FLAP

NEWS RELEASE: October 28, 2009

Toronto Becomes World's First City to Mandate Bird-Friendly Buildings

Toronto -- In a historic move, Toronto City Council passed a motion yesterday making parts of the ***Toronto Green Standard*** – which applies to all new construction in the city – mandatory. The standard, which has been voluntary until now, incorporates the ***Bird-Friendly Development Guidelines (BFDG)*** designed to eliminate migratory bird collisions with buildings both at night and in the daytime.

Beginning January 31, 2010, all new proposed low-rise non-residential, mid to high rise residential and industrial, commercial and institutional development will be required under Tier 1:

GLASS AND OTHER DESIGN FEATURES FOR MIGRATORY BIRDS: Ensure that design features minimize the risk for migratory bird collisions.

- Treat glass with a density pattern between 10-28cm apart for a minimum of the first
  10-12m of a building above grade
  OR
  Mute reflections for a minimum of the first 10-12m of a building above grade
- Ensure ground level ventilation grates have a porosity of less than 2cm X 2cm
- Where a green roof is constructed that is adjacent to glass surfaces; ensure that the glass is treated to a height of at least 12m above the level of the green roof to prevent potentially fatal window collisions.

LIGHT POLLUTION: Reduce nighttime glare and light trespass from the building and the site.

- No up-lighting from exterior light fixtures unless otherwise permitted through a Heritage designation
- Install exterior light fixtures that are shielded to prevent Glare and/or Light Trespass onto any neighbouring properties.

Councillor Glenn De Baeremaeker, who has since 2004 championed bird-friendliness for Toronto Council, also moved – which was carried unanimously – the following:

That the Toronto Green Standard report be circulated to the following organizations, and that they be requested and encouraged to adopt similar environmental standards, especially with regard to the Bird Friendly Guidelines and Light Pollution:

- **LEED**: Leadership in Energy and Environmental Design (Green Buildings Certification Institute)

continued...

- **BOMA**: Building Owners and Managers Association
- **BILD**: Building Industry Land Development Association
- **Great Lakes and St. Lawrence Cities Initiative**
- **Canada Green Building Council**
- **AMO**: Association of Municipalities of Ontario
- **FCM**: Federation of Canadian Municipalities

The Fatal Light Awareness Program (FLAP), the driving force behind ***BFDG***, is thrilled with this development. Michael Mesure, FLAP's Executive Director, says: "FLAP's years of tireless work in bird conservation has finally produced one of our most desired results, which up to now could only be dreamed of. Let us not forget: Toronto could never have become a champion in bird-friendliness without the pinnacle roles played by the stakeholders of ***Lights Out! Toronto***, **Toronto City Council**, and **City of Toronto Planning Department** staff. For this, FLAP and the birds are eternally grateful."

FLAP is a non-profit charity founded in 1993 to address the issue of bird collisions with human-built structures. In 17 years of bird rescue, FLAP volunteers have recovered over 45,000 birds from 162 species, all victims of collisions with Greater Toronto Area buildings. Forty percent of these birds were rehabilitated and released to continue their migration. If not for FLAP, likely none would have survived.

FLAP's efforts to minimize bird collisions with buildings and bring this issue to the forefront of bird conservation activity have captured the attention of leading biologists. Many now believe this to be the single greatest cause of bird mortality. Our work has convinced architects, designers, building owners, planners and politicians that radical steps are needed to be taken in Toronto and beyond.

As one of the world's major cities, Toronto has made a decision with significant implications for bird conservation world-wide. Window manufacturers, who have been reluctant to design windows and mirrored walls that appear opaque to birds and thereby prevent collisions, will now realize an opportunity to invest in bird-friendliness. Green building rating systems, like LEED and BOMA BESt, will now be compelled to incorporate bird-safe design into their ecological building criteria. What's more, light pollution, which has been a growing problem in the city for

decades, will start to diminish as we formally acknowledge the danger it poses for night-migrating birds, and, at the same time, address having the view of the stars, reducing our carbon footprint, and creating a healthier urban environment for everyone.

