

City of Mississauga Green Development Standard

Mandatory Performance Metrics

LOW-RISE RESIDENTIAL DEVELOPMENT

METRIC	TIER 1 MANDATORY REQUIREMENTS	SUBMISSION REQUIREMENTS FOR SITE PLAN APPROVAL
Theme 1: Energy and Building Performance		
EB1: ENERGY PERFORMANCE	Design, construct and label the building(s) to achieve at least ENERGY STAR® for New Homes, version 17.1 or R-2000 requirements	<ul style="list-style-type: none"> ENERGY STAR® Certification Report Ontario Building Code's Energy Efficiency Design Summary: Performance and Other Acceptable Compliance Methods form Builder Option Package form for ENERGY STAR® v. 17.1 or R-2000
Theme 2: Climate Impacts		
C11: EMBODIED CARBON	Conduct an Upfront Embodied Emissions Assessment to measure A1-A3 life cycle stage emissions for all structural, enclosure and major finishes	<ul style="list-style-type: none"> Upfront Embodied Emissions Assessment report using BEAM or MCE2 model and the results from the "review tab"
Theme 3: Resilience		
R1: EMISSIONS FREE ENERGY AND STORAGE	Provide a minimum of 5% of building's annual energy consumption from one or a combination of acceptable renewable energy sources OR Meet the NRCan Solar Ready Guidelines for solar domestic hot water and photovoltaic systems	<ul style="list-style-type: none"> Letter of Commitment: quantify percentage of energy consumption from one or combination of renewable energy sources Elevation Plans and Floor Plans: modifications to enable renewable energy systems and storage NRCan Solar Ready Guideline's Checklist
R2: REFUGE AND BACK-UP POWER GENERATION	Submit Resilience Planning Checklist	<ul style="list-style-type: none"> Resilience Planning Checklist
Theme 4: Ecology		
E1: BIRD FRIENDLY GLAZING AND DESIGN	Align bird-friendly designs with Canadian Standards Association A460: 19: Bird Friendly Design standards for treatment of glazing materials, building integrated permanent structures, and overall building and site design	<ul style="list-style-type: none"> Elevation Plan, Floor Plan, Landscape Plan, and Roof Plan: indicate bird-friendly designs, rooftop vegetation, and ground-level ventilation grate treatments Site Statistics Template: Bird Friendly Design Statistics Section
E2: EXTERIOR LIGHTING	All exterior fixtures must be Dark Sky Compliant and all rooftop and exterior facade architectural illumination must be directed downward	<ul style="list-style-type: none"> Engineer Certified Lighting Plan

METRIC	TIER 1 MANDATORY REQUIREMENTS	SUBMISSION REQUIREMENTS FOR SITE PLAN APPROVAL
Theme 5: Natural Systems		
NS1: HEAT ISLAND EFFECT	Use combination of the following strategies to treat at least 75% of the site’s (non-roof) hardscape: <ul style="list-style-type: none"> • High-albedo paving materials • Open grid pavement and/or permeable surfaces • Shade from existing or new tree canopy • Shade from energy generation structures 	<ul style="list-style-type: none"> • Site Statistics Template: Landscape and Natural Systems Statistics Section • Materials List: SRI of high albedo paving • Landscape Plan: treated hardscape, soft landscaping, and maintenance requirements for the potable irrigation system, and green paving
NS2: TREE GROWTH	Plant ‘shade trees’ 6-8 m (20- 27 ft.) apart along the street frontages, and should be drought tolerant and non-invasive Provide adequate rooting space to support tree health and growth, through the minimum soil volume of 30m ³ for each new tree	<ul style="list-style-type: none"> • Landscape Plan: location of all new tree plantings, and species list • Site Statistics Template: Tree Growth Section
NS3: CLIMATE-RESILIENT LANDSCAPES	In all landscaped areas, including green roofs, plant a minimum of 50% native plants and comply with Ontario Invasive Plant Council Guidelines, including: <ul style="list-style-type: none"> • Minimum of 2 native flowering species to provide continuous bloom throughout the growing season to support pollinators • Preference for drought tolerant native species For vegetated buffer areas, adjacent Significant Natural Features, plant 100% native plants Provide a natural heritage restoration and/or enhancement plan with the proposed locations of natural heritage restoration, design specifications, and ecological function	<ul style="list-style-type: none"> • Site Statistics Template: Landscape and Natural Systems Section • Landscape Plan: native plantings, plant list, and irrigation requirements completed by a Water Smart Irrigation Professional • Natural Heritage Restoration Plan and/or Enhancement Plan
NS4: SUSTAINABLE ROOFS	Buildings with an available roof area larger than 500m ² must include one or a combination of green roof, cool roof, blue roof and/or solar PV: <ul style="list-style-type: none"> • Green roof and/or blue roof for at least 50% of Available Roof Space • Cool roof installed for 100% of Available Roof Space • Use a combination of a green, blue, cool roof or solar PV for at least 75% of Available Roof Space 	<ul style="list-style-type: none"> • Floor Plan, and Roof Plan: green roof, cool roof, and/or blue roof locations identified on elevations and roof plan • Landscape Plan (Green Roofs): the potable irrigation systems servicing the green roof and submit maintenance plan • Stormwater Management Report and Plan (Blue Roofs): quantifying blue roof storage and run-off • Site Statistics Template: Sustainable Roofs Section

