

# E N E R M O D A L E N G I N E E R I N G L I M I T E D

650 RIVERBEND DRIVE  
KITCHENER, ONTARIO, CANADA N2K3S2  
TEL: 519-743-8777 FAX: 519-743-8778  
www.enermodal.com • office@enermodal.com



SUSTAINABLE MECH/ELEC DESIGN  
LEED FACILITATION & CERTIFICATION  
ENERGY MODELING & AUDITS  
NFRC/CSA WINDOW ENERGY RATING

## **Sustainable Design Brief for Silvercreek Junction**

The sustainable design strategy for Silvercreek Junction has been developed using the LEED® Green Building Rating System.

### **LEED Green Building Rating System**

The LEED (Leadership in Energy and Environmental Design) green building rating system was originally developed by the U.S. Green Building Council (USGBC) to provide a recognized standard by which to assess the environmental sustainability of building designs. The Canadian Green Building Council (CaGBC) has since adapted this system to better reflect the specific concerns and requirements of buildings in a Canadian context.

LEED is a point-based rating system; points are earned for building attributes considered environmentally beneficial. Points are categorized into groups:

- Sustainable Sites
- Water Efficiency
- Energy and Atmosphere
- Materials and Resources
- Indoor Environmental Quality
- Innovation and Design Process

The final category includes up to 5 “bonus” points for greatly exceeding a LEED point threshold or for dealing with a sustainable issue not directly addressed by LEED.

LEED differs from other rating systems in that it quantifies “green” by outlining credit thresholds. For example, 5% of the building materials must be from salvaged materials to earn a point for the salvaged materials credit.

LEED Ratings (Certified, Silver, Gold, and Platinum) are awarded based on the number of points achieved by the design and construction of the building. Point thresholds are as follows:

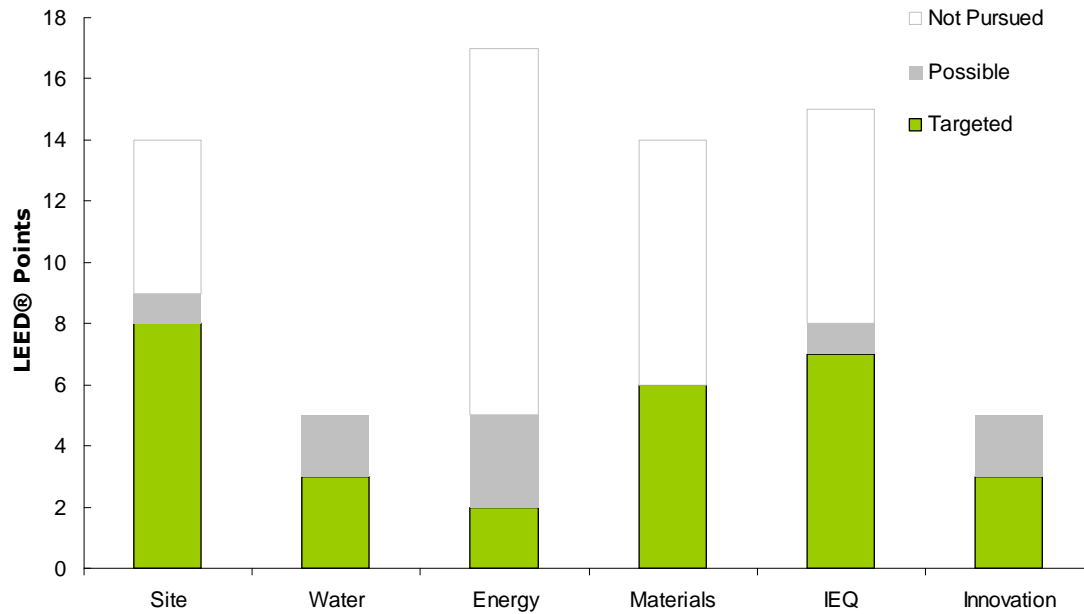
- Certified – 26-32 points
- Silver – 33-38 points
- Gold – 39-51 points
- Platinum – 52+ points

LEED is a recognized environmental standard which provides third party verification of a building’s “greenness”. For commercial retail developments, LEED buildings provide a healthier place to work and shop, combined with operating costs savings and a smaller ecological footprint.

