● *Mandatory,* ◑ *Mandatory when applicable,* ○ *Optional when applicable,* – *Not applicable*

Guidance:

Engage an experienced energy modeling professional, who is competent in using energy modeling tools and software such as IES VE, eQuest, Energy Plus, or other compatible tools. These tools can be used to model proposed energy conservation measures and determine the potential building energy performance and greenhouse gas emissions savings. An energy model can facilitate understanding the life-cycle performance of building components, mechanical and electrical systems, and facilitate measurement and verification practices.

Coordinate the energy modeling results with the project's cost consultant to inform the Class C cost estimate and life cycle cost analysis of key sustainable design measures (i.e., mechanical/ electrical systems, envelope improvements).

Milestone Steps and Documentation:

Provide the following documentation at each design milestone as noted:

PRE/CONCEPT DESIGN	• Develop initial model analysis of massing, orientation, and/or major HVAC systems with proposed energy conservation measures (ECMs), summary of energy savings per measure, and ensure compliance with ASHRAE 90.1 2022, Ontario Building Code Energy Efficiency Requirements or LEED compliance requirements (project dependent).Coordinate energy modeling results with cost consultant.
PRE/CONCEPT DESIGN	• Develop initial model analysis of massing, orientation, and/or major HVAC systems with proposed energy conservation measures (ECMs), summary of energy savings per measure, and ensure compliance with ASHRAE 90.1 2022, Ontario Building Code Energy Efficiency Requirements or LEED compliance requirements (project dependent).Coordinate energy modeling results with cost consultant.
DESIGN DEVELOPMENT	• Update energy model with multiple parametric runs comparing design options of systems and strategies.
CONSTRUCTION DOCUMENTS	• Complete the energy model based on IFC documents for design and baseline case for LEED and/or code compliance verification.
OCCUPANCY	• Submit as-built energy model summary report to FDE documenting the ECMs and associated savings • Provide energy model files for teaching and academic research purposes.

Operational Carbon Projection and D Decarbonization Plan

Requirements:

Enable building partners to visualize how their current design decisions will impact their projects' long term operational carbon emissions and to ensure that project partners are planning for low carbon outcomes from the project's inception. Use energy analysis to project carbon emissions in various stages to help and develop decarbonization plans that will inform the building design through detailed analysis.

	MAJOR	MINOR	SITE
PROJECT CONFORMANCE	●	○	–

● Mandatory, ◑ Mandatory when applicable, ○ Optional when applicable, – Not applicable

Guidance:

Analyze efficiency, peak load reduction and decarbonization measures during early stages of the design process. Estimate the amount of each type of energy the project will use annually in terms of site energy. Using the current grid data and the project's location develop a Business-as-Usual projection of the project's carbon emissions from energy use from the present through a 25-year period.

Develop a decarbonization plan that designs for electrification or develop a plan detailing how decarbonization could be achieved through a 25-year period. The plan shall:

- Describe the retrofits to be made, with approximate timeline and cost of each of the retrofit measures.
- identify equipment and/or building materials that will be discarded due to the required retrofits, along with new equipment to be purchased.
- Identify electrification ready strategies incorporated into the initial design along with a rough estimate of the avoided cost, avoided disruption, and avoided materials waste afforded by each readiness measure.

Milestone Steps and Documentation

CONSTRUCTION DOCUMENTS	• Develop initial carbon emissions projection based on initial energy model.
CONSTRUCTION	• Develop initial carbon emissions projection based on initial energy model.
OCCUPANCY	• Develop Business as Usual projection of the project carbon emissions and develop Plan for Decarbonization through a 25-year period.

Commissioning

Requirements:

Confirm energy performance and greenhouse gas emissions by verifying system operational performance through commissioning..

	MAJOR	MINOR	SITE
PROJECT CONFORMANCE	●	○	–

● Mandatory, ◑ Mandatory when applicable, ○ Optional when applicable, – Not applicable

Guidance:

Western is committed to the commissioning and ongoing commissioning of its building systems. All major capital projects must follow best practice commissioning procedures as outlined in ASHRAE 90.1-2022. The role of a Commissioning Authority is to represent the interests of the owner. The Commissioning Authority should assess design documents against the Owner's Project Requirements and ensure the building will be able to operate as intended. A Commissioning Authority should be engaged by the end of the Design Development Phase.

Milestone Steps and Documentation:

DESIGN DEVELOPMENT	• Owner should designate a Commissioning Authority for the project, Commissioning agent should assist in the development of the Owner's project requirements and should review the basis of design for compliance with the OPR.
CONSTRUCTION DOCUMENTS	• Submit Commissioning Authority report documenting peer review of construction documents for compliance with the OPR.
CONSTRUCTION ADMINISTRATION	• Complete the commissioning process and submit the final commissioning report to FDE.
OCCUPANCY	• Update O+M Manuals and submit to FDE. • Conduct equipment and process familiarization training of operating staff.

Performance Metering

Requirements:

Install permanent submeters for energy and water systems. Refer to the respective Performance Requirements section for detailed metering direction.

	MAJOR	MINOR	SITE
PROJECT CONFORMANCE	●		

● *Mandatory,* ◑ *Mandatory when applicable,* ○ *Optional when applicable,* – *Not applicable*

Guidance:

To support the ongoing metering, monitoring and optimization of building performance, the installation of energy and water meters will facilitate tracking and optimizing building performance. In the event that a Minor Project is located within a building that does not have a BAS system, it is recommended that meters are installed in an effort to future proof the building and enable the University to connect the project to a campus-wide metering system at a later date.

