

Stage of Development:  Rezoning  SPA  Date Prepared March 28/13

**Green Development Standard Checklist: AIR**

Project Name & Address: Wesley Mimico United Church, 2 Station Road, Etobicoke, M8V 2P9

Design Professional Team Leader: Robert Reimers Architect  
23 Wilson Street, Uxbridge, Ontario L9P 1H8 Telephone: 905-862-3649 Email: reimersoffice@powergate.ca

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<p>1 Local Materials</p> <p><input checked="" 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>	<ul style="list-style-type: none"><li>• will enquire at contractor pre-qualification stage, their experience</li><li>• will include actions in specifications water based sprinkler system will be used.</li></ul>
<p>2 Pedestrian Infrastructure</p> <p><input checked="" 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"><li>• Site and Landscape Plan</li></ul>
<p>3 Construction Activity</p> <p><input checked="" 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>	<ul style="list-style-type: none"><li>• will enquire at contractor pre-qualification stage, their experience</li><li>• will include actions in specifications water based sprinkler system will be used.</li></ul>
<p>4 Ozone Protection</p> <p><input checked="" type="checkbox"/> ▶ Zero use of CFC-based refrigerants and Halons in fire suppression</p>	<ul style="list-style-type: none"><li>• will ask mechanical engineer to check zero use in fire systems</li><li>• will include actions in specifications</li></ul>

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<p>5 Urban Heat Island Reduction: At Grade</p> <p><input type="checkbox"/> ► One of the following provided:</p> <p><input type="checkbox"/> Cover provided to shade at least 30% of all hardscape, including surface parking, walkways and others</p> <p><input type="checkbox"/> Light coloured materials* for at least 50 % of all hardscape, including surface parking, walkways and others</p> <p><input checked="" type="checkbox"/> Combination of shading and light coloured materials* for at least 50% of all hardscape, including surface parking, walkways and others.</p> <p>* Light coloured materials must have a reflectance of 0.3</p>	<ul style="list-style-type: none"> <li>• Site Plan</li> <li>• Landscape Plan</li> <li>• Sun/Shadow Study(where applicable)</li> <li>• Arborist Report underway</li> <li>• Tree Preservation Plan</li> <li>• Stormwater Management Report</li> <li>• will state this standard in building specification</li> </ul>
<p>6 Urban Heat Island: Roof</p> <p><input type="checkbox"/> One of the following provided:</p> <p><input type="checkbox"/> Green roof installed with 50% minimum roof coverage</p> <p><input checked="" type="checkbox"/> Light coloured roofing materials* used for 75% of the roof</p> <p><input type="checkbox"/> Combination of green roof and light coloured roofing materials* for at least 75% of the roof.</p> <p><input type="checkbox"/> Green roof designed to meet the City's performance criteria (minimum of 6 inch depth, non-monoculture)</p> <p>* "Light coloured roofing materials" must have Surface Reflectivity Index greater than 78 and emissivity greater than 0.9 according to ASTM Standard 408.</p>	<ul style="list-style-type: none"> <li>• Site Plan</li> <li>• Roof Plan (where applicable)</li> <li>• Stormwater Management Report</li> <li>• will have as requirement in specifications</li> </ul>

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7 Indoor Air Quality

- 45% of materials, including adhesives, sealants, paints, coatings, carpets, composite wood and agrifiber products, are low-emitting.
  - will state requirement in specifications and require documentation in shop drawings submissions
- Preferred: 75% of materials are low-emitting
- Excellent: 90% of materials are low-emitting
- Proper ventilation provided to control fungus, mold and bacteria.
- Principle Venting Capacity (PVC) + 15 cubic feet per minute times the number of bedrooms +1
- Forced air distribution required to be interconnected with operation of PVC fan

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<b>8</b>	<b>Insulation</b> <input type="checkbox"/> ► Walls, floor and ceiling insulated to the following Energuide standards Ceiling w/ attic:R40, Ceiling without attic: R31  <input checked="" 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: <input type="checkbox"/> If >2ft below grade: uninsulated <input type="checkbox"/> If <2ft BG: R+10, edge	<ul style="list-style-type: none"> <li>• through specifications &amp; notes on building permit drawings</li> </ul>
<b>9</b>	<b>Air tightness / Air Leakage</b> <input checked="" type="checkbox"/> ► Air leakage at doors and windows reduced to less than 2.0 in <sup>2</sup> /100ft	<ul style="list-style-type: none"> <li>• through specifications &amp; notes on building permit drawings</li> </ul>
<b>10</b>	<b>Windows and Doors</b> <input checked="" type="checkbox"/> ► Energy Star certified windows installed	<ul style="list-style-type: none"> <li>• through specifications &amp; notes on building permit drawings</li> </ul>
<b>11</b>	<b>Ducts</b> <input checked="" type="checkbox"/> ► Ductwork sealed in basement, and ducts located in heated boundary	<ul style="list-style-type: none"> <li>• through specifications &amp; notes on building permit drawings</li> </ul>