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For more information:
Michael Mesure, FLAP Executive Director 416-366-3527 cell: 905-649-9223
www.flap.org

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Appendix A

Toronto Green Standard: For **New** Mid to High Rise Residential and Industrial, Commercial and Institutional (ICI) Development

AIR QUALITY

Development Feature	Tier 1	Tier 2
Automobile Infrastructure Discourage single-occupancy automobile use and encourage the use of low emission vehicles	▶ Residential: If providing more than the minimum parking required under the Zoning By-law, any additional spaces must provide roughed-in conduits to allow for future electrical outlets for plug-in electric vehicles ▶ Institutional/Commercial: If providing more than the minimum parking required under the Zoning By-law, any additional spaces must be provided *only* for dedicated priority parking spaces for carpooling and for publicly accessible spaces dedicated to car-sharing.	
Cycling Infrastructure Encourage cycling as a clean air alternative	▶ Bicycle parking rates: Residential: Downtown, Centres and Central Waterfront provide 0.8 occupant bicycle parking spaces/unit and 0.2 visitor bicycle parking spaces/ unit; For the rest of the City provide at 0.6 occupant bicycle parking spaces/ unit and 0.15 visitor bicycle parking spaces/ unit; Locate at least 5% of occupant bicycle parking at grade Commercial/Institutional: Downtown, Central Waterfront and Centres, provide 0.2 occupant bicycle parking spaces per 100 m2 of GFA and the greater of 0.2 visitor bicycle parking spaces/100 m2 of GFA or 6 spaces; For the rest of the City provide 0.13 occupant bicycle parking spaces/100 m2 of GFA and provide the greater of 0.15 visitor bicycle parking spaces /100 m2 of GFA or 6 spaces Retail: Downtown, Central Waterfront and Centres, provide 0.2 occupant bicycle parking spaces per 100 m2 of GFA and the greater of 0.3 spaces/100 m2 of GFA or 6 spaces; For the rest of the City provide 0.13 occupant bicycle parking spaces/100 m2 of GFA and the greater of 0.25 spaces/100 m2 of GFA or 6 spaces Industrial: Provide occupant bicycle parking spaces equal to 5% of the number of required parking spaces ▶ Locate occupant bicycle parking in a weather protected, secure area with controlled access; or secure individual enclosures ▶ Provide visitor bicycle parking in a highly visible and easily accessible location at grade. ▶ In workplaces, provide 1 male and 1 female shower and change facility for every 30 bicycle parking spaces.	• Residential: Downtown, Centres and Central Waterfront, provide at least 1.2 bicycle parking space per unit;

*See website for Tier 1 and Tier 2 specification details for all development features: http://www.toronto.ca/planning/greendevelopment.htm

Appendix A

Toronto Green Standard: For **New** Mid to High Rise Residential and Industrial, Commercial and Institutional (ICI) Development

AIR QUALITY

Development Feature	Tier 1	Tier 2
Pedestrian Infrastructure Encourage walking as a clean air alternative for all ages and abilities	► Connect buildings on the site to off-site pedestrian paths, surface transit stops and parking areas (car and bike) ► Design onsite sidewalks, crosswalks and walkways to be continuous, universally accessible, barrier free and clearly designated. ► Outdoor waiting areas located on the site must offer protection from the weather ► Use pedestrian-specific lighting directed onto sidewalks, pathways, entrances and outdoor waiting areas ► Where a transit stop is located within a walking distance of the project site boundary, the building main entrance should have a direct pedestrian linkage to that transit stop	
Urban Heat Island Reduction: At Grade Reduce ambient surface temperatures, and provide shade for human health and comfort	► Use high-albedo surface materials for at least 50% of the site's non-roof hardscape. **OR** Use open grid pavement for at least 50% of the site's non-roof hardscape **OR** Shade within 5 years at least 50% of hardscape, including surface parking areas, walkways and other hard surfaces. **OR** Use a combination of high-albedo surface materials, open grid pavement and shade for at least 50% of the site's non-roof hardscape ► Plant large growing shade trees at the equivalent of 6-8m intervals starting from the property line: • along all street frontages, • along all open space frontages and • along all public walkways, excluding driveways and easements ► If surface parking is permitted and provided, plant shade trees at a minimum ratio of one tree planted for every five parking spaces supplied	► Use high-albedo surface materials for at least 75% of the site's non-roof hardscape. **OR** Use open grid pavement for at least 75% of the site's non-roof hardscape **OR** Shade at least 75% of hardscape, including surface parking areas, walkways and other hard surfaces. **OR** If surface parking is provided, plant internal shade trees at a minimum ratio of one tree planted for every three parking spaces supplied **OR** Install a Green wall on an exterior surface that is either free-standing or part of a building to a minimum height of one-storey. **OR** Use a combination of high-albedo surface materials, open grid pavement and shade for at least 75% of the site's non-roof hardscape