Project teams should work in conjunction with the Facilities Development and Engineering Department to develop a metering strategy that meets the project's program requirements and aligns with the University's operations protocols for monitoring building performance. All installed meters must be connected to existing control systems.

Special consideration should be given to projects that may, for example, have energy-intense program requirements (i.e., research labs). Project teams should consult Operations and Maintenance staff and confirm with Facilities Development and Engineering when developing this strategy.

Milestone Steps and Documentation:

CONSTRUCTION DOCUMENTS	• Submit metering and verification strategy that outlines which loads are to be metered, types of meters to be specified, and calibration certificates as part of CD submission package. • Confirm conformance with Western's Utility Metering Requirements.
CONSTRUCTION ADMINISTRATION	• Include all metering devices and BAS system in the commissioning process. • Submit the final commissioning report.
OCCUPANCY	• For performance-based contracts, compile regular metering reports summarizing energy and water usage. Where possible, provide the amount of energy or water consumed per end use identified during design.

Life Cycle Assessment

Requirements:

Enable building stakeholders to understand how their current design decisions will impact their projects' long term life cycle impacts including costs and greenhouse gas emissions.

	MAJOR	MINOR	SITE
PROJECT CONFORMANCE	●	○	

● *Mandatory,* ◑ *Mandatory when applicable,* ○ *Optional when applicable,* – *Not applicable*

Guidance:

Evaluate life cycle cost for full building construction, maintenance, utilities, renewal, and replacement over a 25-year lifespan.

Evaluate greenhouse gas emissions over a 25-year lifespan, including embodied and operational carbon using emission factors and forecasts provided by Western University

Develop a maintenance and infrastructure renewal plan consistent with the life cycle costing exercise utilized during design and include annual cost estimates for maintenance and renewal of the building for the first 25 years of its life. The plan should include replacement schedules of major building equipment and components, as well as recommended maintenance schedules & strategies.

Milestone Steps and Documentation:

PRE/CONCEPT DESIGN	• Provide a preliminary life cycle cost estimate including capital, operations, maintenance, utilities, and renewal/replacement over 25 years.
SCHEMATIC DESIGN	• Include all metering devices and BAS system in the commissioning process. • Submit the final commissioning report.
DESIGN DEVELOPMENT	• Update the life cycle costing model using design development inputs

4.0 PERFORMANCE REQUIREMENTS

Energy + Greenhouse Gas Emissions

Goal: *Projects must be designed to optimize energy performance and minimize greenhouse emissions in support of meeting Western's energy and greenhouse gas emissions performance goals.*

REQUIREMENTS*		MAJOR	MINOR	SITE
ENERGY	Demonstrate at a minimum energy reduction of 15% below ASHRAE 90.1—2010 for New Construction and reduction of 10% for Major Renovations. Projects connecting to the campus district energy system must consult the Facilities Development and Engineering Department for the energy performance of the central system and include it in the final energy model.	●		–
PEAK THERMAL LOADS	Demonstrate that project was designed to minimize peak thermal loads to minimize demand on the grid and improve the resilience of buildings through • Balanced ventilation (ventilation and exhaust airflows within 10% of each other • Air leakage of the building envelope meets requirements of Table 1 in Appendix A • Ventilation energy recovery demonstrates a minimum 70% enthalpy recovery ratio, or 75% sensible heat recover ratio • Compliance with thermal bridging requirements of ASHRA 90.1-2022	●		–
ON-SITE COMBUSTION	Demonstrate that the project is designed to minimize or eliminate any on-site combustion, except for emergency support systems. Where on site combustion cannot be eliminated completely, demonstrate it was only used at low temperatures .	●		–
RENEWABLE ENERGY	Demonstrate the project has installed renewable energy on site or offsite, or that the project has been designed for renewable energy readiness and document renewable energy readiness features in the project.	●		○

GRID RESILIENCE	Demonstrate that the project has evaluated grid-interactive measures that include energy storage or demand response considerations.	●		–
EMBODIED CARBON	Quantify the embodied carbon impacts of the structure, enclosure, and hardscape of a project and assess the top three sources of embodied carbon on the project.	●		
METERING	Install (or use existing) permanent meters to monitor, record, and report whole building energy use for each building energy source, building peak electricity demand at least monthly and on-site renewable energy generation.	●		○
COMMISSIONING	Ensure commissioning complies with ANSI?ASHRAE/IES Standard 202-2024 - "Commissioning Process for Buildings and Systems" for MEP systems, and ASTM E2947-21a - "Standard Guide for Building Enclosure Commissioning".	●	○	○
APPLIANCES	Install ENERGY STAR Appliances for all new eligible products.	●	●	
REFRIGERANTS	Reduce greenhouse gas emissions from refrigerants by accelerating the phase out of refrigerants with high global warming potential (GWP) and by reducing leakage. Do not use hydrochlorofluorocarbon refrigerants in any new equipment.			
PASSIVE SURVIVABILITY / THERMAL SAFETY	Maintain safe indoor temperatures during a 4-day power outage.			

● *Mandatory,* ◑ *Mandatory when applicable,* ○ *Optional when applicable,* – *Not applicable*

Guidance:

Consult the campus greenhouse gas and energy reduction targets and establish GHG and energy targets for the project that align with the campus goals as part of the integrated design process. Use the target to inform energy conservation measures and overall efficiency of the building.

