

the Toronto GREEN Development Standard Checklist



[for Low-Rise Residences]

Purpose

The Toronto Green Development Standard Checklist is a tool to aid developers in tracking their *intended* implementation of the Standard for any given project, identifying both green performance targets and submittal materials that can demonstrate implementation. It is also a tool to aid City staff in tracking the implementation of the Standard throughout Toronto.

How to Use It

The Checklist should be provided to developers by City Planning staff at the earliest possible stage of the development process, ideally during pre-application consultation.

The Checklist follows the same structure as the Green Development Standard, with development features categorized according to environmental drivers (including AIR, ENERGY, WATER, etc.). It should be used in conjunction with the full Green Development Standard document (available at: www.toronto.ca/planning/greendevlopment.htm), which has a more complete description of each development feature and potential implementation strategies.

In the first column, the symbol indicates a minimum requirement under the Green Development Standard. Features without this symbol are additional options that would further improve a development's environmental performance.

The second column indicates which submittal materials can be used to show implementation. For some development features, this column is blank because there are currently no required submittals where implementation could be demonstrated. Work is currently underway to determine how implementation of these features could be indicated in the future.

How to Submit It

Developers should return a completed copy of the checklist with their development application, whether or not they will meet the Green Development Standard. The completion of the Checklist is equally valuable for developments that do not meet the Green Development Standard, since it will help staff to track the implementation of the various features within the Standard.

Developers should be requested to also keep a copy of the Checklist and to revise it if their development plans change.

Contact for More Information: sustainablecity@toronto.ca, 416.392.0191



Green Development Standard Checklist: PROJECT INFORMATION

Approval Process

Official Plan Amendment Zoning Bylaw Amendment Site Plan Approval Draft Plan of Subdivision

Office Use Only:

Date Received: _____ Staff Contact: _____ IBMS # _____

Property and Applicant

Property Address (Street Number / Name) or Location

Registered Property Owner

Applicant Name

Contact Information

Project Description (including any third party green certification being pursued, such as LEED, R-2000 or Energy Star)



Green Development Standard Checklist: AIR

Toronto Green Development Standard	Demonstrate how the Standard will be met through your...
<p>Local Materials</p> <p><input type="checkbox"/> ► Minimum: 10% of materials (based on value) harvested, manufactured and supplied within 800 km of project.</p> <p><input type="checkbox"/> Preferred: 20% of materials (based on value) harvested, manufactured and supplied within 800 km of project.</p>	
<p>Pedestrian Infrastructure</p> <p><input type="checkbox"/> ► Appropriate grading and surface treatment, in accordance with the Toronto Accessibility Design Guidelines and the Draft Toronto Streetscape Manual, as applicable.</p>	<ul style="list-style-type: none"> • <i>Site and Landscape Plan</i>
<p>Construction Activity</p> <p><input type="checkbox"/> ► Methods identified for minimizing air emissions and dust during construction and demolition.</p> <p><input type="checkbox"/> Methods identified for minimizing VOC emissions during construction and demolition.</p>	
<p>Ozone Protection</p> <p><input type="checkbox"/> ► Zero use of CFC-based refrigerants and Halons in fire suppression</p>	
<p>Urban Heat Island Reduction: At Grade</p> <p><input type="checkbox"/> ► One of the following provided:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Cover provided to shade at least 30% of all hardscape, including surface parking, walkways and others <input type="checkbox"/> Light coloured materials* for at least 50% of all hardscape, including surface parking, walkways and others <input type="checkbox"/> Combination of shading and light coloured materials* for at least 50% of all hardscape, including surface parking, walkways and others. <p>* <i>Light coloured materials must have a reflectance of 0.3</i></p>	<ul style="list-style-type: none"> • <i>Site Plan</i> • <i>Landscape Plan</i> • <i>Sun / Shadow Study</i> (where applicable) • <i>Arborist Report</i> • <i>Tree Preservation Plan</i> • <i>Stormwater Management Report</i>
<p>Urban Heat Island: Roof</p> <p><input type="checkbox"/> One of the following provided:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Green roof installed with 50% minimum roof coverage <input type="checkbox"/> Light coloured roofing materials* used for 75% of the roof <input type="checkbox"/> Combination of green roof and light coloured roofing materials* for at least 75% of the roof. <p><input type="checkbox"/> Green roof designed to meet the City's performance criteria (minimum of 6 inch depth, non-monoculture)</p> <p>* <i>“Light coloured roofing materials” must have Surface Reflectivity Index greater than 78 and emissivity greater than 0.9 according to ASTM Standard 408.</i></p>	<ul style="list-style-type: none"> • <i>Site Plan</i> • <i>Roof Plan</i> (where applicable) • <i>Stormwater Management Report</i>