Appendix A

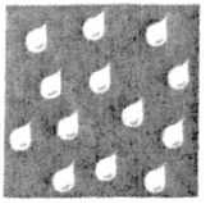
Toronto Green Standard: For **New** Mid to High Rise Residential and Industrial, Commercial and Institutional (ICI) Development

AIR QUALITY

Development Feature	Tier 1	Tier 2
Urban Heat Island Reduction: Roof Reduce ambient surface temperatures on/from rooftops	► For buildings included in the City of Toronto Green Roof By-law install a green roof to meet the requirements of the By-law ► For buildings not covered by the Green Roof By-law do one of the following for available roof space: Install green roof with 50% minimum coverage **OR** Use cool roofing materials for 100% of the roof **OR** Use a combination of both for a minimum of 75% of the roof. ►For all City owned buildings and all Agencies, Boards, Commissions, Corporations and Divisions, new buildings will provide a green roof with total area coverage equal to at least 50% of the building footprint. Cover the remaining available roof space with cool roofing materials.	

GREENHOUSE GAS EMISSIONS/ ENERGY EFFICIENCY

Development Feature	Tier 1	Tier 2
Minimum Energy Performance Minimize demand for energy through efficient building design and encourage renewable energy production	▶ Design and construct building (s) to achieve at least 25% efficiency improvement over the Model National Energy Code for Buildings (MNECB).	▶ Design and construct building (s) to achieve at least 35% efficiency improvement over the MNECB. • Install certified in-suite smart meters in all residential units
Systems Commissioning Ensure building systems function properly		▶ Commission the project using best practice commissioning



WATER QUALITY, QUANTITY AND EFFICIENCY

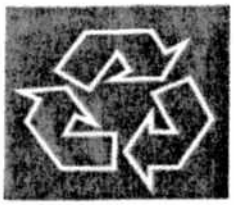
Development Feature	Tier 1	Tier 2
Construction Activity Ensure protection of water quality during construction and demolition	► Follow the *Erosion and Sediment Control Guidelines for Urban Construction* (Greater Golden Horseshoe Conservation Authorities, December 2006) during construction and demolition activities.	
Stormwater Retention (Water Balance) Minimize stormwater that leaves the site	► Retain stormwater on-site to the same level of annual volume of overland runoff allowable under pre-development conditions[1] ►Retain at least the first 5 mm from each rainfall through rainwater reuse, onsite infiltration, and evapo-transpiration **OR** Ensure that the maximum allowable annual runoff volume from the development site is no more than 50% of the total average annual rainfall depth.	• Retain 25mm from a 24 hour rainfall event for rainwater reuse, onsite infiltration and/or evapo-transpiration.
Water Quality - Stormwater Run-Off Manage and clean stormwater that leaves the site	► 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. ► Control amount of E. Coli directly entering Lake Ontario and waterfront areas as identified in the Wet Weather Flow Management Guidelines.	
Water Efficiency Reduce demand for potable water through greater efficiencies and by the use of non-potable water	►Use water efficient plant material for at least 50% of landscaped area (including vegetated roofs and walls).	► Install water fixtures and appliances that achieve at least a 30% reduction in potable water consumption for the building (not including irrigation) over the baseline water fixtures and appliances ► Where soft-landscaping exists on site, reduce potable water use for irrigation by 50%

ECOLOGY

Development Feature	Tier 1	Tier 2
Urban Forest: Tree Protection Preserve the urban forest	► Adhere to the Tree Protection Policy and standards for tree protection barriers during construction according to Specifications for Construction Near Trees ► Retain all trees that are 30cm or more DBH (diameter at breast height) in accordance with the City of Toronto Private Tree Protection By-law ►Where private property is within a Ravine Protected Area retain trees of all diameters ►Where applicable, protect and retain trees of all diameters adjacent to City of Toronto streets and roadways and City-owned Parkland	
Urban Forest: Encourage Tree Growth Enhance the urban forest	► Plant a minimum of one tree on-site for every $30m^2$ of post development site area covered by soft landscaping ► **Trees in hardscaping:** For 2 or more trees planted in primarily hardscaped areas, provide a minimum of volume of $15m^3$ of high quality soil per tree. A single tree planted in hardscape requires a minimum volume of $30\ m^3$ of soil. ► **Trees in softscaping:** Provide trees planted in softscaping with a minimum volume of $30\ m^3$ of high quality soil.[4] ► Provide a watering program for trees for the first 2 years after planting.[5]	
Natural Heritage: Site Protect, restore and enhance the natural heritage system. Protect and increase biodiversity.	► Ensure that at least 50% of vegetation species used in landscaping are native. ► Do not plant any invasive species on properties along streets abutting ravines and natural areas. ►Where a development setback from the top-of-bank of a valley, ravine or bluff or a buffer area is required by the City, all plants must be native species.	• 100% of tree species planted must be native species on properties or streets abutting ravines and natural areas • Where a setback from top-of-bank is required, the setback must be planted and all plants must be native species.
Soil Quality and Planting Conditions: Provide growing conditions to support long-term plant survival and growth	► Retain and reuse all uncontaminated on-site soil in areas not covered by the building and parking footprint or hard surfaces; **OR** Adjust or replace with soil of equal or better quality.	

