


TORONTO GREEN STANDARD v3



AIR QUALITY



ENERGY/ GHG
& RESILIENCE



WATER BALANCE,
QUALITY AND
EFFICIENCY



SOLID WASTE



ECOLOGY

SUSTAINABILITY REQUIREMENTS FOR
NEW DEVELOPMENT IN TORONTO

Low-Rise Residential



Development
Feature

Pedestrian Infrastructure

Encourage walking as a clean air alternative for all ages and abilities

TIER 1

AQ 1.1 Connectivity

Provide safe, direct, universally accessible pedestrian routes, including crosswalks and midblock crossings that connect the buildings onsite to the off-site pedestrian network and priority destinations.

AQ 1.2 Sidewalk Space

Provide a context-sensitive pedestrian clearway that is a minimum of 2.1 m wide, to safely and comfortably accommodate pedestrian flow.

AQ 1.3 Weather Protection

Provide covered outdoor waiting areas for pedestrian comfort and protection from inclement weather.

AQ 1.4 Pedestrian Specific Lighting

Provide pedestrian-scale lighting that is evenly spaced, continuous and directed onto sidewalks, pathways, entrances, outdoor waiting areas and public spaces.



TIER 1

AQ 2.1 UHI Non-roof Hardscape

Use a combination of the following strategies to treat at least 50% of the site's non-roof hardscape (including driveways, walkways, courtyards, surface parking areas, artificial turf and other on-site hard surfaces):

- High-albedo paving materials with an initial solar reflectance of at least 0.33 or SRI of 29
- Open grid pavement with at least 50% perviousness
- Shade from existing or new tree canopy within 10 years of landscape installation
- Shade from architectural structures that are vegetated or have an initial solar reflectance of at least 0.33 at installation or an SRI of 29
- Shade from structures with energy generation.

AQ 2.2 Green & Cool Roofs

Roof areas must be provided with one of the following:

- Green roof for at least 50% of Available Roof Space; OR
- Cool roof installed for 100% of Available Roof Space; OR
- A combination of a green roof, and cool roof and solar PV for at least 75% of Available Roof Space.

TIER 2

AQ 2.3 Enhanced UHI, Non-roof hardscape (Core)

Use any combination of the strategies in AQ 2.1 to treat at least 75% of the site's non-roof hardscape (including driveways, walkways, courtyards, parking areas, artificial turf and other on-site hard surfaces).



Development Feature

Energy Efficiency

Reduce energy loads in buildings, encourage passive design strategies and provide protection during power disruptions

TIER 1

GHG 1.1 Building Energy Performance

Design the building(s) to achieve at least ENERGY STAR® for New Homes, version 17 or R-2000® requirements.

TIER 2

GHG 1.2 Advanced Building Energy Performance (Core)

Design, construct and label the building(s) to achieve at least ENERGY STAR® for New Homes, version 17 or R-2000® requirements.

City-owned buildings (Agencies, Corporations and Divisions) Residential uses:

Design, construct and label the building to achieve at least ENERGY STAR® for New Homes, version 17 or R-2000® requirements. The CHBA Net Zero Home Labelling Program, Passive House or an alternative zero emissions standard certification is encouraged.

GHG 1.3 Energy Efficient Appliances (Core)

Where supplied, for each unit, provide ENERGY STAR® labeled refrigerators, ceiling fans, clothes washers and dishwashers.

TIER 3

GHG 1.4 High Performance, Low-Carbon Pathway (Core)

Design and construct the building to be Net Zero ready in accordance with the CHBA Net Zero Home Labelling Program.

TIER 4

GHG 1.5 High Performance, Low-Carbon Pathway (Core)

Design and construct the building in accordance with the CHBA Net Zero Home Labelling Program or Passive House Standards.



Development
Feature

Renewable Energy

Provide low carbon energy sources of supply and energy storage

TIER 1

GHG 2.1 On-Site Renewable Energy

City-owned buildings (Divisions, Agencies and Corporations of the City of Toronto) residential buildings:
For new buildings with a gross floor area of greater than 100m² install renewable energy devices to supply at least 5% of the building's total energy load from one or a combination of energy sources.

TIER 2

GHG 2.2 Solar Readiness (Core)

Ensure that buildings are designed to accommodate connections to solar PV or solar thermal technologies.

GHG 2.3 On-Site Renewable Energy (Optional)

Design on-site renewable energy systems to supply at least 5% of the building's total energy load from one or a combination of acceptable renewable energy sources.

OR

Design on-site renewable energy systems to supply at least 20% of the building's total energy load from geexchange.