Green Development Standard Checklist: AIR



Toronto Green Development Standard	Demonstrate how the Standard will be met through your...
<p>Indoor Air Quality</p> <ul style="list-style-type: none"><input type="checkbox"/> ► 45% of materials, including adhesives, sealants, paints, coatings, carpets, composite wood and agrifiber products, are low-emitting.<input type="checkbox"/> Preferred: 75% of materials are low-emitting<input type="checkbox"/> Excellent: 90% of materials are low-emitting<input type="checkbox"/> Proper ventilation provided to control fungus, mold and bacteria.<input type="checkbox"/> Principle Venting Capacity (PVC) = 15 cubic feet per minute times the number of bedrooms + 1<input type="checkbox"/> Forced air distribution required to be interconnected with operation of PVC fan.	



Green Development Standard Checklist: ENERGY

Toronto Green Development Standard	Demonstrate how the Standard will be met through your...
<p>Insulation</p> <p><input type="checkbox"/> ► Walls, floor and ceiling insulated to the following Energuide standards:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Ceiling w/ attic: R40, Ceiling without attic: R31 <input type="checkbox"/> Exterior walls: R19+5 <input type="checkbox"/> Basement walls: full height, R+10/R13 <input type="checkbox"/> Exposed floors: R31 Slab w/o infloor heating: <ul style="list-style-type: none"> <input type="checkbox"/> If >2ft below grade: uninsulated <input type="checkbox"/> If <2ft BG: R+10, edge 	
<p>Air tightness / Air Leakage</p> <p><input type="checkbox"/> ► Air leakage at doors and windows reduced to less than 2.0 in²/100ft.</p>	
<p>Windows and Doors</p> <p><input type="checkbox"/> ► Energy Star certified windows installed</p>	
<p>Ducts</p> <p><input type="checkbox"/> ► Ductwork sealed in basement, and ducts located in heated boundary</p>	
<p>Space Heating and Cooling</p> <p><input type="checkbox"/> ► Energy Star heating and air conditioning system installed</p>	
<p>Water Heating</p> <p><input type="checkbox"/> ► High efficiency boiler OR tankless water heater installed, complying with Canada's energy efficiency regulations.</p>	
<p>Light Fixtures and Home Appliances</p> <p><input type="checkbox"/> ► All fixtures are Energy Star compliant.</p> <p><input type="checkbox"/> ► Where new appliances are being supplied, all are Energy Star compliant.</p>	
<p>Green Energy</p> <p><input type="checkbox"/> On-site renewable energy to self-supply 5% -10% of project's energy needs.</p> <p><input type="checkbox"/> 25% of energy needs purchased through grid-source renewable energy.</p>	
<p>Daylighting / Building Orientation</p> <p><input type="checkbox"/> Building oriented and designed to take advantage of passive solar heating.</p> <p><input type="checkbox"/> Building oriented and designed to take advantage of natural lighting</p>	<ul style="list-style-type: none"> • <i>Site Plan</i> • <i>Elevation Drawings</i> • <i>Floor Plans</i>