## Sustainable Design Brief for Silvercreek Junction

### Sustainable Approach

The preliminary sustainable approach for Silvercreek Junction includes a targeted LEED level of CERTIFIED. The following outlines the point distribution:



Point Count:

Targeted: 29  
Pending: 1  
Decision Required: 8  
Not Pursued: 32

*Targeted LEED Level: Certified*

Targeted points are those points that meet the economic and sustainable goals for the project. Pending points require further analysis, but do not rely on the project development, per se, rather clarification regarding some other aspect of the site (e.g. adequate bus service available). Decision Required points include those items that still require detailed discussion and were considered worthy of retention until later into design. Points considered Not Pursued include those items that are either not applicable to this project (eg. reuse an existing building) or are not financially feasible at this time (e.g. on-site power generation)

LEED also incorporates a number of "mandatory" points that must be included in the design or construction to achieve any level of LEED. Erosion control during construction and designing buildings to be 25% better than the current energy code, are two of these items. The credits highlighted orange on the attached spreadsheet are those points that are mandatory (aside: points coloured blue are those points that are available to all buildings in the development based on the overall site masterplan)

The points selected for the strategy are listed in the attached LEED scorecard. Key ideas are included below to add insight into the approach that will be taken to achieve these strategies.

## ***Sustainable Design Brief for Silvercreek Junction***

### ***Sustainable Sites***

Quite a few of the points targeted under this credit category were available to the project based on the actual site selected. Key credits to this strategy based on design are as follows:

- SSc3 Contaminated Site – the project is a remediation and redevelopment of a brownfield site
- SSc4.4 Limit Parking Capacity – parking capacity will be limited to the zone minimum and provision will be made for carpool spaces serving 10% of the site employees
- SSc6.1 & 6.2 Stormwater Management – for the 2 yr, 24hr storm, peak flow and total runoff quantity will be controlled to pre-development conditions. Additionally, TSS and TP removal from the site are targeted to be 80% and 40%, respectively
- SSc7.2 Heat Island (Roof) – roofing products providing an SRI >78 will be used to help reduce tenant cooling costs and minimize the impact of the urban heat island on the microclimate.
- SSc8 Light Pollution Reduction- All site lighting will meet full cut-off requirements, no light trespass will occur beyond the site boundary, site lighting power densities (W/m<sup>2</sup>) will be below 80% of ASHRAE 90.1-2004 allowable levels for parking and below 50% for landscape and façade lighting. Interior lighting will be required to be installed to ensure the maximum candela from lights located at building the perimeter falls within the building.

### ***Water Efficiency***

Three points have been targeted under water efficiency. These include:

- WEc1.1 Landscape Irrigation – a 50% reduction in landscape irrigation will be achieved by selecting plants that require little, if any, irrigation. Additionally, the irrigation system will include a sensor system tied to Environment Canada weather stations that will ensure irrigation is only activated when absolutely necessary.
- WEc3.1 & 3.2 (2 points) Indoor Water Reduction – indoor water savings will be achieved by mandating tenants to use ultra low-flow water fixtures including:
  - Dual flush (6/4.2 lpf) or low flow (4.8 lpf) toilets
  - 1.9 lpf urinals (where applicable)
  - 1.9 lpm lavatory faucets
  - 7.6 lpm non-commercial kitchen sinks
  - 5.7 lpm showers (where applicable)

### ***Energy & Atmosphere***

The LEED energy prerequisite is to better the predicted performance of the MNECB reference building by at least 25%. LEED compares the predicted energy consumption costs of the proposed design with that of a reference building - one that is of the same dimensions of the proposed design but with envelope and services specifications set to meet the MNECB standard.