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<p>12 Space Heating and Cooling  <input checked="" type="checkbox"/> ► Energy Star heating and air conditioning system installed</p>	<ul style="list-style-type: none"> <li>• through specifications &amp; notes on building permit drawings</li> <li>• will direct mechanical engineer</li> </ul>
<p>13 Water Heating  <input checked="" type="checkbox"/> ► High efficiency boiler OR tankless water heater installed, complying with Canada's energy efficiency regulations.</p>	<ul style="list-style-type: none"> <li>• through specifications &amp; notes on building permit drawings</li> <li>• will direct mechanical engineer</li> </ul>
<p>14 Light Fixtures and Home Appliances  <input checked="" type="checkbox"/> ► All fixtures are Energy Star compliant.   <input checked="" type="checkbox"/> ► Where new appliances are being supplied, all are Energy Star compliant.</p>	<ul style="list-style-type: none"> <li>• through specifications &amp; notes on building permit drawings</li> <li>• will direct electrical engineer</li> <li>• will make note to project sponsor who is responsible for appliance order</li> </ul>
<p>15 Green Energy  <input checked="" type="checkbox"/> On-site renewable energy to self-supply 5% - 10% of project's energy needs  <input type="checkbox"/> 25% of energy needs purchased through grid-source renewable energy.</p>	<ul style="list-style-type: none"> <li>• will investigate solar or geo thermal in relation to cost</li> <li>• will investigate purchase options once construction has started &amp; occupancy date is confirmed</li> </ul>
<p>16 Daylighting / Building Orientation  <input checked="" type="checkbox"/> Building oriented and designed to take advantage of passive solar heating.  <input checked="" type="checkbox"/> Building oriented and designed to take advantage of natural lighting - south facing</p>	<ul style="list-style-type: none"> <li>• Site Plan</li> <li>• Elevation Drawings</li> <li>• Floor Plans</li> </ul>

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**Green Development Standard Checklist: WATER**

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17 Construction Activity <input checked="" type="checkbox"/> ► Greater Toronto Area Conservation Authorities on-site Erosion and Sediment Control Guidelines adhered to during construction and demolition activities	<ul style="list-style-type: none"> <li>• Servicing Report</li> <li>• Stormwater Management Report</li> <li>• Sediment and Erosion Control Plan (not applicable)</li> </ul>
18 Stormwater Run-Off: Suspended Solids Removal <input checked="" type="checkbox"/> ► On an annual loading basis, 80% of total suspended solids removed from all runoff leaving the site.	<ul style="list-style-type: none"> <li>• Servicing Report</li> <li>• Stormwater Management Report</li> <li>• Sediment and Erosion Control Plan (not applicable)</li> </ul>
19 Stormwater Run-Off: Disinfection <input checked="" type="checkbox"/> ► Runoff from the site that discharges directly in to Lake Ontario or Waterfront areas disinfected.	<ul style="list-style-type: none"> <li>• Servicing Report</li> <li>• Stormwater Management Report</li> <li>• Sediment and Erosion Control Plan (not applicable)</li> </ul>
20 Stormwater Run-Off: Erosion Control <input checked="" 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	<ul style="list-style-type: none"> <li>• Servicing Report</li> <li>• Stormwater Management Report</li> <li>• Sediment and Erosion Control Plan ( not applicable)</li> </ul>
21 Stormwater Retention / Water balance <input checked="" type="checkbox"/> ► Stormwater on-site retained to the same level of annual volume of overland runoff allowable under pre-development conditions  <input checked="" type="checkbox"/> ► All runoff retained on the site from small design rainfall events (typically 5 mm)	<ul style="list-style-type: none"> <li>• Servicing Report</li> <li>• Stormwater Management Report</li> </ul>

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22 Low-Water Landscaping - See Note <input type="checkbox"/> Drought-resistant plant materials used.	<ul style="list-style-type: none"> <li>• Landscape Plan</li> <li>• will request LA to consider</li> </ul>	
23 Rain Water Harvesting - See Note <input checked="" 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"> <li>• Servicing Report</li> <li>• Stormwater Management Plan financial limitation for separate system - will investigate use of rain barrels for irrigation.</li> </ul>	
24 Grey Water Re-use - See Note <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"> <li>• Servicing Report</li> <li>• financial limitation</li> </ul>	
25 High Efficiency Fixtures and Appliances <input checked="" type="checkbox"/> ► All water fixtures meet efficiency standards - toilets: 6.0 L/flush; urinals: 3.8L/flush; faucets: 9.5L/min. <input checked="" type="checkbox"/> ► Where provided, all appliances meet efficiency standards - dishwashers: 38L; washing machines use 40 % less water. <input type="checkbox"/> Individual faucet metering (0.95 L / cy) provided.	<ul style="list-style-type: none"> <li>• direct mechanical engineer</li> <li>• remind project sponsor when purchasing</li> <li>• financial limitation on meters</li> </ul>	