ECOLOGY

Development Feature	Tier 1	Tier 2
Glass and other design features for Migratory Birds: Ensure that design features minimize the risk for migratory bird collisions.	► Treat glass with a density pattern between 10-28cm apart for a minimum of the first 10-12m of a building above grade **OR** Mute reflections for a minimum of the first 10-12m of a building above grade ► Ensure ground level ventilation grates have a porosity of less than 2cm X 2cm. ►Where a green roof is constructed that is adjacent to glass surfaces; ensure that the glass is treated to a height of at least 12m above the level of the green roof to prevent potentially fatal window collisions.	• Apply glass treatment to supplementary building and glass features on site (e.g. windbreaks, solariums, etc.)
Light Pollution Reduce nighttime glare and light trespass from the building and the site	► No up-lighting from exterior light fixtures unless otherwise permitted through a Heritage designation ►Install exterior light fixtures that are shielded to prevent Glare and/or Light Trespass onto any neighbouring properties	► Eliminate all spotlighting and rooftop vanity lighting on the building ► In Commercial/Institutional buildings, install an automatic device that reduces the outward spillage of internal light by: Reducing the input power to lighting fixtures by at least 50% between the hours of 11 PM and 5 AM. **OR** Shielding all openings in the envelope with a direct line of sight to any non-emergency light fixture between the hours of 11 PM and 5 AM.



SOLID WASTE

Development Feature	Tier 1	Tier 2
Storage and Collection of Recycling and Organic Waste Facilitate waste reduction and efficient processing	▶ Provide a dedicated area or areas within or attached to the building for the collection and storage of recycling and organic waste ▶ If a separate recycling room is required, provide an recycling room with an area of at least 10 m^2 for the first 40 residential units and 5 m^2 for each additional 40 residential units in the building	• For residential buildings, provide recycling containers with the capacity of 8 cubic yards per 100 residential units per week
Reuse of Building Materials Reduce demand for new materials and reduce waste going to landfill		• Ensure that at least 5% of a project's materials (based on value) comprise salvaged, refurbished or reused materials.
Use of Recycled Materials Reduce demand for new materials and increase market for recycled materials		• Ensure that at least 15% of a project's construction materials (based on value) are comprised of recycled content [1]
Construction and Demolition Waste Management Reduce waste going to landfill		• Recycle at least 75% of non-hazardous construction and demolition debris.

Toronto Green Standard: **New** Low-Rise Non-Residential Development

AIR QUALITY

Development Feature	Tier 1	Tier 2
Automobile Infrastructure Discourage single-occupancy automobile use and encourage the use of low emission vehicles.	► Institutional/Commercial: If providing more than the minimum parking required under the Zoning By-law, any additional spaces must be provided *only* for dedicated priority parking spaces for carpooling and for publicly accessible spaces dedicated to car-sharing.	
Cycling Infrastructure Encourage cycling as a clean air alternative	► Bicycle parking rates: Commercial/Institutional: Downtown, Central Waterfront and Centres, provide 0.2 occupant bicycle parking spaces per 100 m^2 of GFA and the greater of 0.2 visitor bicycle parking spaces/100 m^2 of GFA or 6 spaces; For the rest of the City provide 0.13 occupant bicycle parking spaces/100 m^2 of GFA and provide the greater of 0.15 visitor bicycle parking spaces /100 m^2 of GFA or 6 spaces Retail: Downtown, Central Waterfront and Centres, provide 0.2 occupant bicycle parking spaces per 100 m^2 of GFA and the greater of 0.3 spaces/100 m^2 of GFA or 6 spaces; For the rest of the City provide 0.13 occupant bicycle parking spaces/100 m^2 of GFA and the greater of 0.25 spaces/100 m^2 of GFA or 6 spaces Industrial: Provide occupant bicycle parking spaces equal to 5% of the number of required parking spaces ► Locate occupant bicycle parking in a weather protected, secure area with controlled access; or secure individual enclosures ► Provide visitor bicycle parking in a highly visible and easily accessible location at grade. ►In workplaces, provide 1 male and 1 female shower and change facility for every 30 bicycle parking spaces.	

