

# Pickering Integrated Sustainable Design Standards

## Low-Rise Residential Checklist



## Instructions

The Pickering Integrated Sustainable Design Standards (ISDS) for low-rise residential applies to development less than 4 **storeys** with a minimum of 5 dwelling units. Tier 1 performance measures are required by the City of Pickering and must be included as part of your complete development application. Tier 2 performance is encouraged, but optional.

Words and terms identified in **bold** in the Performance Criteria and Documentation cells are defined further in the Glossary of the User Guide.

Performance criteria apply to all building types except where specified.

### Applicant Information:

Applicant/Agent:

Name (First, Last Name):

Telephone Number:

Email:

Address of Subject Land (Street Number and Name): 1884 Liverpool Road, 1885 Glendale Drive

Registered Owner (First, Last Name):

### Project Information:

Project Name:

Date Checklist Completed (yyyy-mm-dd):

Is this checklist revised from an earlier submission (Yes/No):

Gross Floor Area (square metres): 3,184

Number of Storeys: 3

Non Residential Gross Floor Area (square metres): 0

Proposal Description (narrative of your project):

A new 3-storey (up to 10.7 metre), 3,184 square metre GFA, 51-unit stacked townhouse development, including 149.4 square metres of outdoor amenity space, 32 bicycle parking spaces, and 77 below grade vehicle parking spaces.

## Education

Performance Measures		Performance Criteria			For Submission		
Number	Development Feature	1 Mandatory	Met	Tier 2 Optional	Met	Documentation	Comments
<b>E1</b>	<b>Resident Education</b>	Provide a Resident <b>Education Information Package</b> (hardcopy or digital through website link) to residents that explains the use and maintenance of sustainable building features as well as sustainable lifestyle practices.	<input checked="" type="checkbox"/>	Meet Tier 1 and post signage and other education materials onsite to educate residents and visitors of sustainability features.	<input type="checkbox"/>	<input type="checkbox"/> Educational package or other educational materials demonstrating compliance.	Will be provided at the site plan stage

## Energy & Resilience

Performance Measures		Performance Criteria			For Submission		
Number	Development Feature	Tier 1 Mandatory	Met	Tier 2 Optional	Met	Documentation	Comments
ER1	<b>Urban Heat Island Reduction</b>	Roof: Install cool roof (high albedo/light coloured materials with a <b>Solar Reflective Index (SRI)</b> of 78 or over (for low-sloped roofs <2:12)) or 29 (for steep-sloped roofs >2:12) for 100% of the <b>available roof area</b> .  or  Install solar PV for 50% of the <b>available roof area</b> .	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/> Roof plan indicating heat island reduction measures, including the SRI values(s) of roof materials.	<b>This will be confirmed at the site plan stage</b>

Performance Measures		Performance Criteria			For Submission		
Number	Development Feature	Tier 1 Mandatory	Met	Tier 2 Optional	Met	Documentation	Comments
		<p>Non-Roof: Use one or a combination of the following strategies to treat at least 50% of the site's hardscape:</p> <ul style="list-style-type: none"> <li>• High-albedo paving materials with an initial solar reflectance of at least 0.33 or SRI of 29;</li> <li>• Open grid pavement with at least 50% perviousness;</li> <li>• Shade from existing tree canopy or new tree canopy within 10 years of landscape installation;</li> <li>• 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;</li> <li>• Shade from structures with energy generation.</li> </ul>	<input checked="" type="checkbox"/>	<p>Non-Roof: Use one or a combination of the following strategies to treat at least 75% of the site's hardscape:</p> <ul style="list-style-type: none"> <li>• High-albedo paving materials with an initial solar reflectance of at least 0.33 or SRI of 29;</li> <li>• Open grid pavement with at least 50% perviousness;</li> <li>• Shade from existing tree canopy or new tree canopy within 10 years of landscape installation;</li> <li>• 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;</li> <li>• Shade from structures with energy generation.</li> </ul>	<input type="checkbox"/>	<p><input checked="" type="checkbox"/> Report, Plan(s), or other documentation indicating the heat island reduction measures.</p>	<p>Shade from new trees will be used to treat hardscape. Further options will be explored at the site plan stage</p>