Use the following methodology to explore design strategies and energy conservation measures:

- First, reduce loads through passive strategies.
- Then, design high performance, efficient systems;
- Finally, consider renewable energy systems.

Utilize an energy model early in the design process to assess and evaluate energy conservation measures relative to current code requirements and life cycle performance of proposed measures.

Where possible, improve building performance of major renovations, giving consideration to energy conservation measures that will lead to immediate energy savings and greenhouse gas emissions reduction.

Consult Western's Design Guidelines and Western University Exterior Lighting Standards and Specifications for performance specifications for building envelope, mechanical and electrical systems, and exterior lighting requirements.

Assess the feasibility (cost and performance) of integrating renewable energy technologies into the building. Present findings of renewable energy analysis in Schematic Design workshops.

Explore the feasibility of pursuing a net zero energy approach to the building envelope and systems design.

Documentation:

Provide the following documentation at each design milestone:

PRE/CONCEPT DESIGN	• Submit a narrative describing the energy conservation carbon reduction approach (i.e., energy conservation measures, GHG emissions potential savings) and SDG Checklist as part of the deliverable.
SCHEMATIC DESIGN	• Submit a narrative describing the energy conservation carbon reduction approach (i.e., energy conservation measures, GHG emissions potential savings) and SDG Checklist as part of the SD deliverable.
DESIGN DEVELOPMENT	• Update and submit a narrative describing the energy conservation and carbon reduction approach, refrigerant management plan and SDG Checklist as part of the DD deliverable.
CONSTRUCTION DOCUMENTS	• Submit summary report from final OBC or LEED compliant energy model and submit summary report on carbon reduction plan Complete an inventory of the refrigerant containing equipment to be installed within the project scope. The inventory shall include the refrigerant type, GWP, amounts of refrigerants contained in each and the total GWP of all refrigerants.

CONSTRUCTION ADMINISTRATION	• Submit final energy model report.Submit final commissioning report. Submit measurement and verification report.
OCCUPANCY	• Submit a final SDG Checklist confirming the project's performance and final strategies integrated into the building. Submit refrigerant leak check report to confirm that all equipment was checked for refrigerant leaks and repaired , For LEED Compliance, submit documentation for the LEED application.

Water Use

Goal: *Projects must be designed to conserve and optimize potable water use for building and landscape loads in support of meeting Western's water use performance goal.*

REQUIREMENTS						MINOR	SITE
WATER USE REDUCTION	Reduce water consumption by at least 50% compared to baseline.				●	●	–
FIXTURE PERFORMANCE RATES*	Fixture performance rates not to exceed maximum flow and pressure rates outlined belo.						
	Fixture	Maximum Flow		Pressure			
		gpm	lpm				
	Water Closet	1.06	4.8		●	●	–
	Urinal	0.132	0.5		●	●	–
	Dual Flush—Solids	1.06	4.8		●	●	–
	Dual Flush—Liquids	0.66	2.5		●	●	–
	Lavatory faucet—Suites	0.5	5.7	60psi (413kPa)	●	●	–
	Lavatory faucet—Public	0.5	1.9		●	●	–
	Kitchen faucet	1.5	5.7	60psi (413kPa)	●	●	–
	Shower head	1.5	5.7	80psi	●	●	–
	Kitchenette	1.0	3.8		●	●	–
APPLIANCES	Where applicable, install ENERGY STAR Appliances for all eligible water-consuming products.				●	●	–
METERING	Install (or use existing) permanent water meters to monitor, record, and report the total water consumption for potable and alternative water sources for the building and associated grounds.				●	●	–

● *Mandatory,* ◑ *Mandatory when applicable,* ○ *Optional when applicable,* – *Not applicable*

Guidance:

Consider design strategies that conserve potable water and reduce demand on all systems. Where possible, explore the feasibility of rainwater, condensate recovery, or stormwater capture, treatment, and reuse within the building as a strategy to support conserving potable water supplies.

Implement water metering and monitoring systems in each project to support Western's efforts to meter, monitor and improve upon its potable water use reduction targets

Documentation:

Provide the following documentation at each design milestone:

PRE/CONCEPT DESIGN	• Submit a narrative describing the water conservation approach and SDG Checklist as part of the deliverable.
SCHEMATIC DESIGN	• Submit a narrative describing the water conservation approach and SDG Checklist as part of the SD deliverable.
DESIGN DEVELOPMENT	• Update and submit a narrative describing the water conservation approach and SDG Checklist as part of the DD deliverable.
CONSTRUCTION DOCUMENTS	• Complete and submit final water use calculations to demonstrate conformance with water performance target. • Finalize and submit a narrative describing the water conservation approach and SDG Checklist as part of the CD deliverable.
CONSTRUCTION ADMINISTRATION	• Track and retain evidence (documents, cut sheets, invoices, photos, etc.) to prove SDG conformance to FDE.
OCCUPANCY	• Submit a final SDG Checklist confirming the project's performance and final strategies integrated into the building. • For LEED Compliance, submit documentation for the LEED application.