Generally speaking, most retail developments do not meet the minimum energy requirements needed to achieve a LEED rating without some measure of equipment or system upgrade. This is a function of two key items: First, the tenant design requirements; second, the construction budget.

In most cases the requirements of the building design and systems (e.g. HVAC, walls, and windows) are dictated by the building tenants via their prototypical designs. Many of these designs are dated (i.e., they do not meet new building code requirements; particularly energy efficiency items) and are designed to work in all Canadian climates and are therefore oversized in most of the country).

## ***Sustainable Design Brief for Silvercreek Junction***

Tenant issues can often be dealt with in a positive manner, provided adequate communication between the tenant, base building designers and energy consultant is undertaken early on in the base building design.

The other complication to energy efficiency in retail is the typical construction budget, often below \$100/sf, which is often insufficient to allow for the necessary upgrades to achieve the requisite energy savings. That said there are a number of basic upgrades that have proven effective in achieving the LEED energy pre-requisite for minimal capital cost increase. These are outlined in the following table.

In order to calculate LEED points, the modeled buildings are compared back to a "reference" building, developed by the simulation software, which meets the Model National Energy Code for Buildings (MNECB, 1997). The LEED pre-requisite for energy savings is 25% better efficiency than the "code" building. It should be noted that this will also be a requirement of the OBC in 2011. Note: a typical retail building, the reference building energy density approximately 729 ekWh/m<sup>2</sup>.

Lighting	Designed to ASHRAE 90.1-2004 Lighting Power Density (~16W/m <sup>2</sup> )
Walls	R20 - Equivalent to 4" of rigid polystyrene insulation.
Roof	R24 - 4" Polyisocyanurate insulation
Windows	Double Glazed, Argon Gas Fill, Soft Low-E Coating (e=0.05 e.g. Solarban60), 9mm Thermal Break as a minimum, Non-conducting/Warm Edge Spacers (e.g. "Superspacer"). U=1.94W/m <sup>2</sup> K; SHGC=0.34
HVAC	Increase ductwork sizes to provide air at 400 feet per minute.  Consider splitting large RTUs into smaller systems (multiple thermal zones rather than one per space)  Include units with variable speed options, when available.
HVAC	Size equipment to meet heating/cooling load. Target 300+ square feet per Ton of cooling capacity as an ideal. Select efficient units (Cooling EER>11, Heating: modulating burners >80%).
Economizer	Add motorized damper to all RTUs serving the retail and staff space and tie into CO <sub>2</sub> sensors in the return ducts to provide additional fresh air, when required and free cooling, when available.
Heat Recovery	Recover waste heat from exhaust air to pre-heat ventilation air with an Energy Recovery Ventilator (ERV) "Enthalpy Wheel". Exhaust fans are replaced by this unit. Stand-alone units ducted to RTU returns are preferred to bolt-on types for functional reasons. ERV heat recovery effectiveness is approx. 70%.
Heat Recovery (cold cases)	Use refrigeration (cold cases) heat rejection to preheat air for retail space, when available.
Cooling & Refrigeration	Specify all HVAC&R refrigerants to be R410A or equivalent HCFC

## ***Sustainable Design Brief for Silvercreek Junction***

HVAC Sizing	With the addition of upgrades to building envelope and mechanical equipment, some downsizing will likely be available. Project engineers are encouraged to re-visit calculations to provide for capital savings in downsized equipment.
Lavatory Faucets	Specify all faucets to be equipped with 1.9 Lpm vandal resistant aerators.
Kitchen Faucets	Specify all faucets to be equipped with 5.7 Lpm vandal resistant aerators.
Hot Water	Specify condensing or on-demand (tankless) water heaters for domestic hot water, where feasible.

In addition to these measures, a commissioning agent will be contracted to verify that the building systems are installed and operating as designed and intended.