MEDIUM- AND HIGH-RISE MULTI-UNIT RESIDENTIAL DEVELOPMENT

METRIC	TIER 1 MANDATORY REQUIREMENTS	SUBMISSION REQUIREMENTS FOR SITE PLAN APPROVAL
Theme 1: Energy and Building Performance		
EB1: ENERGY PERFORMANCE	GHGI: 15 CO ₂ e/m ² /yr TEUI: 135 kWh/m ² TED: 50 kWh/m ²	<ul style="list-style-type: none"> Design Development Stage Energy Modelling Report
Theme 2: Climate Impacts		
C11: EMBODIED CARBON	Conduct an Upfront Embodied Emissions Assessment for A1-A5 life cycle stage emissions in accordance with the CAGBC Zero Carbon Building Standard	<ul style="list-style-type: none"> CAGBC Zero Carbon Building Embodied Carbon Reporting Template (V3 or later)
Theme 3: Resilience		
R1: EMISSIONS FREE ENERGY AND STORAGE	Provide a minimum of 5% of building’s annual energy consumption from one or a combination of acceptable renewable energy sources	<ul style="list-style-type: none"> Letter of Commitment: quantify percentage of energy consumption from one or combination of renewable energy sources Elevation Plans and Floor Plans: modifications to enable renewable energy systems and storage
R2: REFUGE AND BACK-UP POWER GENERATION	Submit Resilience Planning Checklist Provide a refuge area with heating, cooling, lighting, potable water, and power available Provide 24 hours of back-up power	<ul style="list-style-type: none"> Resilience Planning Checklist Floor Plan: refuge area location and size, and amenities Letter of Commitment: back-up power and thermal energy to central refuge area and essential building systems
Theme 4: Ecology		
E1: BIRD FRIENDLY GLAZING AND DESIGN	Align bird-friendly designs with Canadian Standards Association A460: 19: Bird Friendly Design standards for treatment of glazing materials, building integrated permanent structures, and overall building and site design	<ul style="list-style-type: none"> Elevation Plan, Floor Plan, Landscape Plan, and Roof Plan: indicate bird-friendly designs, rooftop vegetation, and ground-level ventilation grate treatments Site Statistics Template: Bird Friendly Design Statistics Section
E2: EXTERIOR LIGHTING	All exterior fixtures must be Dark Sky Compliant and all rooftop and exterior facade architectural illumination must be directed downward	<ul style="list-style-type: none"> Engineer Certified Lighting Plan
Theme 5: Natural Systems		
NS1: HEAT ISLAND EFFECT	Use combination of the following strategies to treat at least 75% of the site’s (non-roof) hardscape: <ul style="list-style-type: none"> High-albedo paving materials Open grid pavement and/or permeable surfaces Shade from existing or new tree canopy Shade from energy generation structures 	<ul style="list-style-type: none"> Site Statistics Template: Landscape and Natural Systems Statistics Section Materials List: SRI of high albedo paving Landscape Plan: treated hardscape, soft landscaping, and maintenance requirements for the potable irrigation system, and green paving

