

Construction Waste Management and Disposal

MODEL SPECIFICATION

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Prepared by Morris Specifications Inc.
for Metro Vancouver

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Notes to Specifier shown in Hidden Text. To have them appear on screen, select ¶; to have them appear when printing, select 'hidden text' in printing menu options.

SECTION 01 79 19 - CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

PART 1 - GENERAL

1.1 WASTE MANAGEMENT GOALS FOR THE PROJECT

- .1 The Owner has established that this Project shall generate the least amount of waste possible and that processes shall be employed that ensure the generation of as little waste as possible including prevention of damage due to mishandling, improper storage, contamination, inadequate protection or other factors as well as minimizing over packaging and poor quantity estimating.
- .2 Of the inevitable waste that is generated, the waste materials designated in this specification shall be salvaged for reuse and or recycling. Waste disposal in landfills or incinerators shall be minimized. On new construction projects this means careful recycling of job site waste, on demolition projects this also means careful removal for salvage.

1.2 SECTION INCLUDES

- .1 Submission and implementation of a Project Waste Management Plan.

1.3 RELATED SECTIONS

- .1 Section 02 42 00 - Deconstruction
- .2 Section 03 10 00 - Concrete Forming
- .3 Section 03 33 00 - Cast-In-Place Concrete
- .4 Section 05 10 00 - Structural Metal Framing
- .5 Section 05 40 00 - Cold-Formed Metal Framing
- .6 Section 06 05 73 - Wood Treatment
- .7 Section 06 10 00 - Rough Carpentry
- .8 Section 06 20 00 - Finish Carpentry
- .9 Section 07 21 00 - Thermal Insulation
- .10 Division 08 - Openings
- .11 Section 09 29 00 - Gypsum Board
- .12 Section 09 30 00 - Tiling

- .13 Section 09 64 00 - Wood Flooring
- .14 Section 09 65 00 - Resilient Flooring
- .15 Section 09 68 00 - Carpeting
- .16 Section 09 90 00 - Painting and Coating
- .17 Section 12 93 00 - Site Furnishings
- .18 Section 31 23 00 - Excavations and Fill
- .19 Division 32 - Landscaping

1.4 CODE OF PRACTICE

- .1 In addition to other requirements specified herein it is a requirement for the Work of this project that the Contractor comply with Metro Vancouver's "3Rs Code of Practice for the Building Industry". Refer also to "Construction Waste Management: A Guide for Builders and Developers" and "Demolition & Salvage: A Guide for Project Managers and Contractors." All documents are available from Metro Vancouver, Sustainable Business Services Division, Telephone: 604-451-6575. Website address: www.metrovancouver.org/buildsmart.

1.5 REGULATORY REQUIREMENTS

- .1 Conform to applicable codes and regulations for disposal and removal of common and hazardous waste. Handle and dispose of all hazardous and banned materials in accordance with the BC Environmental Management Act and Hazardous Waste Regulation, and regional and municipal regulations. These hazardous and banned materials include, but are not limited, to asbestos, drywall (banned from disposal), underground storage tanks, Polychlorinated Biphenyls (PCBs), abandoned chemicals (gasoline, pesticides, herbicides, flammable and combustible substances), freon from cooling equipment, lead-based paints, smoke detectors, and mercury containing switches.
- .2 Licensed facilities: Only those brokerage, storage, transfer and disposal facilities which comply with the requirements of the "Greater Vancouver Sewerage and Drainage District Municipal Solid Waste and Recyclable Material Regulatory Bylaw No. 181, 1996 as amended by Bylaw 183, 1996" and those licensed by other jurisdictions shall be used by the Contractor for the recycling and disposal of waste materials generated at deconstruction and renovation projects. For a listing of licensed facilities, contact the Metro Vancouver Solid Waste Regulatory program at 604-436-6777.
- .3 The following materials are banned from the Garbage within Metro Vancouver, effective January 1, 2008.
 - .1 Corrugated cardboard.
 - .2 Newsprint.
 - .3 Office paper.
 - .4 Electronic waste (including personal computers, printers & TVs).

