



ENVIRONMENTAL | DEFENCE



Greening
Canada's
Buildings

Green Building Benchmarks

May 2008

Land - Land Use and Ecology

<p>Land Use Planning</p> <p><i>Do instruments exist to ensure that land use directs development to minimize the impact on undeveloped greenspace?</i></p> <p>Examples:</p> <ul style="list-style-type: none">• Greenfield protection• Development on greyfields and brownfields• Developing on lands with low ecological value• Minimum density requirement	<input type="checkbox"/>
<p>Ecological value of site</p> <p><i>Do instruments ensure the protection of the ecological function of the development site?</i></p> <p>Examples:</p> <ul style="list-style-type: none">• Maintain natural habitat• Protect habitat & wetlands• Enhance ecological value• Limit turf coverage• Flood management plan	<input type="checkbox"/>
<p>Site development</p> <p><i>Do instruments exist to reduce or regulate environmental disturbances on the development site?</i></p> <p>Examples:</p> <ul style="list-style-type: none">• Minimum site disturbance• Sediment and erosion control• Heat island effect• Hardscape (roofs/shading)• Limit building footprint	<input type="checkbox"/>
<p>Infrastructure</p> <p><i>Do instruments exist that promote sustainable use of existing infrastructure?</i></p> <p>Examples:</p> <ul style="list-style-type: none">• Existing water• Sewer & roads• Public transit• Local amenities• Parking spaces• Cycling storage• Greenspace	<input type="checkbox"/>

Water – Use, Conservation and Runoff

<p>Water use performance</p> <p><i>What instruments exist to promote the overall water use performance of a building during the design, construction and operational stages?</i></p> <p>Examples:</p> <ul style="list-style-type: none">• Total external potable water use• Total internal potable water use• Water metering	<input type="checkbox"/>
<p>Storm water</p> <p><i>Do instruments exist that address stormwater runoff from site?</i></p> <p>Examples:</p> <ul style="list-style-type: none">• Maintain existing stormwater flows• Stormwater management• Rainwater collection• Limit permeable surfaces	<input type="checkbox"/>
<p>Fixtures</p> <p><i>Do instruments exist that promote water efficiency in fixtures?</i></p> <p>Examples:</p> <ul style="list-style-type: none">• Toilets, faucets, showerheads, & urinals• Occupancy sensors• Specialty items (pools, spas and fountains)	<input type="checkbox"/>
<p>Appliances</p> <p><i>Do instruments exist that promote water efficiency in appliances?</i></p> <p>Examples:</p> <ul style="list-style-type: none">• Energy Star clothes washer and dishwasher	<input type="checkbox"/>
<p>Irrigation</p> <p><i>Do Instruments exist that promote water efficiency in irrigation on development site?</i></p> <p>Examples:</p> <ul style="list-style-type: none">• Drought tolerant plants• Minimal topsoil depths• Watering restrictions or automatic irrigation systems	<input type="checkbox"/>

Health – Air Quality and Living Space

Air quality <i>Do instruments exist that establish minimum indoor air quality levels?</i> Examples: <ul style="list-style-type: none">• Minimum ambient air quality• Filters on HVAC	<input type="checkbox"/>
Low emitting materials <i>Do instruments exist that encourage better indoor air quality through the use of low emitting materials?</i> Examples: <ul style="list-style-type: none">• Paints and adhesives• Insulation• Subflooring• Particle board• Reduced carpeting• No vinyl sheet flooring	<input type="checkbox"/>
Drinking Water Quality <i>Are there instruments to ensure the quality of drinking water?</i>	<input type="checkbox"/>
Indoor Environment Quality <i>Do instruments exist that address the quality of the indoor environment?</i> Examples: <ul style="list-style-type: none">• Programmable thermostat• Reduce sound pollution• Reduce light pollution• Set minimum occupant daylight exposure	<input type="checkbox"/>

Resources and Waste – Production and Recycling

<p>Construction waste</p> <p><i>Do instruments exist to reduce waste generated from construction?</i></p> <p>Examples:</p> <ul style="list-style-type: none">• Construction waste management plan• Reuse construction material onsite• Recycled site material	<input type="checkbox"/>
<p>Resource use</p> <p><i>Do Instruments exist to ensure the efficiency use of resources?</i></p> <p>Examples:</p> <ul style="list-style-type: none">• Use of recycled materials• Regionally extracted materials• Responsible source building and finishing elements• Reclaimed or certified wood	<input type="checkbox"/>
<p>Recycling</p> <p><i>Do instruments exist to ensure proper waste management in operational phase?</i></p> <p>Examples:</p> <ul style="list-style-type: none">• Storage space for recycling• Mandatory recycling programs	<input type="checkbox"/>

Air – Pollution and Emissions

<p>Total Energy Use</p> <p><i>Do instruments exist that address the total annual energy consumption of the building?</i></p> <p>Examples:</p> <ul style="list-style-type: none">• Total annual energy consumption• Dwelling emissions rate score (kg/m²/yr)• Energy metering• Optimal solar orientation	<input type="checkbox"/>
<p>Building shell/Insulation</p> <p><i>Do instruments exist that encourage energy efficiency through the building envelope?</i></p> <p>Examples:</p> <ul style="list-style-type: none">• Minimum insulation requirements• Insulated attached garage• Window and door performance• Insulation under basement slab and basement walls• Attic weather stripped and insulated	<input type="checkbox"/>
<p>Appliances</p> <p><i>Do instruments exist that encourage the use of high efficient appliances?</i></p> <p>Examples: Energy Star refrigerator, hot water heater, range, dishwasher, cloths washer/dryer & HVAC</p>	<input type="checkbox"/>
<p>Lighting</p> <p><i>Do instruments exist that encourage the use of high efficient lighting?</i></p> <p>Examples:</p> <ul style="list-style-type: none">• Energy Star lighting• Motion sensor• Centralized controls	<input type="checkbox"/>
<p>Energy Generation</p> <p><i>Do instruments exist to facilitate the implementation of on-site energy generation?</i></p> <p>Examples:</p> <ul style="list-style-type: none">• Active/passive solar water heaters• Photovoltaic electricity generation• Geothermal heat generation	<input type="checkbox"/>

Construction Commissioning <i>Do instruments exist to ensure proper installation and commissioning of building systems?</i> Examples: Certified technicians	<input type="checkbox"/>
Monitoring <i>Do instruments exist to ensure proper monitoring of systems throughout the lifecycle of the building?</i>	<input type="checkbox"/>