### ***Materials & Resources***

The material impacts of the development have been minimized through the selection of the following strategies:

- MRp1 Collection & Storage of Recyclables – A number of easily accessible areas that serve the entire development and are dedicated to the separation, collection and storage of materials for recycling, including (at a minimum); paper, corrugated cardboard, glass plastics and metals, will be provided.
- MRc2 Construction Waste – Building contractors will be encouraged to divert construction waste from landfill. Source separation and tracing will be coordinated by the general contractor. Tenant contractors will be required to comply with waste management protocols as well.
- MRc4 & MRc5 Recycled & Regional Materials – Special care will be taken to select materials that are high in post-consumer recycled content and are extracted and manufactured within 800km. Key items targeted to achieve these points include concrete (high in slag or fly-ash content), structural steel, rebar, asphalt, and drywall.

### ***Indoor Environmental Quality***

Recognizing that the indoor environment has the greatest impact on the workers and shoppers at Silvercreek Junction, IEQ points have been selected to ensure a healthy shopping experience. Strategies included in this category pertain to both material selections that limit toxic off-gassing and construction control to reduce the contamination potential prior to occupancy.

- EQp1 Minimum IAQ Performance – the buildings will be designed to meet the ventilation requirements as required by ASHRAE 62-2004 (as is required by OBC2006).
- EQc1 Carbon Dioxide Monitoring – as both an energy saving strategy and an IAQ control mechanism, ventilation provided to the space will be controlled by CO<sub>2</sub> sensors. The ventilation levels for operating hours will modulate between the minimum allowable levels (or the “space load” amount as noted in 62-2004) and the maximum amount (space + people amount noted in 62-2004).
- EQc3.1 IAQ During Construction – an IAQ plan will be included in the specifications to ensure construction activities do not negatively impact the long term IAQ performance of the space. This strategy includes limitations on schedule overlap, material storage procedures, contaminate control and cleanliness requirements for the site during construction. Both base building and tenant fit-up contractors will be required to comply with these strategies.

## ***Sustainable Design Brief for Silvercreek Junction***

- EQc3.2 Tenant Design Guidelines – a point is available for leased tenant spaces if a tenant design guideline is prepared and made available to assist tenants in fitting out their space in “accordance with LEED principles”. A manual and design/construction support will be provided to the tenants to achieve this point.
- EQc4.1-4.3 Low Emitting Products – paints, coatings, adhesives and sealants will be selected and used only if they meet LEED requirement for Volatile Organic Compound (VOC) content. Additionally, any carpet installed in the space will have to comply withCRI Green Label or Green Label Plus ratings as provided by the Carpet and Rug Institute. Base building and tenant teams will be required to comply.
- EQc7.1 & 7.2 Thermal Comfort – spaces will be designed to operate within comfort bounds (for temperature and humidity) as noted in ASHRAE 55-2004. These items will be monitored and instructions for adjustment will be provided for those times when the building is operating outside of comfort ranges (which should be rarely)

### ***Innovation & Design***

There are up to five points available in this category. The first four points are achieved by either providing a strategy that is above and beyond the LEED rating system, or by greatly exceeding a threshold set-out by LEED. The innovation points selected for this project are:

- Water Efficiency >40% which can be achieved through proper selection of water fixtures in the buildings
- Recycled Content >22.5% is linked to credit MRc4
- Green Site Maintenance pertains to the development of policies to minimize the impact of site activities on the environment.

