Part 1  General

1.1  Summary

.1 In general, follow the 3R principles (reduce, reuse and recycle). The objective is to divert a minimum of 75% (by weight or volume) of waste generated by construction/renovation/demolition and land clearing (not considering hazardous materials), from going into landfills. Diverted material must include at least 4 material streams. For example: drywall, brick, wood, ceramic.

.2 For each container sent for recycling, the Contractor must provide a copy of the invoice, delivery slip and recycling facility reception slip within 5 business days. These documents must clearly identify the date, the container number, the address from which it was picked-up, the type of waste in the container and the amount that was recycled. Calculations can be done by weight or volume, but must be consistent throughout.

.3 The contractor shall provide a waste audit on end-of-project recycling rates, salvage rates and landfill rates demonstrating that a minimum of 75% of construction waste was recycled or salvaged.

.4 Existing items in good condition are to be reused. Consultants must identify these items at the design phase. In decreasing order of preference, specify:

   .1 Reuse in the new project, if suitable.
   .2 Reuse in other McGill projects if there is an opportunity, to be coordinated by Project Manager.
   .3 Send to a recuperation center. The Contractor shall submit proof to this effect.

.5 Interior non-structural elements must be reused or salvaged for at least 50% of the surface area in order to meet LEED® requirements, or to the greatest degree possible. Hazardous materials that are remediated as a part of the project must be excluded from the calculation.

.6 Furniture and furnishings must be reused, salvaged, or refurbished for at least 30% of the total furniture and furnishings cost in order to meet LEED® requirements, or to the greatest degree possible.

.7 Major renovations must reuse or salvage building materials for offsite or on site for 50% of the surface area in order to meet LEED® requirements, or to the greatest degree possible. Include structural elements (e.g., floors, roof decking), enclosure materials (e.g., skin, framing), and permanently installed interior elements (e.g., walls, doors, floor coverings, ceiling systems). Exclude from the calculation window assemblies and any hazardous materials that are remediated as a part of the project.

1.2  Related other McGill Guidelines

.1 Facility Remediation of Hazardous materials (section 02 80 00);
.2 Carpeting (section 09 68 00);
1.3 Construction Waste Management Plan

.1 The Contractor must provide a Construction Waste Management Plan following the specifications of the consultant. Following this plan, a Waste Audit form must be submitted at the beginning of the project. The Waste Management Plan must specify whether materials will be separated or comingled, must describe the diversion strategies planned for the project, and must describe where the material will be taken and how the recycling facility will process the material. Refer to McGill’s LEED Documentation Guide.

.2 The Professional must establish waste diversion goals for the project by identifying at least five materials (both structural and non-structural) targeted for diversion, and approximate a percentage of the overall project waste that these materials represent.

.3 The Professional shall prepare table 01 74 19 (attached) to be filled in by the contractor to report on waste management to McGill’s Project Manager at substantial completion. This table is available in Excel format through the Project Manager.

1.4 Triage of Waste:

.1 The triage of waste can be done on-site or by a recycling facility off-site.

.2 If on-site, the use of many small containers on the job is appropriate. The use of many small size waste containers is possible or a single standard building waste container with inner separations. However, the use of a company working with trucks (including labour, hauling and disposal fees) is preferable for small projects. Container locations, sizes and organisation, along with the security issues have to be planned ahead with the Project Manager.

.3 Hazardous wastes are to be dealt with separately following Quebec regulations. They are not to be included in calculations of diversion of landfill.

.4 Main items to be segregated and requiring some specific procedures:

.1 Metal;

.2 Bricks;

.3 Asphalthic items (membranes, shingles, etc.);

.4 Paper and cardboard;

.5 Wood class 1: not painted, treated or stained. This wood is in its natural state.

.6 Wood class 2: all other type;

.7 Gypsum and plaster (if containing asbestos, to be dealt with separately under asbestos conditions regulations):

.1 Gypsum shall be removed in large pieces and be segregated on site. The gypsum container may also contain metal (studs and screws) if the recycling facility allows.

.2 The Contractor shall protect gypsum for recycling purposes.

.8 Ceiling tiles (if containing asbestos, to be dealt with separately under asbestos conditions regulations):

.1 Non Damaged ceiling tiles shall be reused. Damaged tiles shall be sent to a recycling facility. The Contractor shall submit proof to this effect.

.9 Floor tiles (if containing asbestos, to be dealt with separately under asbestos conditions regulations).
.10 Concrete and aggregate:
   .1 No aggregate material shall be broken, shattered or crushed outside
       unless specific interventions are required to prevent dust formation
       and noise.

.11 Glazing:
   .1 Glazing shall be set aside from other wastes to be recycled. It shall
       be put in a separate container.
   .2 Glass plates shall be removed intact.
   .3 If glazing must be reduced length wise to fit inside the container, it
       shall be done on site with a glass cutter, to eliminate waste.