Health + Wellness

Goal: *Projects must be designed to support the long-term health and well-being of Western's students, faculty, and staff..*

REQUIREMENTS			MINOR	SITE
ENVIRONMENTAL TOBACCO SMOKE CONTROL	Prohibit smoking inside and outside the building at all times, including during construction.	●	●	●
VENTILATION	Comply with ASHRAE 62.1—2012 sections 5 and 6.	●		–
THERMAL COMFORT	Meet the comfort criteria described in ASHRAE 55—2023		○	–
RESILIENT SPACE	Demonstrate design integrates features that increase the capacity for occupants to adapt to changing climate conditions by designing for extreme heat and extreme cold	●		
OCCUPANT EXPERIENCE	Adhere to principles of universal design andculturally appropriate design.			
CONTROLLABILITY OPERABLE WINDOWS	Where possible, install operable windows for regularly occupied perimeter spaces.	●		–
CONTROLLABILITY COMFORT	For projects with office program requirements, provide for individual control of systems to address thermal comfort needs of building occupants. Controllable temperature range should adhere to Western's requirements and be agreed upon with FDE.	●		–
LOW EMITTING MATERIALS	Meet the requirements of LEED v5 MRc3 IEQ credit: Low Emitting Materials for the following categories at a minimum: interior paints and coatings; interior adhesives and sealants; flooring; furniture; composite wood; and ceilings, walls, thermal and acoustic insulation.	●		–
INDOOR AIR QUALITY—CONSTRUCTION MANAGEMENT	Develop and implement construction management practices for the construction and preoccupancy phases of the building that address the following: No smoking, extreme heat protection, HVAC protection, source – control of contaminants, pathway interruption, housekeeping, scheduling.	●		–
INDOOR AIR QUALITY FLUSH	Meet the requirements of LEED v4 IEQ credit: Indoor Air Quality Assessment, Option 1 for 1 point.	●		–
ACCESSIBILITY & INCLUSION	Comply with all accessibility codes and consider strategies that go beyond code requirements address accessibility for physical diversity, safety and aging, social health, and navigation.			

● *Mandatory,* ◑ *Mandatory when applicable,* ○ *Optional when applicable,* – *Not applicable*

Guidance:

Adopt best practices during construction to minimize indoor air quality problems and ensure the construction schedule accounts for adequate time to accommodate a flush out of the building prior to occupancy. If scheduling conflicts arise, this should be brought to the attention of the FDE Project Manager.

Design for thermally comfortable spaces that are healthy and provide adequate ventilation rates. Consult the latest ASHRAE Standards for thermal comfort (ASHRAE 55) and ventilation performance (ASHRAE 62.1).

Consult Western's Facilities Development and Engineering Department regarding the applicability of operable windows. Direction for operable window requirements will be determined on a project-by-project basis to ensure there are no conflicts with the Ministry of the Environment and Climate Change's (MOECC) requirements.

When possible, design spaces to integrate biophilic design, incorporate quality views, maximize natural daylight, integrate elements that support good acoustic performance, and foster occupant health and well-being. Consider consulting the LEED v4 for additional best practices

Documentation:

Provide the following documentation at each design milestone as noted:

PRE/CONCEPT DESIGN	• Submit a narrative describing the health and wellness approach and SDG Checklist as part of the deliverable.
SCHEMATIC DESIGN	• Submit a narrative describing the health and wellness approach and SDG Checklist as part of the SD deliverable.
DESIGN DEVELOPMENT	• Update and submit a narrative describing the health and wellness approach and SDG Checklist as part of the DD deliverable.
CONSTRUCTION DOCUMENTS	• Finalize and submit a narrative describing health and wellness approach and SDG Checklist as part of the CD deliverable.
CONSTRUCTION ADMINISTRATION	• Track and retain evidence (documents, cut sheets, invoices, photos, etc.) to prove SDG conformance to FDE. • Submit report to FDE documenting building flush out prior to occupancy.

OCCUPANCY	• Submit a final SDG Checklist confirming the project's performance and final strategies integrated into the building. • For LEED Compliance, submit documentation for the LEED application.

Site Considerations

Goal: *Projects must be designed, constructed, and operated to have a minimal impact on the natural campus ecology while being mindful of the campus-wide master plan and sustainability objective.*

REQUIREMENTS			MINOR	SITE
EROSION AND SEDIMENTATION CONTROL	Create and implement a sedimentation control plan for all construction activities associated with the project that conforms to the City of London Erosion and Sediment Control requirements (https://london.ca/sites/default/files/2024-07/2024_dsrm_ch10_erosion_and_sediment_control.pdf).	●		
SITE SELECTION	Ensure site planning and building orientation are integrated to support energy-efficient design, including optimizing solar exposure, natural ventilation, and shading.			
LANDSCAPING	Native and adaptive species shall be preferred in Western's landscape. Invasive plants will not be used in any new plantings and existing invasive plants will be removed where appropriate.	●		
BICYCLE FACILITIES	Provide bicycle parking and shower facilities as per the LEED v5 LT credit: Transportation Demand Management requirements or demonstrate that facilities exist within 180 m of the building. Bicycle storage capacity may not be double counted. Storage that is fully allocated to occupants of non-project facilities, cannot also serve project occupants. *This approach is recommended and is to be confirmed on a project-by-project basis.			–
ELECTRIC VEHICLES	Install EV equipment equivalent to 5% of total parking spaces for site (or 2 spaces, whichever is greater) or make the minimum number of EV parking spaces EV ready.			