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**Green Development Standard Checklist: SOLID WASTE**

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26 Construction Waste Management <input type="checkbox"/> ► Maximum of 2.5 lbs/sq foot of construction waste sent to landfill	<ul style="list-style-type: none"> <li>• will state in specification &amp; then be part of construction contract</li> </ul>	
27 Reuse of Building Materials <input checked="" type="checkbox"/> Preferred: At least 5% of project's materials (based on value) are reused materials. <input type="checkbox"/> Excellent: 10% or more of project's material (based on value) are reused materials	<ul style="list-style-type: none"> <li>• will enquire at contractor pre-qualification stage, their experience</li> <li>• will include actions in specifications</li> </ul>	
28 Use of Recycled Materials <input type="checkbox"/> Preferred: At least 7.5% of a project's materials (based on value) are comprised of recycled content** <input type="checkbox"/> Excellent: 15% recycled content*  * Recycled content defined by CAN/CSA-ISO 1402-00 Environmental Labeling and Advertising Guidelines	<ul style="list-style-type: none"> <li>• will enquire at contractor pre-qualification stage, their experience</li> <li>• will include actions in specifications</li> </ul>	
29 Durable Buildings <input type="checkbox"/> Compliance to CSA S478-95 (R2001) guideline for durable buildings	<ul style="list-style-type: none"> <li>• during builders' prequalification stage will ask about builder's experience or knowledge</li> </ul>	



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<p>30 Urban Forest: Site and Adjacent Boulevard</p> <p><input checked="" type="checkbox"/> ► All trees that are 30cm or more DBH (diameter at breast height) retained.</p> <p><input checked="" type="checkbox"/> ► Each tree provided with a minimum soil volume of 15m<sup>3</sup> of high quality soil.</p> <p><input checked="" type="checkbox"/> ► Minimum protection distances and standards for tree protection barriers during construction have been adhered to according to Specifications for Construction Near Trees</p> <p><input checked="" type="checkbox"/> ► Native soil retained on site (or replaced, as necessary, with local soil of equal or better quality)</p> <p><input type="checkbox"/> Non-potable watering system for all trees provided</p> <p><input type="checkbox"/> Large growing, predominantly native shade trees planted to achieve 40% canopy coverage of the site at maturity</p>	<ul style="list-style-type: none"> <li>• Site Plan</li> <li>•</li> <li>• Arborist Report</li> <li>• Tree Preservation Plan</li> <li>• Natural Heritage Impact Study (not applicable)</li> <li>• for soil retention will state this in spec</li> </ul>
<p>31 Natural Heritage: Site</p> <p><input checked="" type="checkbox"/> ► No invasive species planted on properties or streets adjacent to ravines and natural area parks.</p> <p><input type="checkbox"/> Preferred: Native trees, shrubs and ground cover planted on 50% of site area (excluding building footprint)</p> <p><input type="checkbox"/> Excellent: Native trees, shrubs and ground cover planted on 75% of site area (excluding building footprint)</p>	<ul style="list-style-type: none"> <li>• Site Plan</li> <li>• Landscape Plan</li> <li>• Arborist Report</li> <li>• Tree Preservation Plan</li> <li>• Natural Heritage Impact Study (not applicable)</li> </ul>

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<p>32 Glass and other design features for Migratory Birds</p> <p><input type="checkbox"/> For homes adjacent to ravines and natural areas, Bird Friendly Development Guidelines adhered to</p>	<ul style="list-style-type: none"> <li>• Site Plan</li> <li>• Elevation Drawings</li> <li>• Perspective Drawings</li> <li>• Natural Heritage Impact Statement (where applicable)</li> <li>• Heritage Impact Statement (not applicable)</li> <li>• Plan for Public Art (not applicable)</li> </ul>
<p>33 Light Pollution</p> <p><input checked="" type="checkbox"/> ► No lighting directed towards the sky</p> <p><input type="checkbox"/> Bird friendly Development Guidelines adhered to</p>	<ul style="list-style-type: none"> <li>• Site Plan</li> <li>• Landscape Plan</li> <li>• Elevation Drawings</li> <li>• Floor Plans</li> </ul>