METRIC	TIER 1 MANDATORY REQUIREMENTS	SUBMISSION REQUIREMENTS FOR SITE PLAN APPROVAL
<p>NS2: TREE GROWTH</p>	<p>Plant 'shade trees' 6-8 m (20- 27 ft.) apart along the street frontages, and should be drought tolerant and non-invasive</p> <p>Provide adequate rooting space to support tree health and growth, through the minimum soil volume of 30m³ for each new tree</p>	<ul style="list-style-type: none"> • Landscape Plan: location of all new tree plantings, and species list • Site Statistics Template: Tree Growth Section
<p>NS3: CLIMATE-RESILIENT LANDSCAPES</p>	<p>In all landscaped areas, including green roofs, plant a minimum of 50% native plants and comply with Ontario Invasive Plant Council Guidelines, including:</p> <ul style="list-style-type: none"> • Minimum of 2 native flowering species to provide continuous bloom throughout the growing season to support pollinators • Preference for drought tolerant native species <p>For vegetated buffer areas, adjacent Significant Natural Features, plant 100% native plants</p> <p>Provide a natural heritage restoration and/or enhancement plan with the proposed locations of natural heritage restoration, design specifications, and ecological function</p>	<ul style="list-style-type: none"> • Site Statistics Template: Landscape and Natural Systems Section • Landscape Plan: native plantings, plant list, and irrigation requirements completed by a Water Smart Irrigation Professional • Natural Heritage Restoration Plan and/or Enhancement Plan
<p>NS4: SUSTAINABLE ROOFS</p>	<p>Buildings with an available roof area larger than 500m² must include one or a combination of green roof, cool roof, blue roof and/or solar PV:</p> <ul style="list-style-type: none"> • Green roof and/or blue roof for at least 50% of Available Roof Space • Cool roof installed for 100% of Available Roof Space • Use a combination of a green, blue, cool roof or solar PV for at least 75% of Available Roof Space 	<ul style="list-style-type: none"> • Floor Plan, and Roof Plan: green roof, cool roof, and/or blue roof locations identified on elevations and roof plan • Landscape Plan (Green Roofs): the potable irrigation systems servicing the green roof and submit maintenance plan • Stormwater Management Report and Plan (Blue Roofs): quantifying blue roof storage and run-off • Site Statistics Template: Sustainable Roofs Section

INSTITUTIONAL AND COMMERCIAL DEVELOPMENT

METRIC	TIER 1 MANDATORY REQUIREMENTS	SUBMISSION REQUIREMENTS FOR SITE PLAN APPROVAL
Theme 1: Energy and Building Performance		
EB1: ENERGY PERFORMANCE	Commercial office and institutional: GHGI: 15 CO ₂ e/m ² /yr TEUI: 130 kWh/m ² TEDI: 30 kWh/m ²	Commercial retail: GHGI: 10 CO ₂ e/m ² /yr TEUI: 120 kWh/m ² TEDI: 40 kWh/m ²
		<ul style="list-style-type: none"> Design Development Stage Energy Modelling Report
Theme 2: Climate Impacts		
C11: EMBODIED CARBON	Conduct an Upfront Embodied Emissions Assessment for A1-A5 life cycle stage emissions in accordance with the CAGBC Zero Carbon Building Standard	<ul style="list-style-type: none"> CAGBC Zero Carbon Building Embodied Carbon Reporting Template (V3 or later)
C12: EV CHARGING INFRASTRUCTURE	Equip 10% of all parking spaces with an energized outlet Level 2 charging or higher installed adjacent to the space for the purpose of EV charging Provide signage indicating that the spaces with chargers are for customers and/or employees	<ul style="list-style-type: none"> Parking Plans: location of EV and EV-Ready spaces, performance level Letter of Commitment: confirm the number of EVSE and rough-ins provided and the percentage of parking spaces with EVSE and rough-ins Statistics Template: EVSE and EV-Ready Section
Theme 3: Resilience		
R1: EMISSIONS FREE ENERGY AND STORAGE	Provide a minimum of 5% of building’s annual energy consumption from one or a combination of acceptable renewable energy sources	<ul style="list-style-type: none"> Letter of Commitment: quantify percentage of energy consumption from one or combination of renewable energy sources Elevation Plans and Floor Plans: modifications to enable renewable energy systems and storage
R2: REFUGE AND BACK-UP POWER GENERATION	Commercial office and institutional buildings: provide a refuge area with heating, cooling, lighting, potable water, and back-up power available.	Commercial office, retail, and institutional buildings: Submit Resilience Planning Checklist, and Provide 24 hours of back-up power
		<ul style="list-style-type: none"> Resilience Planning Checklist Floor Plan: refuge area location and size, and amenities Letter of Commitment: back-up power and thermal energy to central refuge area and essential building systems
Theme 4: Ecology		
E1: BIRD FRIENDLY GLAZING AND DESIGN	Align bird-friendly designs with Canadian Standards Association A460: 19: Bird Friendly Design standards for treatment of glazing materials, building integrated permanent structures, and overall building and site design	<ul style="list-style-type: none"> Elevation Plan, Floor Plan, Landscape Plan, and Roof Plan: indicate bird-friendly designs, rooftop vegetation, and ground-level ventilation grate treatments Site Statistics Template: Bird Friendly Design Statistics Section
E2: EXTERIOR LIGHTING	All exterior fixtures must be Dark Sky Compliant and all rooftop and exterior facade architectural illumination must be directed downward	<ul style="list-style-type: none"> Engineer Certified Lighting Plan