Performance Measures		Performance Criteria			For Submission		
Number	Development Feature	Tier 1 Mandatory	Met	Tier 2 Optional	Met	Documentation	Comments
ER2	<b>Building Energy Performance and Emissions</b>	Design and construct all buildings to achieve or exceed the <b>Energy Star®</b> for New Homes, latest version, or demonstrated modeled equivalent (e.g., Better Than Code ® using <b>Home Energy Rating System (HERS)</b> ).  or Design and construct all buildings to meet or exceed the <b>Energy Performance Emissions' Total Energy Use Intensity (TEUI), Thermal Energy Demand Intensity (TEDI) and GHG Emission Intensity (GHGI)</b> targets.	<input checked="" type="checkbox"/>	Design and construct all buildings to achieve a minimum energy performance level of 25% or better than the <b>Ontario Building Code</b> requirements in force at the time of application.  or Design and construct all buildings to meet or exceed the <b>Energy Performance Emissions' Total Energy Use Intensity (TEUI), Thermal Energy Demand Intensity (TEDI) and GHG Emission Intensity (GHGI)</b> targets.	<input type="checkbox"/>	<input type="checkbox"/> Energy Modelling Report or other documentation demonstrating compliance with the target standard.	Will be done at the site plan stage
ER3	<b>Renewable Energy</b>	Design and construct all buildings to be <b>solar ready</b> .  or Incorporate web-based <b>Home Energy Management Systems (HEMS)</b> .	<input type="checkbox"/>	Incorporate on-site <b>renewable energy</b> sources of power generation to meet 5% or more of the building energy needs.  or Incorporate <b>peak shaving</b> devices like battery storage.	<input type="checkbox"/>	<input type="checkbox"/> Drawings, plans, or other documentation demonstrating compliance.	Will be explored at the site plan stage

Performance Measures		Performance Criteria			For Submission		
Number	Development Feature	Tier 1 Mandatory	Met	Tier 2 Optional	Met	Documentation	Comments
<b>ER4</b>	<b>Building Resilience</b>	Implement at least two of the primary measures from the <b>Durham Region Climate Resilience Standard for New Houses</b> additional to those required by this Standard.	<input type="checkbox"/>	Implement at least two of the secondary measures from the <b>Durham Region Climate Resilience Standard for New Houses</b> .	<input type="checkbox"/>	<input type="checkbox"/> Drawings, plans, or other documentation demonstrating that the project incorporates resilient measures.	<i>Will be explored at the site plan stage</i>

## Neighbourhood

Performance Measures		Performance Criteria			For Submission		
Number	Development Feature	Tier 1 Mandatory	Met	Tier 2 Optional	Met	Documentation	Comments
N1	<b>Private Pedestrian Walkways</b>	Provide on-site private pedestrian walkways from buildings to features outside of the development site, such as public sidewalks, multi-use trails, transit stops and adjacent buildings.  All connections must be AODA compliant.	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/> Site plan(s) highlighting on-site walkways.	
N2	<b>Private Play Areas &amp; Structures</b>	All private play areas and play structures must be <b>AODA</b> compliant.	<input type="checkbox"/>			<input type="checkbox"/> Site plan(s) highlighting play areas with accessibility features.	Will be explored at the site plan stage
N3	<b>Community Safety</b>	Design the project using <b>CPTED</b> principles to create a safe space.	<input checked="" type="checkbox"/>			<input type="checkbox"/> or Report demonstrating community safety strategies.	

## Land & Nature

Performance Measures		Performance Criteria			For Submission		
Number	Development Feature	Tier 1 Mandatory	Met	Tier 2 Optional	Met	Documentation	Comments
LN1	<b>Topsoil</b>	The topsoil layer should have a minimum depth of 30 cm for all turf areas, and a minimum depth of 45 cm of high-quality topsoil for all planting beds and scarify hard packed subsoil in all soft landscape areas prior to placement of topsoil.	<input checked="" type="checkbox"/>	Meet Tier 1 and install a minimum depth of 60 cm of high-quality topsoil for all planting beds.	<input type="checkbox"/>	<input type="checkbox"/> Landscape Plan(s) and/or other documentation indicating applicable soil characteristics (depth, pH, organic matter content) and planting depth.	Soil volume plan will be provided at SPA
LN2	<b>Light Pollution Reduction</b>	All exterior lighting to be <b>Dark Sky Compliant</b> with the exemption of street lighting, which is governed by the <b>City's Street Lighting Requirements</b> . If a Dark Sky Fixture Seal of Approval is not available, fixtures must be full cut-off and with a colour temperature rating of 3000K or less.	<input checked="" type="checkbox"/>	Meet Tier 1 and install motion sensors or timers for outdoor lights to maintain security without excessively lighting the building's exterior.	<input type="checkbox"/>	<input type="checkbox"/> Exterior Lighting Plan, Schedule, or other documentation indicating lighting type, orientation and location.	All lighting will be dark sky compliant. A lighting plan will be submitted at the site plan stage
LN3	<b>Native and Non-Invasive Species</b>	Plant 50% <b>native plant species</b> , including trees, shrubs and herbaceous plants preferably drought-tolerant and pollinator-friendly outside of the buffer area and within the development limit. Remaining non-native species must be non-invasive.	<input checked="" type="checkbox"/>	Plant 75% or greater with <b>native plant species</b> .	<input type="checkbox"/>	<input type="checkbox"/> Landscape Plan(s), drawings or other documentation demonstrating the percentage of plant species, preferably are drought-tolerant and pollinator-friendly.	Planting list will be provided at SPA