IRRIGATION	Demonstrate that the landscape does not require a permanent irrigation system beyond a maximum two-year establishment period.	●		
STORMWATER	Design the site to retain the runoff from the developed site for at least the 80% percentile of rainfall events.	●		
RESILIENT SITE DESIGN	Design the site and site structures to be more resilient to the following highest priority hazards: Drought, extreme heat, hail, high winds, flooding, winter storms.			
HEAT ISLAND	Reduce the heat island effect from project site through high-reflectance roof, vegetative roof, or covered parking.	●		
SITE LIGHTING	Where applicable, comply with Western University's Exterior Lighting Standards and Specification and/or lighting requirements provided in LEED v5 SS credit: Light Pollution Reduction.	●		
BIRD-FRIENDLY GLASS	Comply with CSA A460 – Bird Friendly Building Design for all exterior glass, including spandrel glass.			
ACCESSIBLE OUTDOOR SPACE	Provide barrier-free and physically accessible outdoor space for persons with limited mobility			

● *Mandatory,* ◑ *Mandatory when applicable,* ○ *Optional when applicable,* – *Not applicable*

Guidance:

Implement best practices relating to landscape design and support multiple objectives of conserving potable water, managing stormwater on-site, minimizing the urban heat island effect, and erosion and sedimentation control requirements. For example, projects should explore the use of green roofs to mitigate urban heat island effects but also to manage stormwater onsite.

Additional consideration should be given to how the project's landscaping design and stormwater management approach align with goals and strategies identified in the City of London's The London Plan: Urban Forest Strategy and Western's Utilities and Infrastructure Plan.

Projects are encouraged to consult best practices such as City of Toronto's Green Standard requirements for bird friendly design to minimize and reduce bird strikes (collisions), given the highly vegetative nature of the Western Campus.

Documentation:

PRE/CONCEPT DESIGN	• Submit a narrative describing the sustainable site measures and SDG Checklist as part of the deliverable.
SCHEMATIC DESIGN	• Submit a narrative describing the sustainable site measures and SDG Checklist as part of the SD deliverable.
DESIGN DEVELOPMENT	• Update and submit a narrative describing the sustainable site measures approach and SDG Checklist as part of the DD deliverable.
CONSTRUCTION DOCUMENTS	• Finalize and submit a narrative describing sustainable site measures and SDG Checklist as part of the CD deliverable.
CONSTRUCTION ADMINISTRATION	• Track and retain evidence (documents, cut sheets, invoices, photos, etc.) to prove SDG conformance to FDE.
OCCUPANCY	• Submit a final SDG Checklist confirming the project's performance and final strategies integrated into the building. • For LEED Compliance, submit documentation for the LEED application.

Constructability

Goal: *Projects must be designed and constructed to optimize the building performance while using material resources efficiently and sustainably.*

REQUIREMENTS			MINOR	SITE
CONSTRUCTION AND LANDSCAPE WASTE	Projects must divert a minimum of 75% construction and demolition waste from local landfills.	●	●	●
	Project must divert 100% of landscape waste, by weight, from landfill.	●	●	●
BUILDING DURABILITY	Develop and implement a Building Durability Plan in compliance with the CSA Building Durability Standard S478-95 (R2007).	●		–
TREE PROTECTION	Create and implement a tree planting and protection plan for the project that conforms to City of London Tree Protection By-Law (https://london.ca/sites/default/files/2020-10/Consolidated%20Tree%20Protection%20By-law.pdf) and also to the City of London Tree Planting and Protection Guidelines (https://london.ca/sites/default/files/2025-01/2025_dsrm_ch12_tree_planting_and_protection.pdf)			
SOURCING MATERIALS	Source locally and regionally available materials.	●		○
OPERATIONS WASTE	Provide adequate and convenient storage space for recycling and composting facilities, Recycling materials must include organics/food waste, mixed paper and cardboard, containers (glass, plastics, and metal).	●	●	○

● *Mandatory,* ◑ *Mandatory when applicable,* ○ *Optional when applicable,* – *Not applicable*

Guidance:

When selecting building materials and building systems, consider specifying materials that balance performance objectives of durability, local and regional availability, and healthy and sustainable harvesting.

Explore the feasibility of providing a flexible and adaptable design (e.g., demountable partitions) as a means of future proofing the building.

Ensure recycling stations are integrated throughout the project and are designed to support campus waste diversion goals and recycling programs.

When possible, consider the use of Forest Stewardship Council (FSC) certified wood for wood components in an effort to support sustainable forestry best practices.

At the outset of the construction process, host a contractor workshop to review the project's sustainable design goals, conformance with the Guidelines, and reporting requirements for the construction administration phase. Contractors should be made aware that documentation (i.e., documents, invoices, photos etc.) will need to be retained to prove conformance with the SDG requirements.

Documentation:

PRE/CONCEPT DESIGN	• Submit narrative describing constructability measures and SDG Checklist as part of the deliverable.
SCHEMATIC DESIGN	• Submit narrative describing constructability measures and SDG Checklist as part of the SD deliverable.
DESIGN DEVELOPMENT	• Update and submit narrative describing constructability measures approach and SDG Checklist as part of the DD deliverable.
CONSTRUCTION DOCUMENTS	• Finalize and submit narrative describing constructability measures and SDG Checklist as part of the CD deliverable.
CONSTRUCTION ADMINISTRATION	• Track and retain evidence (documents, invoices, photos, etc.) to prove SDG conformance to FDE.
OCCUPANCY	• Submit a final SDG Checklist confirming the project's performance and final strategies integrated into the building. • For LEED Compliance, submit documentation for the LEED application.