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Theme 5: Natural Systems

<p>NS1: HEAT ISLAND EFFECT</p>	<p>Use combination of the following strategies to treat at least 50% of the site’s (non-roof) hardscape:</p> <ul style="list-style-type: none"> • High-albedo paving materials • Open grid pavement and/or permeable surfaces • Shade from existing or new tree canopy • Shade from energy generation structures 	<ul style="list-style-type: none"> • Site Statistics Template: Landscape and Natural Systems Statistics Section • Materials List: SRI of high albedo paving • Landscape Plan: treated hardscape, soft landscaping, and maintenance requirements for the potable irrigation system, and green paving
<p>NS2: TREE GROWTH</p>	<p>Plant ‘shade trees’ 6-8 m (20- 27 ft.) apart along the street frontages, and should be drought tolerant and non-invasive</p> <p>Provide adequate rooting space to support tree health and growth, through the minimum soil volume of 30m³ for each new tree</p>	<ul style="list-style-type: none"> • Landscape Plan: location of all new tree plantings, and species list • Site Statistics Template: Tree Growth Section
<p>NS3: CLIMATE-RESILIENT LANDSCAPES</p>	<p>In all landscaped areas, including green roofs, plant a minimum of 50% native plants and comply with Ontario Invasive Plant Council Guidelines, including:</p> <ul style="list-style-type: none"> • Minimum of 2 native flowering species to provide continuous bloom throughout the growing season to support pollinators • Preference for drought tolerant native species <p>For vegetated buffer areas, adjacent Significant Natural Features, plant 100% native plants</p> <p>Provide a natural heritage restoration and/or enhancement plan with the proposed locations of natural heritage restoration, design specifications, and ecological function</p>	<ul style="list-style-type: none"> • Site Statistics Template: Landscape and Natural Systems Section • Landscape Plan: native plantings, plant list, and irrigation requirements completed by a Water Smart Irrigation Professional • Natural Heritage Restoration Plan and/or Enhancement Plan
<p>NS4: SUSTAINABLE ROOFS</p>	<p>Buildings with an available roof area larger than 500m² must include one or a combination of green roof, cool roof, blue roof and/or solar PV:</p> <ul style="list-style-type: none"> • Green roof and/or blue roof for at least 50% of Available Roof Space • Cool roof installed for 100% of Available Roof Space • Use a combination of a green, blue, cool roof or solar PV for at least 75% of Available Roof Space 	<ul style="list-style-type: none"> • Floor Plan, and Roof Plan: green roof, cool roof, and/or blue roof locations identified on elevations and roof plan • Landscape Plan (Green Roofs): the potable irrigation systems servicing the green roof and submit maintenance plan • Stormwater Management Report and Plan (Blue Roofs): quantifying blue roof storage and run-off • Site Statistics Template: Sustainable Roofs Section