Green Development Standard Checklist: WATER

Toronto Green Development Standard	Demonstrate how the Standard will be met through your...
<p>Construction Activity</p> <p><input type="checkbox"/> ► Greater Toronto Area Conservation Authorities on-site Erosion and Sediment Control Guidelines adhered to during construction and demolition activities.</p>	<ul style="list-style-type: none"> • <i>Servicing Report</i> • <i>Stormwater Management Report</i> • <i>Sediment and Erosion Control Plan</i> (where applicable)
<p>Stormwater Run-Off: Suspended Solids Removal</p> <p><input type="checkbox"/> ► On an annual loading basis, 80% of total suspended solids removed from all runoff leaving the site.</p>	<ul style="list-style-type: none"> • <i>Servicing Report</i> • <i>Stormwater Management Report</i> • <i>Sediment and Erosion Control Plan</i> (where applicable)
<p>Stormwater Run-Off: Disinfection</p> <p><input type="checkbox"/> ► Runoff from the site that discharges directly into Lake Ontario or Waterfront areas disinfected.</p>	<ul style="list-style-type: none"> • <i>Servicing Report</i> • <i>Stormwater Management Report</i> • <i>Sediment and Erosion Control Plan</i> (where applicable)
<p>Stormwater Run-Off: Erosion Control</p> <p><input type="checkbox"/> ► Greater Toronto Area Conservation Authorities on-site Erosion and Sediment Control Guidelines adhered to for individual sites which discharge directly or are in close proximity to natural watercourses</p>	<ul style="list-style-type: none"> • <i>Servicing Report</i> • <i>Stormwater Management Report</i> • <i>Sediment and Erosion Control Plan</i> (where applicable)
<p>Stormwater Retention / Water balance</p> <p><input type="checkbox"/> ► Stormwater on-site retained to the same level of annual volume of overland runoff allowable under pre-development conditions</p> <p><input type="checkbox"/> ► All runoff retained on the site from small design rainfall events (typically 5 mm)</p>	<ul style="list-style-type: none"> • <i>Servicing Report</i> • <i>Stormwater Management Report</i>



Green Development Standard Checklist: WATER

Toronto Green Development Standard	Demonstrate how the Standard will be met through your...
Low-Water Landscaping <input type="checkbox"/> Drought-resistant plant materials used.	<ul style="list-style-type: none">• <i>Landscape Plan</i>
Rain Water Harvesting <input type="checkbox"/> At least 50% of rainwater collected, treated (if necessary), and used for flushing toilets and/or irrigation.	<ul style="list-style-type: none">• <i>Servicing Report</i>• <i>Stormwater Management Plan</i>
Grey Water Re-use <input type="checkbox"/> Grey water from laundry and/or bathing collected, treated, and used for flushing toilets/urinals, irrigation, or other appropriate uses.	<ul style="list-style-type: none">• <i>Servicing Report</i>
High Efficiency Fixtures and Appliances <input type="checkbox"/> ► All water fixtures meet efficiency standards <input type="checkbox"/> toilets: 6.0 L/flush; urinals: 3.8L/flush; faucets: 9.5L/min. <input type="checkbox"/> ► Where provided, all appliances meet efficiency standards <input type="checkbox"/> dishwashers: 38L; washing machines use 40% less water. <input type="checkbox"/> Individual faucet metering (0.95 L / cy) provided.	



Green Development Standard Checklist: SOLID WASTE

Toronto Green Development Standard	Demonstrate how the Standard will be met through your...
<p>Construction Waste Management</p> <p><input type="checkbox"/> ► Maximum of 2.5 Lbs /sq foot of construction waste sent to landfill</p>	
<p>Reuse of Building Materials</p> <p><input type="checkbox"/> Preferred: At least 5% of project's materials (based on value) are reused materials.</p> <p><input type="checkbox"/> Excellent: 10% or more of project's materials (based on value) are reused materials.</p>	
<p>Use of Recycled Materials</p> <p><input type="checkbox"/> Preferred: At least 7.5% of a project's materials (based on value) are comprised of recycled content**</p> <p><input type="checkbox"/> Excellent: 15% recycled content*</p> <p><i>*Recycled content defined by CAN/CSA-ISO 14021-00 Environmental Labeling and Advertising Guidelines</i></p>	
<p>Durable Buildings</p> <p><input type="checkbox"/> Compliance to CSA S478-95 (R2001) guideline for durable buildings</p>	