### **Provision for Tenants**

In dealing with speculative building projects, the tenants must be able and willing to complete their spaces without jeopardizing the LEED strategy set out by the base building designers. The LEED Canada system has agreed, in principle, to the implementation of guidelines for leased tenant spaces to show compliance with LEED for new construction. In order to achieve a LEED-NC (new construction) rating on a speculative space, the following are intended to be implemented:

- Signed tenant lease agreements explicitly stating LEED requirements that are to be achieved (required for an NC rating)
- Tenant design guidelines per EQc3.2 (optional point)
- Tenant design support and construction verification (optional for piece of mind)

Outside of a LEED-NC rating, a LEED-CS “Core and Shell” rating may also be available in Canada, in the future, which would include the certification for only the base building aspects of the development (with special note that the energy efficiency items are still required in the tenant space in order to achieve the energy pre-requisite, EAp2)

### **Conclusion**

It is the intent of the developer and design team that the Sustainable Strategy be refined and implemented as the project develops to ensure the long term impact of Silvercreek Junction on the environment is minimized.

Targeted	Pending	Decision Req'd	Not Pursued	<b>LEED® Scorecard for Silvercreek Junction</b>			
29	1	8	32	<b>Certified:</b> 26 to 32 points	<b>Silver:</b> 33 to 38 points	<b>Gold:</b> 39 to 51 points	<b>Platinum:</b> 52 or more points

8	1	0	5	<b>Sustainable Sites</b>			
				<b>SSp1 Erosion &amp; Sedimentation Control:</b> Design and implement an erosion & sedimentation control (ESC) plan that conforms to EPA Document EPA 832/R-92-005, Storm Water Management for Construction Activities (Chapter 3), or local standards, whichever is more stringent.			
1				<b>SSc1 Site Selection:</b> Site must not be: part of a Provincial Land Reserve, public parkland, habitat for rare or endangered species, ecologically sensitive land, land less than 1.5 m (5 ft) above 100 yr. floodplain, or less than 0.9 m (3 ft) above 200 yr. floodplain, or within 30.5 m (100 ft) of any wetland.			
			1	<b>SSc2 Development Density:</b> Site must have a development density of greater than 13,800 m <sup>2</sup> /hectare (60,000 ft <sup>2</sup> /acre) AND be located in an area with the same density OR be within 800 meters or a residential zone with 25 units/hectare and a minimum of 6 amenities with pedestrian access.1211			
1				<b>SSc3 Redevelopment of Contaminated Sites:</b> Demonstrate that the site is considered contaminated (compared to mandated levels) by a regulatory agency and must show that appropriate measures are used to clean up the contamination as required by the Provincial Contaminated Sites Program.			
	1			<b>SSc4.1 Public Transportation Access:</b> Buildings must be located within 400 m (1/4 mile) of 2 or more public bus lines or within 800 m (1/2 mile) of a commuter rail, light rail or subway station having frequent service.			
			1	<b>SSc4.2 Bicycle Storage &amp; Changing Rooms:</b> Provide secure bicycle storage, with convenient changing/shower facilities (within 183 metres or 200 yards of the building) for 5% ( 41 bicycle stalls and 2 showers ) of building occupants OR requirements of local authority, whichever are more stringent.			
			1	<b>SSc4.3 Hybrid or Alternative Fuel Vehicles:</b> Provide low consumption high efficiency hybrid or alternative fuel vehicles and preferred parking for 3% ( 9 people ) of building occupants (carshare programs are acceptable at a ratio of 1 car for every 20 users)			
1				<b>SSc4.4 Limit Parking Capacity:</b> Provide preferred parking designated for use exclusively by carpools/car co-ops equal to 10% ( 28 spaces) of total non-visitor parking spaces. Size parking capacity not to exceed minimum local zoning requirements (2027 spaces), OR add no new parking capacity for rehabilitation projects			
			1	<b>SSc5.1 Protect or Restore Open Space:</b> On a previously developed site, restore a minimum of 50% ( 61240 m <sup>2</sup> ) of the site area (excluding the building footprint) with native/adaptive vegetation OR if pursuing SSc2 restore a minimum of 20% (32600 m <sup>2</sup> ) of the site area (including the building footprint) taking into account 'green' (vegetated) roof surfaces.			
1				<b>SSc5.2 Reduce Development Footprint:</b> Designate open space adjacent to the building equal to building footprint ( 4075 m <sup>2</sup> ) if there are no zoning requirements.			
1				<b>SSc6.1 SWM, Rate &amp; Quantity:</b> The site pre-development imperviousness is less than 50%. Design for no increase in rate and quantity of stormwater runoff from pre-development to post-development conditions.			
1				<b>SSc6.2 SWM, Treatment:</b> Remove 80% of annual post-development total suspended solids and 40% of annual post-development total phosphorous from stormwater based on average annual loadings from all storms less than or equal to the 2 year/24 hour storm.			
			1	<b>SSc7.1 Heat Island Effect, Non-Roof:</b> Provide shade (within 5 years) and/or use highly reflective material (SRI at least 29) and/or use open grid pavement for at least 50% of non-roof surfaces OR put 50% of the parking spaces underground or covered by structured parking (i.e. minimum 2 levels) or covered by a building.			
1				<b>SSc7.2 Heat Island Effect, Roof:</b> Use roofing material having a high Solar Reflectance Index (SRI) equal to or greater then 78 for a low-sloped roof or 29 for a steep-sloped for a minimum of 75% of roof area OR install a vegetated roof for a minimum of 50% of roof area. Combinations of these two measures can also be applied.			
1				<b>SSc8 Light Pollution Reduction:</b> Design outdoor lighting only for safety and comfort while not exceeding 80% of the lighting power densities for exterior areas and 50% for building facades and landscape features as defined in ASHRAE/IESNA Standard 90.1-2004 while following zone requirements. Interior lighting shall fall within the property and building OR automatically turned off during non-business hours.			