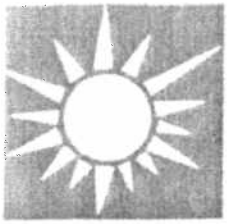
*See website for Tier 1 and Tier 2 specification details for all development features:
http://www.toronto.ca/planning/greendevelopment.htm

AIR QUALITY

Development Feature	Tier 1	Tier 2
Pedestrian Infrastructure Encourage walking as a clean air alternative for all ages and abilities	▶ Connect buildings on the site to off-site pedestrian paths, surface transit stops and parking areas (car and bike) ▶ Design onsite sidewalks, crosswalks and walkways to be continuous, universally accessible, barrier free and clearly designated. ▶ Outdoor waiting areas located on the site must offer protection from the weather ▶ Use only pedestrian-specific lighting directed onto sidewalks, pathways, entrances and outdoor waiting areas ▶ Where a transit stop is located within a walkable distance of the project site boundary, the building main entrance should have a direct pedestrian linkage to that transit stop	
Urban Heat Island Reduction: At Grade Reduce ambient surface temperatures, and provide shade for human health and comfort	▶ Use high-albedo surface materials[1] for at least 50% of the site's non-roof hardscape. **OR** Use open grid pavement for at least 50% of the site's non-roof hardscape **OR** Shade within 5 years at least 50% of hardscape, including surface parking areas, walkways and other hard surfaces.[4] **OR** Use a combination of high-albedo surface materials, open grid pavement and shade for at least 50% of the site's non-roof hardscape ▶ Plant large growing shade trees at the equivalent of 6-8m intervals starting from the property line: • along all street frontages, • along all open space frontages and • along all public walkways, excluding driveways and easements ▶ If surface parking is permitted and provided, plant shade trees at a minimum ratio of one tree planted for every five parking spaces supplied	▶ Use high-albedo surface materials for at least 75% of the site's non-roof hardscape. **OR** Use open grid pavement for at least 75% of the site's non-roof hardscape **OR** Shade at least 75% of hardscape, including surface parking areas, walkways and other hard surfaces **OR** If surface parking is provided, plant internal shade trees at a minimum ratio of one tree planted for every three parking spaces supplied **OR** Install a Green wall on an exterior surface that is either free-standing or part of a building to a minimum height of one-storey. **OR** Use a combination of high-albedo surface materials, open grid pavement and shade for at least 75% of the site's non-roof hardscape

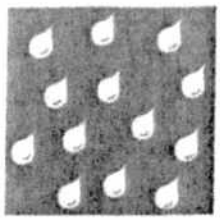
AIR QUALITY

Development Feature	Tier 1	Tier 2
Urban Heat Island Reduction: Roof Reduce ambient surface temperatures on/from rooftops	▶ For buildings included in the City of Toronto Green Roof By-law install a green roof to meet the requirements of the By-law ▶ For buildings not covered by the Green Roof By-law do one of the following for available roof space: Install green roof with 50% minimum coverage **OR** Use cool roofing materials for 100% of the roof **OR** Use a combination of both for a minimum of 75% of the roof. ▶ For all City owned buildings and all Agencies, Boards, Commissions, Corporations and Divisions, new buildings will provide a green roof with total area coverage equal to at least 50% of the building footprint. Cover the remaining available roof space with cool roofing materials.	