Green Development Standard Checklist: ECOLOGY

Toronto Green Development Standard	Demonstrate how the Standard will be met through your...
<p>Urban Forest: Site and Adjacent Boulevard</p> <ul style="list-style-type: none"> <input type="checkbox"/> ► All trees that are 30cm or more DBH (diameter at breast height) retained. <input type="checkbox"/> ► Each tree provided with a minimum soil volume of 15 m³ of high quality soil. <input type="checkbox"/> ► Minimum protection distances and standards for tree protection barriers during construction have been adhered to according to Specifications for Construction Near Trees <input type="checkbox"/> ► Native soil retained on site (or replaced, as necessary, with local soil of equal or better quality). <input type="checkbox"/> Non-potable watering system for all trees provided <input type="checkbox"/> Large growing, predominantly native shade trees planted to achieve 40% canopy coverage of the site at maturity 	<ul style="list-style-type: none"> • <i>Site Plan</i> • <i>Landscape Plan</i> • <i>Arborist Report</i> • <i>Tree Preservation Plan</i> • <i>Natural Heritage Impact Study</i> (where applicable)
<p>Natural Heritage: Site</p> <ul style="list-style-type: none"> <input type="checkbox"/> ► No invasive species planted on properties or streets adjacent to ravines and natural area parks. <input type="checkbox"/> Preferred: Native trees, shrubs and ground cover planted on 50% of site area (excluding building footprint) <input type="checkbox"/> Excellent: Native trees, shrubs and ground cover planted on 75% of site area (excluding building footprint) 	<ul style="list-style-type: none"> • <i>Site Plan</i> • <i>Landscape Plan</i> • <i>Arborist Report</i> • <i>Tree Preservation Plan</i> • <i>Natural Heritage Impact Study</i> (where applicable)
<p>Glass and other design features for Migratory Birds</p> <ul style="list-style-type: none"> <input type="checkbox"/> For homes adjacent to ravines and natural areas, Bird Friendly Development Guidelines adhered to 	<ul style="list-style-type: none"> • <i>Site Plan</i> • <i>Elevation Drawings</i> • <i>Perspective Drawings</i> • <i>Natural Heritage Impact Statement</i> (where applicable) • <i>Heritage Impact Statement</i> (where applicable) • <i>Plan for Public Art</i> (where applicable)
<p>Light Pollution</p> <ul style="list-style-type: none"> <input type="checkbox"/> ► No lighting directed towards the sky <input type="checkbox"/> Bird friendly Development Guidelines adhered to 	<ul style="list-style-type: none"> • <i>Site Plan</i> • <i>Landscape Plan</i> • <i>Elevation Drawings</i> • <i>Floor Plans</i>



City of Toronto Policies, Programs and Guidelines

- Toronto Official Plan: www.toronto.ca/planning/official_plan/introduction.htm
- Environmental Plan: www.toronto.ca/environment/plan_update.htm
- Toronto Building Permits: www.toronto.ca/building/building_permits.htm
- Climate Change and Air Quality Strategy: www.toronto.ca/changeisintheair/
- Water Quality (Wet Weather Flow Management Guidelines): www.toronto.ca/water/publications/index.htm
- Water Efficiency Plan: www.toronto.ca/watereff/plan.htm
- Energy Plan: www.toronto.ca/energy/plan.htm
- Solid Waste Management: www.toronto.ca/garbage/
- Urban Design Guidelines: www.toronto.ca/planning/urbdesign/guidelines.htm
- Accessibility Guidelines: www.toronto.ca/diversity/pdf/accessibility_design_guidelines.pdf
- Green Roof Policies, Performance Criteria and Incentives: www.toronto.ca/greenroofs
- Urban Forestry Policies: www.toronto.ca/trees/bylaws_policies.htm
- Tree planting: www.toronto.ca/trees/tree_planting.htm
- Bird Friendly Development Guidelines: www.toronto.ca/lightsout/guidelines.htm
- Energy Efficiency - Better Buildings Program: www.toronto.ca/energy/index.htm
- Water Efficient Fixtures and Appliances: www.toronto.ca/watereff/index.htm
- Rainwater Harvesting (downspout disconnection for low-rises): www.toronto.ca/water/protecting_quality/downspout.htm
- Air Quality and Energy Efficiency for low-rise residences: www.toronto.ca/health/2020/2020_connector_home.htm
- Toronto Atmospheric Fund: www.toronto.ca/taf/

External References

- LEED (Leadership in Energy and Environmental Design, Canada Green Building Council): www.cagbc.org
- Green Globes: www.greenglobes.com
- Model National Energy Code: www.nationalcodes.ca/mneecb/index_e.shtml
- Toronto & Region Conservation Authority (Erosion Control Guidelines): www.trca.ca
- American Society for the Testing of Materials (ASTM): www.astm.org
- American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE): www.ashrae.org
- Illuminating Engineering Society of North America (IESNA): www.iesna.org/
- Energy Star Canada: oee.nrcan.gc.ca/energystar/english/consumers/index.cfm
- Canadian Standards Association (CSA): www.csa.ca
- Canadian Institute of Transportation Engineers (CITE): www.cite7.org/Technical_Projects/sitedesignreview.htm
- R-2000: r2000.chba.ca/