Operations + Maintenance

Goal: *Projects must integrate best operations and maintenance practices to ensure the sustainable design goals are maintained throughout the life of a project.*

REQUIREMENTS			MINOR	SITE
GREEN CLEANING	Conform to Western's Green Cleaning Policy.	●		○
EXTERIOR HARDSCAPE MANAGEMENT	Conform to Western's Grounds Management Plan's requirements exterior hardscape management..	●		
SNOW REMOVAL	Minimize salt usage to ensure durability and cleanability of surfaces.	●		
EQUIPMENT AND CONSUMABLES PROCUREMENT	Conform to Western's Green Procurement Policy requirements for procuring equipment that will be purchased after project completion.			
GREEN EDUCATION	Integrate signage and other features into the building that communicates the sustainability features and performance targets. Consult Western's Facilities Development and Engineering Department on education program requirements.	●	●	○

● *Mandatory,* ◑ *Mandatory when applicable,* ○ *Optional when applicable,* – *Not applicable*

Guidance:

Compliance with each of the above mandatory items will ensure that materials installed or used to clean the project post-occupancy do not jeopardize the intended sustainable performance targets of the project. Integration of an education component will also be a critical part of ensuring the building meets its long-term performance targets.

In instances where a project meets the criteria of the LEED Existing Building Operations and Maintenance rating system, compliance with this system should be explored.

Documentation:

CONSTRUCTION DOCUMENTS	• Submit green education plan and demonstrate how educational components will be integrated into the building design as part of the CD deliverable.
CONSTRUCTION ADMINISTRATION	• Track and retain evidence (documents, invoices, photos, etc.) to prove SDG conformance to FDE.
OCCUPANCY	• Submit a final SDG Checklist confirming the project's performance and final strategies integrated into the building. • For LEED Compliance, submit documentation for the LEED application.

APPENDICES

APPENDIX A. RESOURCES

The following resources, categorized by performance area, are intended to serve as best practices and/or have directly been referenced in the Sustainable Design Guidelines. A consolidated list of Western's policies is provided.

Integrated Design Process

BC Green Building Roundtable. 2007. *Roadmap for the Integrated Design Process:*
www.greenspacencr.org/events/IDProadmap.pdf

Climate Change Adaptation

Natural Resources Canada Climate and Climate-Related Trends and Projections
www.nrcan.gc.ca/environment/resources/publications/impacts-adaptation/reports/assessments/2008/10261

The Rockefeller Foundation: Climate Change
www.rockefellerfoundation.org/our-work/topics/climate-change/

US Department of Energy, Energy Efficiency and Renewable Energy Weather Data
apps1.eere.energy.gov/buildings/energyplus/weatherdata_about.cfm

Metronorm (Database of 8325 meteorological stations worldwide)
meteonorm.com/en/features

Energy Modeling

CaGBC Experienced Modellers List
www.cagbc.org/cagbcdocs/CaGBCs_Experienced_Modellers_List-EN.pdf

Commissioning

ASHRAE Guideline 0 - 2013 – The Commissioning Process
www.ashrae.org

ASHRAE Standard 202 - 2013 – Commissioning Process for Buildings and Systems
www.ashrae.org

Canadian Standards Association Z320 - 11 – Building Commissioning Standard and Check Sheets
www.csagroup.org/

Performance Metering

International Protocol for Measurement and Verification – Core Concepts 2014
www.evo-world.org/

Energy Performance

Canadian Passive House Institute
www.passivehouse.ca/

Environmental Protection Agency ENERGY STAR Target Finder
www.energystar.gov/buildings/service-providers/design/step-step-process/evaluate-target/epa's-target-finder-calculator

National Research Council Canada. Adaptation Guidelines for the National Energy Code of Canada for Buildings 2011
www.nrc-cnrc.gc.ca/eng/publications/codes_centre/necb_2011_adaptation_guidelines.html

Water Performance

Energy Policy Act (Epact) 2005
eere.energy.gov/femp/regulations/epact1995.html

Health and Wellness

ASHRAE 62.1 – 2010 Ventilation for Acceptable Indoor Air Quality
www.ashrae.org

AHSRAE 55 – 2010 Thermal Comfort Conditions for Human Occupancy www.ashrae.org

Center for Active Design: Active Design Guidelines
centerforactivedesign.org

International WELL Building Institute: WELL Building Standard
www.wellcertified.com/

Declare
www.declareproducts.com

Health Product Declaration Collaborative
www.hpd.collaborative.org

Cradle to Cradle Products Innovation Institute
www.c2ccertified.org

International Living Future Institute - Living Building Challenge
www.living-future.org/lbc

Site Considerations

The London Plan: City of London's Urban Forest Strategy and Implementation Plan
thelondonplan.ca/

City of Toronto Green Standard Bird Friendly Design requirements

www1.toronto.ca/city_of_toronto/city_planning/developing_toronto/files/pdf/mr_hr_tech.pdf

Table 1. Caps on Air Leakage Rates

Building Conditioned Floor Area (CFA)	Pressure Test Conditions Across the Building Envelope	Maximum Air Leakage[1]	
		New Construction	Major Renovation
≥ 5,000 ft² (465 m²)	At pressure difference of 50 Pascals (0.2 in H_2O)	0.13 cfm/ft² (0.65 L/s*m²)[1]	0.20 cfm/ft² (1.0 L/s*m²)[1]
	At pressure difference of 75 Pascals (0.3 in H_2O)	0.18 cfm/ft² (0.90 L/s*m²)[1]	0.27 cfm/ft² (1.35 L/s*m²)[1]
< 5,000 ft² (465 m²)	At 50 Pascals (0.2 in in H_2O)	1 ACH	1.5 ACH
	At 75 Pascals (0.3 in H_2O)	1.35 ACH	2 ACH