3	0	2	0	<b>Water Efficiency</b>			
1		1		<b>WEc1 Landscape Irrigation:</b> Reduce potable water consumption for irrigation by 50% (1 point) or 100% (2 points) relative to baseline by using only captured rain or recycled site water OR design the landscape so that a permanent irrigation system is not required.			
		1		<b>WEc2 Wastewater:</b> Reduce usage of potable water for sewage conveyance by 50% OR treat 100% of wastewater to tertiary standards on-site.			
2				<b>WEc3 Indoor Water Use Reduction:</b> Reduce potable water use by 20% (1 point) or 30% (2 points) relative to the baseline calculated for the building (not including irrigation) by meeting specified fixture flow requirements.			

2	0	3	12	Energy & Atmosphere
▪				<b>EAp1 Fundamental Commissioning:</b> Engage a commissioning authority (not an individual on the design or construction team) to design, implement and document a commissioning plan. Complete a commissioning report.
▪				<b>EAp2 Minimum Energy Performance:</b> Reduce the design energy consumption to meet CBIP requirements (25% reduction of energy use compared with designed) OR reduce designed energy cost by 18% relative to ASHRAE/IESNA 90.1-1999 (without amendments) reference building.
▪				<b>EAp3 Elimination of CFCs &amp; Halons:</b> Use no CFC-based refrigerants in HVAC&R equipment and no halons in fire suppression equipment.
1		2	7	<b>EAc1 Optimize Energy Performance:</b> Reduce design energy cost (excluding non-regulated loads) vs. MNECB OR ASHRAE/IESNA 90.1-1999, by 24-64% and 15-60% respectively (worth up to 10 points depending on performance achieved - see LEED® - Canada Table 1-New Buildings).
			3	<b>EAc2 Renewable Electricity:</b> Supply 5% (1 point), 10% (2 points) or 20% (3 points) of total annual energy use, by cost (regulated loads only), from on-site renewable energy sources.
			1	<b>EAc3 Best Practice Commissioning:</b> Engage an independent commissioning authority (from a third party firm) to design, implement and document a commissioning plan and provide peer review of design and construction documents with additional tasks as specified.
1				<b>EAc4 Elimination of HCFCs:</b> Install base building level HVAC&R equipment that do not contain HCFCs.
			1	<b>EAc5 Measurement &amp; Verification:</b> Develop a long-term continuous performance measurement and verification plan, for loads and efficiencies of basic building systems, that follows IPMVP requirements (see Reference Manual).
		1		<b>EAc6 Green Power:</b> Engage in a minimum two year contract to purchase electricity certified (Ecologo or Green-e) by a green power producer for a minimum of 50% of the electricity consumed by the building (regulated loads only).