INDUSTRIAL DEVELOPMENT

METRIC	TIER 1 MANDATORY REQUIREMENTS	SUBMISSION REQUIREMENTS FOR SITE PLAN APPROVAL
Theme 1: Energy and Building Performance		
EB1: ENERGY PERFORMANCE	GHGI: 15 CO ₂ e/m ² /yr TEU: 130 kWh/m ² TED: 60 kWh/m ²	<ul style="list-style-type: none"> Design Development Stage Energy Modelling Report
Theme 2: Climate Impacts		
C11: EMBODIED CARBON	Conduct an Upfront Embodied Emissions Assessment for A1-A5 life cycle stage emissions in accordance with the CAGBC Zero Carbon Building Standard	<ul style="list-style-type: none"> CAGBC Zero Carbon Building Embodied Carbon Reporting Template (V3 or later)
C12: EV CHARGING INFRASTRUCTURE	<p>Equip 10% of all parking spaces with an energized outlet Level 2 charging or higher installed adjacent to the space for the purpose of EV charging</p> <p>Provide signage indicating that the spaces with chargers are for customers and/or employees</p>	<ul style="list-style-type: none"> Parking Plans: location of EV and EV-Ready spaces, performance level Letter of Commitment: confirm the number of EVSE and rough-ins provided and the percentage of parking spaces with EVSE and rough-ins Statistics Template: EVSE and EV-Ready Section
Theme 3: Resilience		
R1: EMISSIONS FREE ENERGY AND STORAGE	Provide a minimum of 5% of building's annual energy consumption from one or a combination of acceptable renewable energy sources	<ul style="list-style-type: none"> Letter of Commitment: quantify percentage of energy consumption from one or combination of renewable energy sources Elevation Plans and Floor Plans: modifications to enable renewable energy systems and storage
R2: REFUGE AND BACK-UP POWER GENERATION	<p>Submit Resilience Planning Checklist</p> <p>Provide a refuge area with heating, cooling, lighting, potable water, and back-up power available</p> <p>Provide 24 hours of back-up power</p>	<ul style="list-style-type: none"> Resilience Planning Checklist Floor Plan: refuge area location and size, and amenities Letter of Commitment: back-up power and thermal energy to central refuge area and essential building systems
Theme 4: Ecology		
E1: BIRD FRIENDLY GLAZING AND DESIGN	Align bird-friendly designs with Canadian Standards Association A460: 19: Bird Friendly Design standards for treatment of glazing materials, building integrated permanent structures, and overall building and site design	<ul style="list-style-type: none"> Elevation Plan, Floor Plan, Landscape Plan, and Roof Plan: indicate bird-friendly designs, rooftop vegetation, and ground-level ventilation grate treatments Site Statistics Template: Bird Friendly Design Statistics Section
E2: EXTERIOR LIGHTING	All exterior fixtures must be Dark Sky Compliant and all rooftop and exterior facade architectural illumination must be directed downward	<ul style="list-style-type: none"> Engineer Certified Lighting Plan

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Theme 5: Natural Systems

<p>NS1: HEAT ISLAND EFFECT</p>	<p>Use combination of the following strategies to treat at least 50% of the site’s (non-roof) hardscape:</p> <ul style="list-style-type: none"> • High-albedo paving materials • Open grid pavement and/or permeable surfaces • Shade from existing or new tree canopy • Shade from energy generation structures 	<ul style="list-style-type: none"> • Site Statistics Template: Landscape and Natural Systems Statistics Section • Materials List: SRI of high albedo paving • Landscape Plan: treated hardscape, soft landscaping, and maintenance requirements for the potable irrigation system, and green paving
<p>NS2: TREE GROWTH</p>	<p>Plant ‘shade trees’ 6-8 m (20- 27 ft.) apart along the street frontages, and should be drought tolerant and non-invasive</p> <p>Provide adequate rooting space to support tree health and growth, through the minimum soil volume of 30m³ for each new tree</p>	<ul style="list-style-type: none"> • Landscape Plan: location of all new tree plantings, and species list • Site Statistics Template: Tree Growth Section
<p>NS3: CLIMATE-RESILIENT LANDSCAPES</p>	<p>In all landscaped areas, including green roofs, plant a minimum of 50% native plants and comply with Ontario Invasive Plant Council Guidelines, including:</p> <ul style="list-style-type: none"> • Minimum of 2 native flowering species to provide continuous bloom throughout the growing season to support pollinators • Preference for drought tolerant native species <p>For vegetated buffer areas, adjacent Significant Natural Features, plant 100% native plants</p> <p>Provide a natural heritage restoration and/or enhancement plan with the proposed locations of natural heritage restoration, design specifications, and ecological function</p>	<ul style="list-style-type: none"> • Site Statistics Template: Landscape and Natural Systems Section • Landscape Plan: native plantings, plant list, and irrigation requirements completed by a Water Smart Irrigation Professional • Natural Heritage Restoration Plan and/or Enhancement Plan
<p>NS4: SUSTAINABLE ROOFS</p>	<p>Buildings with an available roof area larger than 500m² must include one or a combination of green roof, cool roof, blue roof and/or solar PV:</p> <ul style="list-style-type: none"> • Green roof and/or blue roof for at least 50% of Available Roof Space • Cool roof installed for 100% of Available Roof Space • Use a combination of a green, blue, cool roof or solar PV for at least 75% of Available Roof Space 	<ul style="list-style-type: none"> • Floor Plan, and Roof Plan: green roof, cool roof, and/or blue roof locations identified on elevations and roof plan • Landscape Plan (Green Roofs): the potable irrigation systems servicing the green roof and submit maintenance plan • Stormwater Management Report and Plan (Blue Roofs): quantifying blue roof storage and run-off • Site Statistics Template: Sustainable Roofs Section