Table 2. Energy and Greenhouse Gas Operational Performance Criteria

BUILDING TYPE	TEUI (EKWH/M2/YR)	TEDI – HEATING (EKWH/M2/YR)	TEDI – COOLING (EKWH/M2/YR)	GHGI (KG ECO2/M2/YR) [JA1.1][JA1.2]
CLASS/ ACADEMIC / OFFICE	70	30	20	8
LIBRARY	65	20	15	8
WET LAB	350	80	80	30
DRY LAB	170	20	85	10
RESIDENCE	75	22	15	6

APPENDIX B. WESTERN SUSTAINABLE DESIGN GUIDELINES CHECKLIST

WESTERN SUSTAINABLE DESIGN GUIDELINES	Introduction	Western University · Canada

Please use this checklist tool to summarize and document a project's conformance with Western's Sustainable Design Guidelines at the end each design phase. Questions or requests for SDG variances should be directed to Western's Facilities Development and Engineering (FDE) Department.

Please use the comments box to 1) explain any areas of non-compliance with the Guideline or the required deliverables, and 2) highlight any areas of innovation or unexpected results.

Please consult the Western Sustainable Design Guidelines document for greater detail pertaining to specific process and performance requirements.

An electronic version of this Checklist is available from Western's Facilities Development and Engineering (FDE) Department.

Project Name:	Sample Project 1						
Project Manager:	Sample Project Manager						
Project Typology:	**Major Capital Project**						
Design Start:	**1-Jul-15**	**End:**	**1-Dec-15**	**Construction Start:**	**1-Feb-16**	**End:**	**2-Sep-16**
Milestone Report:	**Schematic Design**						
Variance Request							

General Comments:

Signature of Applicant: **Date:**

WESTERN SUSTAINABLE DESIGN GUIDELINES — Process Requirements

Please complete the following checklist to summarize and confirm the project's conformance with Western's Sustainable Design Guideline process requirements.

Project:	Sample Project 1	**Project Typology**	Major Capital Project	**Design Start/End:**	1-Jul-15 to 1-Dec-15
Project Manager:	Sample Project Manager	**Milestone Report:**	Schematic Design	**Construction Start/End:**	1-Feb-16 to 2-Sep-16

THIRD PARTY RATING SYSTEM	**Process Completed**	**Documentation Attached**	**Comments/Description**
Is a third party rating system (i.e., LEED) required and being pursued?			Describe which rating system will be pursued
Is the project registered?	**Yes**		
Has a LEED scorecard been submitted?	**Yes**		

INTEGRATED DESIGN PROCESS Mandatory	**Process Completed**	**Documentation Attached**	**Comments/Description**
Was an integrated design charrette held during Schematic Design? If so, have minutes been distributed?			
Does the Schematic Design deliverable include a narrative summarizing the sustainable design strategies explored during the integrated design workshops?			

CLIMATE CHANGE ADAPTATION Mandatory	**Process Completed**	**Documentation Attached**	**Comments/Description**
Has the project examined relevant climate and weather data as part of Schematic Design Process?			
Has the project assessed key vulnerabilities of the site and considered strategies to make the project more resileint to climate change or unforeseen events?			

ENERGY MODELING Mandatory	**Process Completed**	**Documentation Attached**	**Comments/Description**
Was an energy model developed in Schematic Design? Was a summary of energy conservation measures and savings included in the SD deliverable package?			
Was energy model updated in Design Development? Was a summary of energy conservation measures and savings included in the SD deliverable package?			
Was a final compliance model completed and summary report delivered documenting energy and greenhouse gas emission results?			

COMMISSIONING Mandatory	**Process Completed**	**Documentation Attached**	**Comments/Description**
Was a Commissioning Authority hired?			
Did the Commissioning Authority conduct a review of the drawings and specifications prior to 50% Construction Documents?			
Did the Commissioning Authority complete final commissioning review and submit commissioning report to FDE?			
Did the Commissioning Authority create a training manual for operations and maintenance staff?			

PERFORMANCE METERING Mandatory	**Process Completed**	**Documentation Attached**	**Comments/Description**
Has a Measurement and Verification (M&V) plan been developed in collaboration with Facilities Development and Engineering Department. ?			
If a building management system exists, are meters tied into the building management system?			

Date:

General Comments:

WESTERN SUSTAINABLE DESIGN GUIDELINES

Performance Requirements

Western University · Canada

Please use this checklist tool to summarize and document a project's conformance with Western's Sustainable Design Guidelines at the end each design phase. Questions or requests for SDG variances should be directed to Western's Facilities Development and Engineering (FDE) Department. Please use the comments box to 1) explain any areas of non-compliance with the Guideline or the required deliverables, and 2) highlight any areas of innovation or unexpected results. Please consult the Western Sustainable Design Guidelines document for greater detail pertaining to specific process and performance requirements.