GREENHOUSE GAS EMISSIONS/ ENERGY EFFICIENCY

Development Feature	Tier 1	Tier 2
Minimum Energy Performance Minimize demand for energy through efficient building design and renewable energy	▶ Design and construct building to achieve at least 25% efficiency improvement over the MNECB.	▶ Design and construct building (s) to achieve at least 35% efficiency improvement over the MNECB.
Systems Commissioning Ensure building systems function properly		▶Commission the project using best practice commissioning

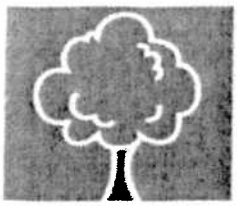


WATER QUALITY, QUANTITY AND EFFICIENCY

Development Feature	Tier 1	Tier 2
Construction Activity Ensure protection of water quality during construction and demolition	▶ Follow the *Erosion and Sediment Control Guidelines for Urban Construction* (Greater Golden Horseshoe Conservation Authorities, December 2006) during construction and demolition activities.	
Stormwater Retention (Water balance) Minimize stormwater that leaves the site	▶ Retain stormwater on-site to the same level of annual volume of overland runoff allowable under pre-development conditions ▶ Retain at least the first 5 mm from each rainfall through rainwater reuse, onsite infiltration, and evapo-transpiration **OR** Ensure that the maximum allowable annual runoff volume from the development site is no more than 50% of the total average annual rainfall depth.	• Retain 25mm from a 24 hour rainfall event for rainwater reuse, onsite infiltration and/or evapo-transpiration.
Water Quality - Stormwater Run-Off Manage and clean stormwater that leaves the site	▶ 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. ▶ Control amount of E. Coli directly entering Lake Ontario and waterfront areas.	
Water Efficiency Reduce demand for potable water through greater efficiencies and by the use of non-potable water.	▶ Use water efficient plant material for at least 50% of landscaped area (including vegetated roofs and walls).	▶ Install water fixtures and appliances that achieve at least a 30% reduction in potable water consumption for the building (not including irrigation) over the baseline water fixtures and appliances ▶ Where soft-landscaping exists on site, reduce potable water use for irrigation by 50%

ECOLOGY

Development Feature	Tier 1	Tier 2
Urban Forest: Tree Protection Preserve the urban forest	► Adhere to the Tree Protection Policy and standards for tree protection barriers during construction according to Specifications for Construction Near Trees ► Retain all trees that are 30cm or more DBH (diameter at breast height) in accordance with the City of Toronto Private Tree Protection By-law ► Where private property is within a Ravine Protected Area retain trees of all diameters ► Where applicable, protect and retain trees of all diameters adjacent to City of Toronto streets and roadways and City-owned Parkland	
Urban Forest: Encourage Tree Growth Enhance the urban forest	► Plant a minimum of one tree on-site for every $30m^2$ of post development site area covered by soft landscaping ► **Trees in hardscaping:** For 2 or more trees planted in primarily hardscaped areas, provide a minimum of volume of $15m^3$ of high quality soil per tree. A single tree planted in hardscape requires a minimum volume of $30\ m^3$ of soil. ► **Trees in softscaping:** Provide trees planted in softscaping with a minimum volume of $30\ m^3$ of high quality soil. ► Provide a watering program for trees for the first 2 years after planting.	
Natural Heritage: Site Protect, restore and enhance the natural heritage system. Protect and increase biodiversity.	► Ensure that at least 50% of vegetation species used in landscaping are native ► Do not plant any invasive species on properties along streets abutting ravines and natural areas. ► Where a development setback from the top-of-bank of a valley, ravine or bluff or a buffer area is required by the City, all plants must be native species.	• 100% of tree species planted must be native species on properties or streets abutting ravines and natural areas • Where a setback from top-of-bank is required, the setback must be planted and all plants must be native species.



ECOLOGY

Development Feature	Tier 1	Tier 2
Soil Quality and Planting Conditions: Provide growing conditions to support long-term plant survival and growth	▶ Retain and reuse all uncontaminated on-site soil in areas not covered by the building and parking footprint or hard surfaces; **OR** Adjust or replace with soil of equal or better quality.	
Glass and other design features for Migratory Birds: Ensure that design features minimize the risk for migratory bird collisions.	▶ Treat glass with a density pattern between 10-28cm apart for a minimum of the first 10-12m of a building above grade **OR** Mute reflections for a minimum of the first 10-12m of a building above grade ▶ Ensure ground level ventilation grates have a porosity of less than 2cm X 2cm. ▶Where a green roof is constructed that is adjacent to glass surfaces; ensure that the glass is treated to a height of at least 12m above the level of the green roof to prevent potentially fatal window collisions.	• Apply glass treatment to supplementary building and glass features on site (e.g. windbreaks, solariums, etc.)
Light Pollution Reduce nighttime light trespass from the building and the site	▶ No up-lighting from exterior light fixtures unless otherwise permitted through a Heritage designation ▶Install exterior light fixtures that are shielded to prevent Glare and/or Light Trespass onto any neighbouring properties	▶Eliminate all spotlighting and rooftop vanity lighting on the building ▶In Commercial/Institutional buildings, install an automatic device that reduces the outward spillage of internal light by: Reducing the input power to lighting fixtures by at least 50% between the hours of 11 PM and 5 AM. **OR** Shielding all openings in the envelope with a direct line of sight to any non-emergency light fixture between the hours of 11 PM and 5 AM.