.12 Wiring:
   .1 Wiring shall be separated from other metallic waste.
   .2 Electrical wiring shall be put aside, free of capacitors and
       sockets/outlets, for recycling at an approved site for such type of
       products. The Contractor shall submit proof to this effect.

.13 Doors, frames, hardware and windows
   .1 Locksets in good shape shall be kept for McGill locksmith shop.
   .2 Doors, door frames, hardware and windows reuse (as a whole or a
       part) in good shape shall be reused (see article 1.1.2). Damaged
       units shall be sent to a re
       cycling
       facility
       according to
       their material
       composition. The Contractor shall submit proof to this effect.

.14 Light fixtures
   .1 Existing fluorescent tubes and light bulbs shall be set aside for
       recycling and directed to an approved site for such type of products.
       The Contractor shall submit proof to this effect. Acceptable recycling
       site: RLF, a division of “Chemtech environnement inc.” or approved
       equivalent.
   .2 Ballasts and capacitors marked as “non-PCB” must be placed in a
       plastic bucket labelled “non-PCB electrical equipment”, for recycling
       purposes. See article 1.4.4. Hazardous Waste.
   .3 Other ballasts and capacitors shall be placed in a plastic bucket
       labelled “PCB electrical equipment”, for disposal purposes. See
       article 1.4.4. Hazardous Waste..

.15 Carpets
   .1 All carpets shall be sent to an approved recycling site for such type
       of products (see section 09 68 00 - Carpeting). The Contractor shall
       submit proof to this effect.

.16 All separable objects: movable furniture or built-in, plumbing equipment, etc.;

1.5 **CRD Audit and “Receipt certification”**
   .1 “Receipt certification” (or “Feuille de route”) has to be used and all originals shall be
       submitted to McGill as proof that the materials were sent to the right receiver. These forms
       shall mention the material and quantity of the truck or container leaving the site, the date
       and time, and be signed by the trucker and the reception company.
.2 A detailed report containing the following information has to be given to the Project Manager for every container, or at the end of the project for small projects (see table 01 74 19):

.1 Materials descriptions;
.2 Volume or weight;
.3 Name and address of recycling company;
.4 Name and address of charitable organisation;
.5 Weight tickets;
.6 Photos of each loaded truck or container leaving the site.

.3 Procedure: The architect shall complete the general sections of the table, and the type and estimated quantity of waste. The general contractor shall fill in the quantities, type of disposal (recycled, reused etc.), costs and identify the facilities that received the waste.

1.6 Hazardous Waste (see also section 02 80 00 – Facility Remediation of hazardous Materials)

.1 Asbestos,
.2 Mould,
.3 For all hazardous materials found on site that could be taken care of by McGill’s Hazardous Waste Management (HWM), the Project Manager needs to be notified at least two weeks in advance in order to send a FOAPAL to HWM. For hazardous waste disposal by HWM, containers and labels must be approved by HWM.

.4 PCB containing materials:

.1 Contractor needs to set aside in pails any PCB containing materials for HWM to come on site and dispose of them.

.5 Mercury

.1 Liquid mercury containing materials or items are to be placed inside a plastic pail labelled “mercury waste”.
.2 Mercury containing switches, thermostats, HVAC controls or other assemblies of that nature are not to be disassembled but to be placed into a plastic pail (4L or 20L) labelled “mercury waste”.
.3 Traps under all fume hood sink shall be carefully emptied from their deposits into a plastic bag.
.4 HWM will come on site and dispose of all mercury wastes.
.5 If mercury containing equipment are broken causing the release of mercury it has to be immediately cleaned up in accordance with the Contractors written Health and Safety plan.
.6 In the event of a release of mercury, the Project Manager and McGill Environmental Health and Safety Office must be notified immediately.

.6 Halocarbon refrigerant recovery

.1 Equipment containing halocarbon refrigerants may include air conditioners, dehumidifiers, commercial building cooling systems (chillers and roof-top units), refrigerators and freezers, heat pumps and air conditioning systems. Only qualified personnel under Chapter III of Quebec Regulation Respecting Halocarbons, may dismantle a refrigeration unit, an air conditioning unit or fire extinguishing equipment designed or converted to operate with a halocarbon.
.2 The Project Manager needs to call FCC to dispose of all refrigerants. Once free of liquid components, HWM will dispose of the equipment.
The contractor must provide proof of proper disposal, storage or reuse.

Lead

Tests have to be conducted to identify lead contamination in painting. If materials are contaminated with lead, they have to be dealt with separately following Quebec regulations. They are not to be included in calculations of diversion of landfill.

All oil tanks, furnaces and equipment of this type can be removed by HWM if ready to take out (HWM will not do any dismantlement.)
**Table 01 74 19**

<table>
<thead>
<tr>
<th>Type of Waste</th>
<th>Quantity Generated</th>
<th>Quantity Disposed</th>
<th>Disposal Method</th>
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<tbody>
<tr>
<td>Office Paper</td>
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<tr>
<td>Kitchen Waste</td>
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<tr>
<td>Recyclables</td>
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<tr>
<td>Total</td>
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END OF SECTION