Development Feature

Construction Activity:

Protect water quality during construction and demolition

TIER 1

WQ 1.1 Erosion & Sediment Control

Follow the Erosion and Sediment Control Guideline for Urban Construction (Greater Golden Horseshoe Conservation Authorities, December 2006) during construction and demolition activities.

Development Feature

Water Balance (Stormwater Retention):

Capture and manage rainfall to improve water quality and aquatic ecosystem health while enhancing the resilience of infrastructure to extreme rainfall events.

TIER 1

WQ 2.1 Stormwater Retention & Reuse

Retain runoff generated from a minimum of 5 mm depth of rainfall from all site surfaces through infiltration, evapotranspiration and water harvesting and reuse.

TIER 2

WQ 2.2 Advanced Stormwater Retention & Reuse (Core)

Retain runoff generated from a minimum of 10 mm depth of rainfall from all site surfaces through infiltration, evapotranspiration and water harvesting and reuse.

TIER 3

WQ 2.3 High Performance Stormwater Retention & Reuse (Core)

Retain runoff generated from a minimum of 25 mm depth of rainfall from all site surfaces through infiltration, evapotranspiration and water harvesting and reuse.



Development Feature

Water Quality (Stormwater Run-Off)

Manage and clean stormwater that leaves the site

TIER 1

WQ 3.1 Total Suspended Solids (TSS)

Remove 80% of total suspended solids (TSS) on an annual loading basis from all runoff leaving the site based on the post-development level of imperviousness.

WQ 3.2 E.Coli Reduction

Control the amount of E. Coli directly entering Lake Ontario and waterfront areas as identified in the Wet Weather Flow Management Guidelines.

Development Feature

Water Efficiency

Reduce demand for potable water through efficient fixtures and appliances and the reuse of non-potable water

TIER 1

WQ 4.1 Drought-tolerant Landscapes

Where potable water is used for irrigation, provide drought-tolerant plants for at least 50% of the landscaped site area (including at-grade landscapes, vegetated roofs and walls).

TIER 2

WQ 4.2 Water Efficient Fixtures (Core)

Install water fixtures that achieve at least a 40% reduction in potable water consumption for the building (not including irrigation) over the baseline water fixtures.

WQ 4.3 Efficient Irrigation (Core)

Where soft landscaping exists on the site, reduce potable water use for irrigation by 60%.

TIER 3

WQ 4.4 Advanced Water Efficient Fixtures (Core)

Install water fixtures or use non-potable water sources to achieve at least a 50% reduction in potable water consumption for the building (not including irrigation) over the baseline water fixtures.



Urban Forest: Increase Tree Canopy

Create landscapes that support tree growth and enhance the urban forest

TIER 1

EC 1.1 Tree Planting Areas and Soil Volume

Create tree planting areas within the site and in the adjacent public boulevard that meet the soil volume and other requirements necessary to provide tree canopy. Determine the total amount of soil required by following the following formula:

$$40\% \text{ of the site area} \div 66 \text{ m}^2 \times 30 \text{ m}^3 = \text{total soil volume}$$

Ensure that each separate tree planting area has a minimum of 30m³ soil.

EC 1.2 Trees Along Street Frontages

Plant large growing shade trees along street frontages that are spaced appropriately having regard to site conditions and have access to a minimum of 30 m³ of soil per tree.

EC 1.3 Parking lots

Parking Lots: If surface parking is permitted and provided, plant large growing shade trees throughout the parking lot interior at a minimum ratio of one tree planted for every five parking spaces supplied.

EC 1.4 Watering program

Provide a watering program for trees for at least the first 2 years after planting.

TIER 2

EC 1.5 Enhanced Trees in Parking Lots (Optional)

If surface parking is provided, plant large growing shade trees at a minimum ratio of one tree planted for every three parking spaces supplied.

EC 1.6 Enhanced Tree Planting and Soil Volume (Optional)

Provide 25% more than the total soil volume required as per EC 1.1. Soil shall be deployed on-site or on adjacent properties as approved by the City of Toronto.

EC 1.7 Enhanced Tree Protection During Construction (Optional)

Provide double the minimum tree protection zones for all existing trees on sites outside of the Ravine Protected Area.



Development
Feature

Natural Heritage

Protect, restore and enhance Ravine and Natural Feature Protected Areas

TIER 1

EC 2.1 Ravine and Natural Feature Protected Areas and Natural Heritage System

Plant the landscaped area within the Natural Heritage System and the Ravine Protected Area with 100% native plants (including trees, shrubs and herbaceous plants).

EC 2.2 Ravine and Protected Areas Buffers

Where a setback from the toe-of-slope or the top-of-bank is required within the Natural Heritage System or the Ravine Protected Area prepare and implement a stewardship plan for the area.