Project:	Sample Project 1	**Project Typology**	Major Capital Project	**Design Start/End:**	1-Jul-15 to 1-Dec-15
Project Manager:	Sample Project Manager	**Milestone Report:**	Schematic Design	**Construction Start/End:**	1-Feb-16 to 2-Sep-16

ENERGY + GREENHOUSE GAS EMISSIONS		**Demonstrated Mininum Performance**	**Documentation attached**	**Provided documentation / Comments**
Indicate the energy reduction below ASHRAE 90.1-2010	Mandatory			
New construction: Minimum 15% below ASHRAE 90.1-2010 Major renovation: Minimum 10% below ASHRAE 90.1-2010	Performance % below ASHRAE:	**30%**		
Indicate the lighting power density reduction below ASHRAE 90.1 – 2010	Mandatory			
Major: 30% below ASHRAE / Minor projects: 5% below ASHRAE Using the space by space methodology or by applying the whole building lighting power	Performance % below ASHRAE:	**10%**		
Does the project connect to the Campus District Energy System? If Yes, please continue below	Mandatory			
Has FDE department been consulted?				
Has the energy performance of the centralized system been accounted for in energy model				
Meet the requirements of LEED v4 EA: Advanced Energy Metering [1 point]	Mandatory			
Meet the requirements of LEED v4 EA Prerequisite: Fundamental Commissioning and Verification	Mandatory			
Have ENERGY STAR Appliances been installed for all new eligible products.	Mandatory			

WATER USE		**Demonstrated Mininum Performance**	**Documentation attached**	**Provided documentation / Comments**
Demonstrate a minimum of 30% indoor potable water use reduction?	Mandatory			
• *Meet LEED v4 WE: Indoor Potable Water Use Reduction for 2 points* • *Baseline fixture rates to follow LEED v4 WE: Indoor Water Use Reduction Credit* • *Ensure no fixtures exceed Western Water Use Requirements for maximum flow rate*	Baseline Annual Water use (m^3 per year) :	**456.0**	**Percent Reduction: 78.07%**	
	Design Annual Water use (m^3 per year) :	**100.0**		
Energy Star Appliances for all eligible products	Mandatory			
Meet the requirements of LEED v4 WE Prerequisite: Building-Level Water Metering	Mandatory			

HEALTH + WELLNESS		**Demonstrated Mininum Performance**	**Documentation attached**	**Provided documentation / Comments**
Does the project comply with the requirements of LEED v4 IEQ Prerequisite: Environmental Tobacco Smoke Control.	Mandatory			
Does the project comply with ASHRAE 62.1 – 2010 sections 4-7.	Mandatory			
Does the project meet the comfort criteria described in ASHRAE 55 – 2010.	Mandatory			
Where possible, install operable windows for regularly occupied perimeter spaces.	Mandatory			
For projects with office program requirements, provide for individual control of systems to address thermal comfort needs of building occupants.	Mandatory			
Meet the requirements of LEED v4 IEQ: Low Emitting Materials for the following categories at a minimum: Interior paints and coatings; Interior adhesives and sealants; Flooring; Composite wood; and Ceilings, walls, thermal and acoustic insulation	Mandatory			
Meet the requirements of LEED v4 IEQ: Construction Indoor Air Quality Management Plan [1 point]	Mandatory			
Meet the requirements of LEED v4 IEQ: Indoor Air Quality Assessment, Option 1 [1 point]	Mandatory			

SITE CONSIDERATIONS		**Demonstrated Mininum Performance**	**Documentation attached**	**Provided documentation / Comments**
Does the project conform to Western's Grounds Management Plan's requirements for 100% compliance with Erosion and Sedimentation Control procedures.	Mandatory			
Does the project conform to Western's Grounds Management Plan's requirements for use of native and adaptive species for 100% of new project landscaping.	Mandatory			
Provide bicycle parking and shower facilities as per the LEED v4 LT: Bicycle Facilities requirements, or demonstrate that facilities exist within 163m of the building.	Recommended			
Bicycle storage capacity may not be double counted. Storage that is fully allocated to occupants of non-project facilities, cannot also serve project occupants.	Required spaces:	**50**		
	Provided spaces:	**70**		
Do not install a permanent landscape irrigation system as per requirements for LEED v4 WE: Outdoor Water Use Reduction.	Mandatory			
Comply with LEED v4 SS: Rainwater Management [2 points]	Mandatory			
Meet the requirements of LEED v4 SS: Heat Island Reduction. [1 point]	Mandatory			
Where applicable, comply with Western University's Exterior Lighting Standards and Specification and/or lighting requirements provided in LEED v4 SS: Light Polution Reduction	Mandatory			

CONSTRUCTABILITY		**Demonstrated Mininum Performance**	**Documentation attached**	**Provided documentation / Comments**
Projects must divert a minimum of 75% construction and demolition waste from local landfills.	Mandatory			
	CWM Diversion rate (%):	**83%**		
Project must divert 100% of landscape waste, by weight, from landfill as per Western's Grounds Management Plan.	Mandatory			
Develop and implement a Building Durability Plan in compliance with the CSA Building Durability Standard S478-95 (R2007).	Mandatory			
Source locally and regionally available materials.	Mandatory			
Provide adequate and convenient storage space for recycling and composting facilities	Mandatory			

OPERATIONS + MAINTENANCE		**Demonstrated Mininum Performance**	**Documentation attached**	**Provided documentation / Comments**
Conform to Western's Green Cleaning Policy.	Mandatory			
Conform to Western's Grounds Management Plan's requirements exterior hardscape management.	Mandatory			
Conform to Western's Grounds Management Plan's requirements for landscape waste management.	Mandatory			
Conform to Western's Green Procurement Policy requirements for procuring equipment that will be purchased after project completion.	Mandatory when applicable			
Integrate signage into the building that communicates the sustainability features and performance targets. Consult Western's Facilities Development and Engineering Department on education program requirements.	Mandatory			

Date:

General Comments:



Western
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Facilities Development & Engineering
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