SOURCING HEALTHY MATERIALS

Charles Marshall, P. Eng

DIALOG
Our mission:

To meaningfully improve the wellbeing of our communities and the environment we all share.
Selecting Materials:

Consider the environmental impact of extraction, processing, and decommissioning

Contribute to human healthy and quality of the indoor environment

Make a positive social impact

Create enduring design: attractive, durable, and cost effective
The Bill Fisch Forest Stewardship and Education Centre
The Living Building Challenge: Materials Requirements

Carbon neutral building

Appropriate sourcing of local & indigenous materials

Responsible sourcing: 100 % FSC certified wood

Eliminate worst-in-class RED LIST materials with the greatest impact to human and ecosystem health
THE RED LIST:

- Asbestos
- Cadmium
- Chlorinated and Chlorosulfonated Polyethylene
- Chlorofluorocarbons (CFCs)
- Chloroprene (Neoprene)
- Formaldehyde (added)
- Halogenated Flame Retardants
- Hydrochlorofluorocarbons (HCFCs)
- Lead (added)
- Mercury
- Petrochemical Fertilizers and Pesticides
- Phthalates
- Polyvinyl Chloride (PVC)
- Wood treatments containing Creosote, Arsenic or Pentachlorophenol
<table>
<thead>
<tr>
<th>Material</th>
<th>Zone</th>
<th>Ingredients</th>
<th>Redlist compliant</th>
<th>Manufacturing Location</th>
<th>Source Location</th>
<th>Responsible Industry</th>
<th>Embodied Carbon (KgCO2/Kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cellulose Fibre Insulation</td>
<td>3 - 2000km</td>
<td>Cellulose fibres, Boric Acid, Ammonium Sulphate, Mono-Ammonium Phosphate</td>
<td>Yes</td>
<td>Etobicoke, Ontario</td>
<td>GTA</td>
<td>TBC</td>
<td>0</td>
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<tr>
<td>Plywood</td>
<td>1 - 500km</td>
<td>Southern Yellow Pine, Phenol Formaldehyde Resin</td>
<td>Yes, under exception</td>
<td>Chopin, Louisiana</td>
<td>Louisiana</td>
<td>FSC, mixed</td>
<td>0.81</td>
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<tr>
<td>CLT</td>
<td></td>
<td>SPF flanges, Methylene Diphenyl Diisocyanate, Phenol Formaldehyde</td>
<td>Under Exception, TBC</td>
<td>Chibougamau, Quebec</td>
<td></td>
<td>FSC, mixed</td>
<td>0.81</td>
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<tr>
<td>Wood Siding - salvaged</td>
<td>3 - 2500km (salvaged)</td>
<td>Douglas Fir (hemlock/pine options)</td>
<td>Yes</td>
<td>Toronto, Ontario</td>
<td>Toronto, ON</td>
<td>salvaged - mill not FSC compliant, doesn't have to be</td>
<td></td>
</tr>
<tr>
<td>Wood Siding - Larch</td>
<td>3 - 2000km</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</table>
Working with our suppliers

**Explain:** What we’re trying to do.

What we need, exactly.

How to find the information that we’re asking for.

Why we’re asking for it.
What’s changed??

Transparency and disclosure: transitioning from ‘nice to have’ to ‘must have’

LEED v4: brought EPDs and HPDs to the mainstream

Awareness and resources are growing.
Where to find information:

1. Talk to suppliers! Do your research

2. Take advantage of resources in the industry
# Declare Label Explanation

How to use the Declare Database:
Products are listed by CSI division number, and are filterable by CSI division. Each product has a Declare label that can be viewed by clicking on the product name.

## Downloads
- Declare Manufacturers Guide.pdf
- Product Declaration Form.docx
- Red List CAS Guide.xls
- Declare Terms and Conditions Agreement.pdf

<table>
<thead>
<tr>
<th>Declare ID</th>
<th>Product Name</th>
<th>CSI Master Format Division</th>
<th>Manufacturer Name</th>
<th>City</th>
<th>State/Province</th>
<th>Country</th>
<th>LBC Red List Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOT-0005</td>
<td>Aquia® Dual-Max® 1.6gpf &amp; 0.8gpf Two-Piece Toilet</td>
<td>TOTO USA</td>
<td>Monterey</td>
<td>Nuevo Léon</td>
<td>Mexico</td>
<td>Declared</td>
<td></td>
</tr>
<tr>
<td>TOT-0006</td>
<td>Commercial Wall-Hung HE 1.28gpf Toilet</td>
<td>TOTO USA</td>
<td>Fairburn</td>
<td>GA</td>
<td>USA</td>
<td>Declared</td>
<td></td>
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<tr>
<td>TOT-0007</td>
<td>Commercial Wall-Mount Lavatory</td>
<td>TOTO USA</td>
<td>Monterey</td>
<td>Nuevo Léon</td>
<td>Mexico</td>
<td>Declared</td>
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<tr>
<td>TOT-0008</td>
<td>Commercial Washout HE 0.126gpf Urinal – UT445U(V)</td>
<td>TOTO USA</td>
<td>Hanoi</td>
<td>Vietnam</td>
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<td>Declared</td>
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<tr>
<td>TOT-0002</td>
<td>Eco Ultramax® 1.28gpf One-Piece Toilet</td>
<td>TOTO USA</td>
<td>Morrow</td>
<td>GA</td>
<td>USA</td>
<td>Declared</td>
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<tr>
<td>TOT-0009</td>
<td>Drake® II 1.28gpf Two-Piece Toilet</td>
<td>TOTO USA</td>
<td>Morrow &amp; Lancaster</td>
<td>Georgia</td>
<td>USA</td>
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<tr>
<td></td>
<td>UltraMax® II 15”</td>
<td>TOTO USA</td>
<td>Morrow</td>
<td>GA</td>
<td>USA</td>
<td>Declared</td>
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</table>
EcoBatt Kraft Faced
Knauf Insulation, Inc.

Final Assembly: Shelbyville, Indiana, USA
Life Expectancy: Life of Structure
End of Life Options: Landfill (100%)

Ingredients:
Glass Fibers From Recycled Glass Bottles (Chicago, IL), Glass Fiber From Virgin Minerals (Sand) (Lewisport, KY), Dextrose, Ammonium Sulfate, Ammonia, Mineral Oil, Brown Kraft Paper, Asphalt Coating, Silane, Surfactant

Living Building Challenge Criteria:

<table>
<thead>
<tr>
<th>KNF-2010</th>
<th>VOC Emissions: CDPH Compliant</th>
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<tbody>
<tr>
<td>N/A</td>
<td>LBC Red List Free</td>
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<tr>
<td>Declaration Status</td>
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<tr>
<td>LBC Compliant</td>
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<tr>
<td>Declared</td>
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</table>
What we’re doing:

Be aware of the materials impact of our projects

Research to keep informed and up-to-date

Build capacity in our firm: understand the issues
What we’re doing:

Clearly identify our selection criteria

Use the resources that are available: databases, certifications, filing systems

Choose designs, assemblies, and products that minimize damaging impacts and improve health and wellbeing
Thank You