- .5 Refundable beverage containers (excluding milk cartons).
- .6 Blue box recyclables (including glass, metal, and plastic Type 1, 2, 4 & 5 containers).
- .7 Product Stewardship (Take Back) Program materials include:
 - .1 Paint, solvent, flammable liquids, gasoline and pesticides.
 - .2 Oil, oil filters and empty containers.
 - .3 Medications, pharmaceuticals.
 - .4 Lead-acid (car) batteries.
 - .5 Tires.
- .8 Yard and garden waste.
- .9 Gypsum drywall.

1.6 WASTE MANAGEMENT PLAN

- .1 Waste Management Plan: Within 10 calendar days after receipt of Notice of Award of Contract, or prior to any waste removal, whichever occurs sooner, the Contractor shall submit to the Owner and Consultant a Waste Management Plan. Attached is a sample format together with sample waste generation rates to aid the Contractor in formulating the Plan. The Contractor may use this form or provide a custom form containing the same information. The Plan shall contain the following:
 - .1 Analysis of the proposed job site waste to be generated, including the types of recyclable and waste materials generated (by volume or weight). In the case of demolition, a list of each item proposed to be salvaged during the course of the project should also be prepared (Refer to www.metrovancouver.org/buildsmart for a directory of service providers. This list is not necessarily complete. The Contractor may use any of these or other service providers).
 - .2 Alternatives to Landfilling: Contractor shall designate responsibility for preparing a list of each material proposed to be salvaged, reused, or recycled during the course of the Project (Refer to table included in Metro Vancouver's Model Specification 'Removal and Salvage of Construction Materials'.)
 - .3 List of compulsory materials to be recycled, shall include, at minimum, the following materials:
 - .1 Old corrugated cardboard.
 - .2 Clean dimensional wood, palette wood.
 - .3 Concrete/Brick/Concrete Block/Asphalt.
 - .4 Scrap Metal.



- .5 Drywall.
- .6 Paint (return to Paint Depot).
- .4 List of additional optional materials to be recycled.
 - .1 Fluorescent tubes.
 - .2 Landclearing debris.
- .5 List of Materials to be Salvaged (Demolition Projects only)
 - .1 Dimensioned Lumber and Heavy Timbers.
 - .2 Wood siding.
 - .3 Structural Steel.
 - .4 Wood Paneling, molding, trim and Wainscoting.
 - .5 Heritage architectural elements such as mantle pieces, columns, etc.
 - .6 Cabinets and casework.
 - .7 Insulation.
 - .8 Brick and block.
 - .9 Electric Equipment and Light Fixtures.
 - .10 Plumbing fixtures and brass.
 - .11 Windows, doors and frames.
 - .12 Hardwood flooring.
- .2 Meetings: Contractor shall conduct Project Waste Management meetings. Meetings shall include subcontractors affected by the Waste Management Plan. At a minimum, waste management goals and issues shall be discussed at the following meetings:
 - .1 Pre-bid meeting.
 - .2 Pre-construction meeting.
 - .3 Regular job-site meetings.
- .3 Materials Handling Procedures: prevent contamination of materials to be recycled and salvaged and handle materials consistent with requirements for acceptance by designated facilities. Where space permits, source separation is recommended. Where materials must be co-mingled they must be taken to a processing facility for separation off site.