Performance Measures		Performance Criteria			For Submission		
Number	Development Feature	Tier 1 Mandatory	Met	Tier 2 Optional	Met	Documentation	Comments
LN4	<b>Vegetated Buffers</b>	The disturbed buffer area between the development limit and a <b>key natural heritage feature</b> shall be restored with 100% <b>native plant species</b> , including trees, shrubs and herbaceous plants, preferably drought- tolerant.	<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/> Landscape Plan(s), drawings or other documentation demonstrating that plant species are 100% native, preferably drought-tolerant.	There are no natural heritage features on site
LN5	<b>Tree Preservation and Removal Compensation</b>	Plant 60 mm <b>caliper</b> deciduous trees and 1.8 m high coniferous trees in accordance with the <b>tree compensation requirements</b> . This applies to the removal of any existing trees that are 15 cm or more in diameter at breast height.	<input checked="" type="checkbox"/>	Provide a site design solution that includes the preservation and protection of existing mature trees and a net gain of tree canopy through additional tree plantings in accordance with the <b>tree compensation requirements</b> .	<input type="checkbox"/>	<input type="checkbox"/> A <b>Tree Inventory Report and Preservation Plan</b> that includes all trees on the development site and those on adjoining lands that may be affected by the proposed construction activities.	Will be confirmed at SPA
LN6	<b>Healthy Street Trees</b>	Plant 60 mm <b>caliper</b> deciduous trees on both sides of private streets and in public boulevards at an interval rate of 1 tree per 8 m of street frontage or spaced appropriately having regard to site conditions;  <b>and</b> Design, implement, and pay for a watering and fertilizing program for at least the first 2 years of planting.	<input checked="" type="checkbox"/>	Meet Tier 1 and provide 30 m <sup>3</sup> high quality soil for street trees with a minimum topsoil depth of 75 cm.	<input type="checkbox"/>	<input type="checkbox"/> Tree Planting Plan(s), drawings or other documentation demonstrating species, and quantity for each planting area.  <input type="checkbox"/> Watering program methods and watering schedule.	Will be confirmed at SPA

Performance Measures		Performance Criteria			For Submission		
Number	Development Feature	Tier 1 Mandatory	Met	Tier 2 Optional	Met	Documentation	Comments
LN7	<b>Natural Heritage Features and Open Space Enhancement</b>	<p>Protect <b>key natural heritage features</b> and <b>key hydrologic features</b> on site, including associated setbacks/buffers;</p> <p><b>or</b></p> <p>Where all alternatives to protect and enhance <b>key natural heritage features</b> and open spaces on site have been evaluated and determined to not be feasible, provide compensation for the loss of ecosystem functions due to development impacts.</p>	<input checked="" type="checkbox"/>	<p>Protect and enhance <b>key natural heritage features</b> and <b>key hydrologic features</b> on site and</p> <ul style="list-style-type: none"> <li>• Create new natural heritage features on or off-site;</li> </ul> <p><b>or</b></p> <ul style="list-style-type: none"> <li>• Restore and enhance connectivity among natural heritage features on or off-site.</li> </ul>	<input type="checkbox"/>	<input checked="" type="checkbox"/> Landscape Plan(s), drawing(s) or other documentation highlighting implemented features(s) and/or an Ecosystem Compensation Report where required.	<b>There are no natural heritage features on site</b>

## Transportation

Performance Measures		Performance Criteria			For Submission		
Number	Development Feature	Tier 1 Mandatory	Met	Tier 2 Optional	Met	Documentation	Comments
T1	<b>Electric Vehicles including plug-in hybrid vehicles</b>	Require 40% <b>EV Rough-in</b> & 10% <b>EV Ready</b> charging infrastructure or equivalent <b>electric vehicle energy management systems</b> (load sharing/circuit sharing) capable of providing Level 2 or higher charging for the resident parking spaces;  <b>or</b>  Require <b>EV Ready</b> charging infrastructure capable of providing Level 2 charging or higher for 50% of the resident parking spaces.	<input checked="" type="checkbox"/>	Require <b>EV Ready</b> charging infrastructure capable of providing Level 2 charging or higher for 100% of the resident parking spaces.	<input type="checkbox"/>	<input checked="" type="checkbox"/> <b>Electric Vehicle (EV) Charging Infrastructure Plan</b> , drawings or other documentation.	