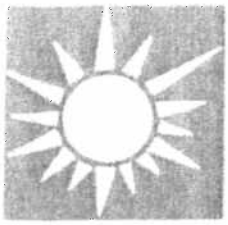
SOLID WASTE

Development Feature	Tier 1	Tier 2
Reuse of Building Materials Reduce demand for new materials and reduce waste going to landfill		• Ensure that at least 5% of a project's materials (based on value) comprise salvaged, refurbished or reused materials.
Use of Recycled Materials Reduce demand for new materials and increase market for recycled materials		• Ensure that at least 15% of a project's construction materials (based on value) are comprised of recycled content
Construction and Demolition Waste Management Reduce waste going to landfill		• Recycle at least 75% of non-hazardous construction and demolition debris.

AIR QUALITY

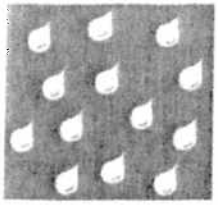
Development Feature	Tier 1	Tier 2
Pedestrian Infrastructure Encourage walking as a clean air altemative	▶ Provide grading and surface treatment, in accordance with the Toronto Accessibility Design Guidelines	
Urban Heat Island Reduction: At Grade Reduce ambient surface temperatures, and provide shade for human health and comfort.	▶ Use high-albedo surface materials for at least 50% of the site's non-roof hardscape. **OR** Use open grid pavement for at least 50% of the site's non-roof hardscape[3] **OR** Shade within 5 years at least 50% of hardscape, including driveways, walkways and other hard surfaces. **OR** Use a combination of high-albedo surface materials, open grid pavement and shade for at least 50% of the site's non-roof hardscape	▶ Use high-albedo surface materials for at least 75% of the site's non-roof hardscape. **OR** Use open grid pavement for at least 75% of the site's non-roof hardscape **OR** Shade at least 75% of hardscape, including driveways, walkways and other hard surfaces. **OR** Install a Green wall on an exterior surface that is either free-standing or part of a building to a minimum height of one-storey. **OR** Use a combination of high-albedo surface materials, open grid pavement and shade for at least 75% of the site's non-roof hardscape
Urban Heat Island Reduction: Roof Reduce ambient surface temperatures on/from rooftops	▶ Use cool roofing materials for 100% of the available roof space. **OR** Use a combination of a green roof and cool roofing materials for 100% of the available roof space.	

*See website for Tier 1 and Tier 2 specification details for all development features:
http://www.toronto.ca/planning/greendevelopment.htm



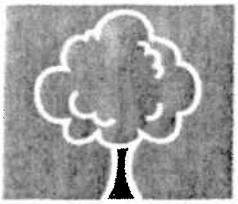
GREENHOUSE GAS EMISSIONS/ ENERGY EFFICIENCY

Development Feature	Tier 1	Tier 2
Minimum Energy Performance Minimize demand for energy through efficient building design	▶ Design and construct building (s) to achieve at least EnerGuide 80 energy efficiency rating	▶Design and construct building(s) to achieve at least EnerGuide 85 energy efficiency rating ▶Where supplied, for each unit provide ENERGY STAR compliant refrigerators and dishwashers
Renewable Energy Reduce demand for energy from the grid and encourage renewable energy production		• Use on-site renewable energy technologies to supply at least 5% of the building's total energy use from any one source (i.e. natural gas or electricity)
Water Heating Optimize performance of water heating system		▶Install an ENERGY STAR compliant water heater **OR** Tankless water heater.