6	0	0	8	Materials & Resources
▪				<b>MRp1 Collection &amp; Storage of Recyclables:</b> Provide an easily accessible area that serves the entire building and is dedicated to the separation, collection and storage of materials for recycling, including (at a minimum); paper, corrugated cardboard, glass plastics and metals.
			3	<b>MRc1 Reuse Existing Building:</b> Maintain 75% of existing building structure and shell (floors, walls and framing, excluding windows, non-structural roofing materials) (1 point) or 95% (2 points), or shell plus 50% of non-shell areas (3 points) with or without 75% and 95% existing building structure.
2				<b>MRc2 Construction Waste Diversion:</b> Develop and implement a waste management plan. Divert a minimum of 50% (1 point) or 75% (2 points) of construction, demolition and land-clearing waste from the landfill by recycling/salvaging materials (by weight or volume).
			2	<b>MRc3 Salvaged Materials:</b> Specify 5% ( \$720,000 = 1 point ) or 10% ( \$1,440,000 = 2 points) of building materials used (by cost) are salvaged or refurbished.
2				<b>MRc4 Recycled Content Materials:</b> Specify 7.5% ( \$1,080,000 = 1 point) or 15% ( \$2,160,000 = 2 points) of building materials by cost to be recycled content (full cost for post-consumer, half cost for pre-consumer).
2				<b>MRc5 Regional Materials:</b> Specify that 10% ( \$1,440,000 = 1 point) or 20% ( \$2,880,000 = 2 points) of building materials and products, by cost, (for which at least 80% of each) be extracted and manufactured within 800 km of the project site. If materials are shipped by rail or water, the allowable radius is 2400 km. Combinations of the above are also permitted.
			1	<b>MRc6 Rapidly Renewable Materials:</b> Specify 5% ( \$720,000 = 1 point) of the building materials by cost are rapidly renewable (i.e. materials that renew fully within 10 years).
			1	<b>MRc7 Certified Wood:</b> Specify that 50% of total wood-based materials, by cost, be FSC certified (both harvesters and manufacturers excluding temporary construction applications of wood).
			1	<b>MRc8 Durable Building:</b> Engage a Building Science Professional to develop and implement a Building Durability Plan in accordance with the principles in CSA S478-95 (R2001) - Guideline on Durability in Buildings.