## Waste Management

Performance Measures		Performance Criteria			For Submission		
Number	Development Feature	Tier 1 Mandatory	Met	Tier 2 Optional	Met	Documentation	Comments
WM1	<b>Construction Waste Reduction</b>	Divert 50% or more of all non-hazardous construction, demolition, and land clearing waste from landfill.	<input type="checkbox"/>	Divert 75% or more of all non-hazardous construction, demolition, and land clearing waste from landfill.	<input type="checkbox"/>	<input type="checkbox"/> Commitment Letter to divert waste through a third-party hauler.	Will be explored at the site plan stage
WM2	<b>On-Site Storage</b>	For low rise multi-storey residential buildings, design the site so that all individual units can be served by curbside collection; and allocate space for separate recyclables, organics and garbage containers inside each dwelling unit.	<input checked="" type="checkbox"/>			<input type="checkbox"/> Drawing(s) demonstrating compliance.	Waste room has been designed as per Durham Region Guidelines.

**Water**

Performance Measures		Performance Criteria			For Submission		
Number	Development Feature	Tier 1 Mandatory	Met	Tier 2 Optional	Met	Documentation	Comments
<b>W1</b>	<b>Stormwater Management</b>	<p>Achieve a level one/enhanced stormwater treatment for all stormwater, and achieve runoff reduction of a minimum 5 mm of rainfall depth;</p> <p><b>and</b></p> <p>Demonstrate that the applicable groundwater recharge targets are met based on site-specific water balance/budget studies, in accordance with the <b>CTC Source Protection Plan</b>;</p> <p><b>and</b></p> <p>Provide an enhanced level of protection for water quality through the long-term average removal of 80% of Total Suspended Solids (TSS) on an annual loading basis from all runoff leaving the site, in accordance with the <b>City of Pickering Stormwater Management Design Guidelines</b>.</p>	<input type="checkbox"/>	<p>In a manner best replicating natural site hydrology processes, manage on-site runoff using at least two of the following low-impact development (LID) and green infrastructure techniques:</p> <ul style="list-style-type: none"> <li>• permeable pavement</li> <li>• bioswales</li> <li>• soakaways</li> <li>• rain gardens</li> <li>• filtered strips</li> <li>• infiltration trenches</li> </ul> <p><b>or</b></p> <p>Achieve post-development runoff reductions to no more than 50% of annual precipitation (approx. 10 mm of rainfall event retention from all site surfaces) through infiltration, evapotranspiration, water harvesting and reuse.</p>	<input type="checkbox"/>	<input type="checkbox"/> Stormwater Management Report, Plan(s), and drawing(s) demonstrating compliance.	Will be explored at the site plan stage

Performance Measures		Performance Criteria			For Submission		
Number	Development Feature	Tier 1 Mandatory	Met	Tier 2 Optional	Met	Documentation	Comments
<b>W2</b>	<b>Water Efficiency</b>	Implement two of the following: <ul style="list-style-type: none"> <li>• Use <b>WaterSense®</b> labeled water fixtures.</li> <li>• Use a non-potable watering system for irrigation purposes.</li> <li>• Install a drain water heater recovery unit.</li> <li>• Install a hot water recirculation pump with an integrated adjustable timer or auto-adaptive controls to shut off during periods of low/no hot water use.</li> <li>• Use <b>Energy Recovery Ventilation</b> in lieu of conventional humidifier.</li> </ul>	<input type="checkbox"/>	Implement three of the following: <ul style="list-style-type: none"> <li>• Use <b>WaterSense®</b> water fixtures that obtain a minimum 30% better than the <b>Ontario Building Code</b> baseline.</li> <li>• Use a non-potable watering system for irrigation purposes.</li> <li>• Design 25% of the dwelling units/buildings to be "<b>greywater ready</b>" (i.e., plumbing and infrastructure roughed in, adequate utility room space).</li> <li>• Install a hot water recirculation pump with an integrated adjustable timer or auto-adaptive controls to shut off during periods of low/no hot water use.</li> <li>• Use Energy Recovery Ventilation in lieu of conventional humidifier.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/> Plan(s), drawing(s), or other documentation demonstrating implementation of target element(s).  <input type="checkbox"/> Plumbing fixtures specifications or other documentation demonstrating <b>WaterSense®</b> labelling and flush/flow rates.  <b>or</b> <input type="checkbox"/> Third party verification of water reductions with systems e.g., <b>Home Energy Rating System H2O</b> or <b>WaterSense®</b> labeling.	Will be explored at the site plan stage