- .4 Transportation: The Contractor may engage a hauling subcontractor or self haul or make each subcontractor responsible for their own waste. In any case compliance with these requirements is mandatory.
- .5 If requested, submit to the Consultant and/or Owner way-bills, invoices and other documentation confirming that all materials have been hauled to the required locations.
- .6 Waste Management Plan Implementation:
 - .1 Manager: The Contractor shall designate an on-site party (or parties) responsible for instructing workers and overseeing and documenting results of the Waste Management Plan for the project.
 - .2 Distribution: The Contractor shall distribute copies of the Waste Management Plan to the Job Site Foreman, each Subcontractor, the Owner, and the Consultant.
 - .3 Instruction: The Contractor shall provide on-site instruction of appropriate separation, handling, and recycling to be used by all parties at the appropriate stages of the Project. On demolition projects the Contractor shall provide on-site instructions for salvage and requirements for reusing salvaged materials within the project, either in new construction or in a renovation.
 - .4 Separation facilities: The Contractor shall lay out and label a specific area to facilitate separation of materials for recycling and salvage. Recycling and waste bin areas are to be kept neat and clean and clearly marked in order to avoid contamination of materials. The requirement for separation will only be waived if the Contractor can demonstrate to the Owner/Consultant that there is insufficient room to accommodate it. If this is the case the materials must be sent to a processing facility for separation off site.
 - .5 Application for Progress Payments: The Contractor shall submit with each Application for Progress Payment a summary of waste materials, recycled, salvaged and disposed of by the Project using the form appended to this specification or a form generated by the Contractor containing the same information. Failure to submit this information shall render the Application for Payment incomplete and shall delay Progress Payment. The Summary shall contain the following information:

For each material salvaged and recycled from the Project, include the amount (in cubic yards or tonnes or in the case of salvaged items state quantities by number, type and size of items) and the destination (i.e. recycling facility, used building materials yard). For each material land filled or incinerated from the Project, include the amount (in cubic yards or tonnes) of material and the identity of the landfill, incinerator and/or transfer station.

PART 2 - PRODUCTS

- not applicable

PART 3 - EXECUTION

- not applicable

END OF SECTION 01 74 19

Construction Projects Waste Generation Rates

Material	Residential/Commercial High-rise Construction		Institutional Low-rise Construction		Commercial Low-rise Construction		Residential Low-rise Construction	
	cu.yd./1,000 sq.ft.	tonnes/1,000 sq.ft.	cu.yd./1,000 sq.ft.	tonnes/1,000 sq.ft.	cu.yd./1,000 sq.ft.	tonnes/1,000 sq.ft.	cu.yd./1,000 sq.ft.	tonnes/1,000 sq.ft.
wood	3.3	0.40	7.0	0.86	5.6	0.68	6.0	0.73
drywall	3.6	0.92	0.9	0.22	0.2	0.05	1.1	0.27
metal	0.2	0.09	0.4	0.21	--	--	--	--
concrete/ asphalt	1.7	1.79	0.7	0.99	--	--	0.04	0.05
corrugated cardboard	--	--	--	--	7.1	0.14	2.4	0.05
other	5.6	1.54	0.2	0.54	1.0	0.27	0.5	0.14
Total	14.4	4.74	9.2	2.82	13.9	1.14	10.04	1.24

Explanatory note:

Waste generation rates vary depending on project type and size, subtrade efficiency, accurate material estimation, on-site materials storage procedures and product packaging.

Estimate the volumes or quantities of materials generated on the site by multiplying the floor area of your project with the generation rates listed for the different materials.

Waste Management Plan Construction & Demolition Projects

Name of Company		Contact Person	Telephone No.
Project Site/Location		Project Type <input type="checkbox"/> Construction <input type="checkbox"/> Demolition	Project Size (in square feet)

	Pre-Project	Project Updates	
		For Period:	to
Material	Estimated Generation	Recycled/Salvaged/Disposed	Facility
Total			

Signature	Title	Date
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Explanatory note:

Column 1 - "Material" -- enter materials targeted for recycling and/or salvage and include a category for waste materials requiring disposal

Column 2 - "Estimated Generation" -- enter estimated volumes (cu.yd.) or quantities (metric tonnes) of recyclable and waste materials generated and state number of salvageable items

Column 3 - "Recycled/Salvaged/Disposed" -- enter volumes (cu.yd.) or quantities (metric tonnes) of materials recycled and disposed and state number of items salvaged

Column 4 - "Facility" -- enter end-destination of recycled, salvaged and disposed materials.