7	0	1	7	Indoor Environmental Quality
				<b>EQp1 Minimum IAQ Performance:</b> Comply with ASHRAE 62-2004 "Ventilation for Acceptable Indoor Air Quality", and addenda approved at the time the building was permitted. This is a mandatory requirement of the Ontario Building Code.
				<b>EQp2 Tobacco Smoke Control:</b> Prohibit smoking in the building OR establish negative pressure (minimum 5Pa) in rooms with smoking (as specified) AND in both cases designate outside smoking areas to be at least 7.5m away from entrance areas and air intakes.
1				<b>EQc1 Carbon Dioxide Monitoring:</b> Install permanent carbon dioxide monitoring sensors and ventilation controls to limit CO2 levels in accordance with ASHRAE 62-2004, Appendix C.
			1	<b>EQc2 Increase Ventilation Effectiveness:</b> Design for a minimum mechanical ventilation air change effectiveness of 0.9 according to ASHRAE 129-1997. If naturally ventilated, demonstrate a distribution and laminar flow pattern for at least 90% of room/zone area and for at least 95% of occupied hours.
1				<b>EQc3.1 Construction IAQ, During Construction:</b> Design and implement an IAQ Management plan to SMACNA standards. Protect building materials and ductwork from contamination, use MERV 8 filtration media per ASHRAE 52.2-1999 and make provisions for inspection and correction of deficiencies that could adversely affect IAQ.
		1		<b>EQc3.2 Tenant Design Guidelines</b> Develop a manual that will assist tenants in finishing their spaces in accordance with LEED protocols. Provide design review and construction support as needed to ensure compliance.
1				<b>EQc4.1 Low-Emitting Adhesives &amp; Sealants:</b> Select adhesives, sealants and sealant primers that have VOC contents below specified limits (SCAQMD rule #1168) applied within the weatherproofing system.
1				<b>EQc4.2 Low-Emitting Paints &amp; Coatings:</b> Select paints and coatings that have VOC contents below the specified limits of Green Seal Standard GS-11 AND select anti-corrosive coatings with VOC contents below Green Seal GS-03, AND if not covered by the above, select paints and coatings that satisfy SCAQMD Rule #1113. Applies to products applied on-site and within the weatherproofing system.
1				<b>EQc4.3 Low-Emitting Carpets:</b> Carpets must meet the Carpet and Rug Institute's Green Label requirements.
			1	<b>EQc4.4 Low-Emitting Composite Wood and Agrifibre:</b> Composite wood and agrifiber products and laminate adhesive assemblies must contain no added urea-formaldehyde resins.
			1	<b>EQc5 Indoor Chemical &amp; Pollutant Source Control:</b> Design to minimize chemical pollution cross-contamination of regularly occupied areas including housekeeping areas.
			1	<b>EQc6.1 Controllability of Systems, Perimeter:</b> Provide a minimum average of one operable window and one lighting control zone per 18.5 m <sup>2</sup> (200 ft <sup>2</sup> ) for all regularly occupied spaces within 4.5 m (15 ft) of the perimeter wall.
			1	<b>EQc6.2 Controllability of Systems, Non-Perimeter:</b> Provide at least one control for airflow and lighting for each regularly occupied non-perimeter area.
1				<b>EQc7.1 Thermal Comfort, ASHRAE 55:</b> Comply with ASHRAE Standard 55-2004, Thermal Comfort Conditions for Human Occupancy.
1				<b>EQc7.2 Thermal Comfort, Permanent Monitoring:</b> Provide permanent temperature and humidity monitoring with operator control for thermal comfort.
			1	<b>EQc8.1 Daylight 75% of Spaces:</b> Provide a minimum daylight factor of 2% (excluding all direct sunlight penetration), or at least 250 Lux (25 footcandles), in 75% of regularly occupied spaces (for critical visual tasks).
			1	<b>EQc8.2 Views for 90% of Spaces:</b> Provide a direct line of sight to vision glazing from 90% of regularly occupied areas via, have a window-to-floor area ratio of at least 0.07.

3	0	2	0	Innovation & Design Process
1				<b>IDc1 Water Efficiency Exceptional Performance:</b> Reduce usage of potable water for sewage conveyance by 100%, OR reduce potable water use by 40% relative to the baseline calculated for the building (not including irrigation).
1				<b>IDc1 Recycled Materials Exceptional Performance:</b> Specify 22.5% of building materials by cost to be recycled content (full cost for post-consumer, half cost for post-industrial).
1				<b>IDc1 Green Site Maintenance:</b> Implement a site maintenance program that limits the impact on the environment. Program should include seasonal cleaning/maintenance, waste handling, landscaping and snow removal.
		1		<b>IDc1 Additional Innovation Credit:</b> TBD
		1		<b>IDc2 LEED® Accredited Professional:</b> At least one principal participant on the project team must be a LEED® Accredited Professional.

\* This scorecard is intended to serve as a benchmarking tool to assess potential LEED Canada NC v1.0 performance. It does not confirm a LEED rating nor guarantee credit compliance. This document is the sole property of Enermodal and is only to be used for the project listed above. This document is not to be used in any other capacity without the expressed consent of Enermodal Engineering.