Development
Feature

Biodiversity In Landscapes

Enhancement of native plant and animal species, habitat and ecosystems

TIER 1

EC 3.1 Native and Pollinator Supportive Species

Plant the landscaped site area using a minimum of 50% native plants (including trees, shrubs and herbaceous plants).

EC 3.2 Invasive Species

Do not plant any invasive species within the site or along street frontages.

TIER 2

EC 3.3 Restoration of Biodiversity and Pollinator Habitat (Optional)

Restore or protect a minimum of 30% (including the building footprint) of all portions of the site identified as previously disturbed, with native vegetation that includes at least two native flowering species that bloom at all periods over the growing season.

EC 3.4 Biodiverse Green Roofs for Pollinators (Optional)

Provide a minimum of 50% of Available Roof Space as biodiverse green roof.



Bird Collision Deterrence

Design buildings to reduce bird collisions and mortality

TIER 1

EC 4.1 Bird Friendly Glazing

Buildings abutting ravines or natural areas:

Use a combination of the following strategies to treat a minimum of 85% of all exterior glazing within the greater of first 12 m of the building above grade or the height of the mature tree canopy:

- Low reflectance, opaque materials
- Visual markers applied to glass with a maximum spacing of 100 mm x 100 mm
- Building-integrated structures to mute reflections on glass surfaces

All Buildings:

Balcony railings: Treat all glass balcony railings within the first 12 m of the building above grade., glass parapets and at-grade guardrails with visual markers provided with a spacing of no greater than 100 mm x 100 mm.

Fly-through conditions: Treat glazing at all heights resulting in a fly-through conditions with visual markers at a spacing of no greater than 100 mm x 100 mm. Fly through conditions that require treatment include:

- Glass corners
- Parallel glass
- Building integrated or free-standing vertical glass
- At-grade glass guardrails
- Glass Parapets

EC 4.2 Grate Porosity

Ensure ground level ventilation grates have a porosity of less than 20 mm X 20 mm (or 40 mm x 10 mm).

TIER 2

EC 4.3 Enhanced Bird Friendly Glazing (Optional)

Use a combination of the following strategies to treat a minimum of 95% of all exterior glazing within the greater of the first 12 m of the building above grade or the height of the mature tree canopy (including all balcony railings, clear glass corners, parallel glass and glazing surrounding interior courtyards and other glass surfaces):

- Low reflectance, opaque materials
- Visual markers applied to glass with a maximum spacing of 100 mm x 100 mm
- Building-integrated structures to mute reflections on glass surfaces.



Development
Feature

Light Pollution

Reduce nighttime glare and light trespass to support ecosystem and human health

TIER 1

EC 5.1 Exterior Lighting

All exterior fixtures must be Dark Sky compliant.



Development Feature

Storage and Collection of Recycling and Organic Waste

Facilitate waste reduction and diversion

TIER 1

SW 1.1 Waste Storage Space

Provide a ventilated internal space, external to the living area and on private property, for the storage of separated recycling, organics, and garbage generated between collections. Materials must be consistent with the City of Toronto's waste diversion programs. Minimum floor space requirements are as follows:

- 2 m² for every 5 units for garbage
- 2 m² for every 4 units for recycling/bulky items
- 2 m² for every 4 units for organics

TIER 2

SW 1.2 In-suite Waste Storage Space (Optional)

Provide separated cabinet space in all kitchen suites for segregated collection of:

- Recyclables
- Organics
- Garbage

Development Feature

Building Reuse

To encourage adaptive reuse and optimize the environmental performance of products and materials

TIER 2

SW 2.1 Building Lifecycle Impact Reduction (Optional)

Reuse or salvage building materials from off-site or on-site equal to 50% of the surface area of the existing building.

Development Feature

Construction Waste Management

Divert non-hazardous construction and demolition debris

TIER 2

SW 3.1 Construction Waste (Core)

Divert at least 75% of the total construction and demolition material; diverted materials must include at least four material streams.

TIER 3

SW 3.2 Construction Waste (Core)

Divert at least 95% of the total construction and demolition material; diverted materials must include at least four material streams.



Development
Feature

Sustainable Building Materials

Encourage the use of products and materials that minimize the lifecycle impacts to the environment

TIER 2

SW 4.1 Sustainable Building Materials (Optional)

Ensure that at least 25%, by cost, of the total value of permanently installed building products in the project at meet at least one of the extraction criteria for OPTION 2 of LEED V4 MR CREDIT: BUILDING PRODUCT DISCLOSURE AND OPTIMIZATION – SOURCING OF RAW MATERIALS.