WATER QUALITY, QUANTITY AND EFFICIENCY

Development Feature	Tier 1	Tier 2
Construction Activity Ensure protection of water quality during construction and demolition	▶ Follow the *Erosion and Sediment Control Guidelines for Urban Construction* (Greater Golden Horseshoe Conservation Authorities, December 2006) during construction and demolition activities.	
Stormwater Retention (Water balance) Minimize stormwater that leaves the site	▶ For sites greater than 0.1 hectares, retain stormwater on-site to the same level of annual volume of overland runoff allowable under pre-development conditions ▶ For sites greater than 0.1 hectares, retain at least the first 5 mm from each rainfall through rainwater reuse, onsite infiltration, and evapotranspiration **OR** Ensure that the maximum allowable annual runoff volume from the development site is no more than 50% of the total average annual rainfall depth.	• Retain at least the first 5 mm from each rainfall through rainwater reuse, onsite infiltration, and evapotranspiration
Stormwater Run-Off Manage and clean stormwater that leaves the site	▶ Remove 80% of total suspended solids on an annual loading basis from all runoff leaving the site based on the post-development level of imperviousness. ▶ Control amount of E. Coli directly entering Lake Ontario and waterfront areas.	
Water Efficiency Reduce demand for potable water through greater efficiencies and by the use of non-potable water.	▶ Use water efficient plant material for at least 50% of landscaped area (including vegetated roofs and walls).	▶ Ensure that 75% of water fixtures and appliances installed meet or exceed the following standards: • toilets less than 6.0 L or dual flush toilets; • faucets (5.7LPM); • showers (6.6 LPM); • dishwashers (Energy Star models only); • front-loading washing machines. ▶ Where soft-landscaping exists on site, reduce potable water use for irrigation by 50%



ECOLOGY

Development Feature	Tier 1	Tier 2
Urban Forest: Tree Protection Preserve the urban forest	▶ Adhere to the Tree Protection Policy and standards for tree protection barriers during construction according to Specifications for Construction Near Trees ▶ Retain all trees that are 30cm or more DBH (diameter at breast height) in accordance with the City of Toronto Private Tree Protection By-law ▶ Where private property is within a Ravine Protected Area retain trees of all diameters ▶ Where applicable, protect and retain trees of all diameters adjacent to City of Toronto streets and roadways and City-owned Parkland	
Urban Forest: Encourage Tree Growth Enhance the urban forest	▶ Plant at least 1 large growing shade tree per residential lot. ▶ **Trees in hardscaping:** For 2 or more trees planted in primarily hardscaped areas, provide a minimum of volume of 15m^3 of high quality soil per tree. A single tree planted in hardscape requires a minimum volume of 30 m^3 of soil. ▶ **Trees in softscaping:** Provide trees planted in soft landscaping with a minimum volume of 30 m^3 of high quality soil. ▶ Provide a watering program for trees for the first 2 years after planting.	
Natural Heritage: Site Protect and enhance natural habitat. Protect and increase biodiversity.	▶ Ensure that at least 50% of vegetation species used in landscaping are native. ▶ Do not plant any invasive species on properties along streets abutting ravines and natural areas. ▶ Where a development setback from the top-of-bank of a valley, ravine or bluff or a buffer area is required by the City, all plants must be native species.	• 100% of tree species planted must be native species on properties or streets abutting ravines and natural areas • Where a setback from top-of-bank is required, the setback must be planted and all plants must be native species.

ECOLOGY

Development Feature	Tier 1	Tier 2
Soil Quality and Planting Conditions Provide growing conditions to support long-term plant survival and growth	▶ Protect soils from compaction during construction. ▶ Retain and reuse soil on site in all areas not covered by the building footprint or required hard surfaces, or adjust or replace with soil of equal or better quality.	
Glass and other design features for Migratory Birds: Ensure that design features minimize the risk for migratory bird collisions.	▶ Where abutting ravines or natural areas: Treat glass with a density pattern between 10-28cm apart for a minimum of the first 10-12m of a building above grade or the mature height of adjacent vegetation **OR** Mute reflections for a minimum of the first 12m of a building above grade. ▶ Ensure ground level ventilation grates have a porosity of less than 2cm X 2cm.	• Apply glass treatment to supplementary building and glass features on site (e.g. windbreaks, solariums, etc.)
Light Pollution Reduce nighttime glare and light trespass from the building and the site	▶ No up-lighting from exterior light fixtures ▶ Install exterior light fixtures that are shielded to prevent Glare and/or Light Trespass onto any neighbouring properties	

SOLID WASTE

Development Feature	Tier 1	Tier 2
Construction Waste Management Reduce waste going to landfill		• Recycle at least 75% of non-hazardous construction and demolition debris
Reuse of Building Materials Reduce waste going to landfill and reduce demand for new materials		• At least 5% of a project's materials (based on value) shall comprise salvaged, refurbished or reused materials.
Use of Recycled Materials Reduce demand for new materials and increase market for recycling		• At least 15% of a project's construction materials (based on value) shall comprise recycled content.