

## Appendix A

### Evolution of Environmental Procurement Policies

In 1989 the Association of Canadian Cities for Environmentally Sound Strategies (ACCESS) adopted the following “Statement of Principles” which was adopted as policy by numerous municipalities and other public affairs:

“That in order to increase the development and awareness of Environmentally Sound Products all departments, in conjunction with Purchasing and Supply Staff review their contracts and tender specifications for goods and services, to ensure that wherever possible and economical, specifications are amended to provide for expanded use of products and services that contain the maximum level of post-consumer waste and/or recyclable content, without significantly affecting the intended use of the product or service, and that it is recognized that cost analysis is required in order to ensure that the products are made available at competitive prices.”

This was subsequently revised by ACCESS in 1997 in order to reflect changing realities:

“In order to increase the development and awareness of environmentally sound products and services, organizations, in conjunction with Purchasing and Material Management staff, will review their contracts and tender specifications for goods and services, to ensure that wherever possible and economically feasible, specifications are amended to provide for consideration of environmental characteristics. Consideration may be given to those environmental products that are certified by an independent accredited organization.

The organization as a whole will endeavour to increase its use of products and services that are responsible to the environment in the way that they are made, used, transported, stored, packaged and disposed of. It is recognized that analysis is required in order to ensure that the products are made available at competitive prices, and that the environmental benefits provided by a product or service should not significantly affect the intended use of that product or service.”

*(Revised and Adopted June 9, 1997)*

Again, changes are being completed and it is expected that ACCESS will revise its “Statement of Principle” in 2000 as follows:

#### Revised Environmentally Responsible Procurement Policy

“That in order to increase the development and awareness of environmentally sound purchasing, acquisitions of goods and services will ensure that wherever possible specifications are amended to provide for the expanded use of environmentally preferred products such as: durable products, reusable products, energy efficient products, low pollution products, products (including those used in services) that contain the maximum level of post-consumer waste and/or recyclable content, and products that provide minimal impact to the environment.”

An environmentally preferred product is one that is less harmful to the environment than the next best alternative having characteristics including, but not limited to the following:

## Purchasing Guide

- Reduce waste and make efficient use of resources: An EPP would be a product that is more energy, fuel, or water efficient, or that uses less paper, ink, or other resources. For example, energy-efficient lighting, and photocopiers capable of double-sided photocopying
- Are reusable or contain reusable parts: These are products such as rechargeable batteries, reusable building partitions, and laser printers with refillable toner cartridges
- Are recyclable: A product will be considered to be an EPP if local facilities exist capable of recycling the product at the end of its useful life
- Contain recycled materials: An EPP contains post-consumer recycled content. An example is paper products made from recycled post-consumer fibre
- Produce fewer polluting by-products and/or safety hazards during manufacture, use or disposal: An EPP product would be a non-hazardous product that replaces a hazardous product
- Have a long service-life and/or can be economically and effectively repaired or upgraded.

It is recognized that cost analysis is required in order to ensure that the products are made available at competitive prices, and that the environmental benefits provided by a product or service does not undermine its overall performance.

Given the environmental and economic importance of infrastructure, environmentally responsible procurement principles should be applied to construction design, processes, tendering and materials.

Given that many environmentally preferred products and service was can produce a variety of tangible benefits, full consideration should be given to the long-term and complete costs and benefits of environmentally responsible procurement.

Tender and RFP clauses are written to reflect this policy.

Prepared by Bob Lalonde, GVRD, May 2000.

## Appendix B

### Five Guiding Principles of Environmental Purchasing

The U.S. Environmental Protection Agency (EPA) has developed five guiding principles to provide purchasers with broad guidance for undertaking environmentally preferable purchasing. While the applicability of these principles will vary depending on many factors including the type and complexity of the product or service being purchased and the dollar amount of the purchase, the principles capture the key points to consider in pursuing environmental purchasing.

In presenting these guidelines the EPA acknowledges that personnel must exercise their professional judgement and common sense, whether assessing a product or service's performance, cost, or availability. In addition, personnel are reminded to use reasonable discretion about the level of analysis needed to determine environmental preferability. For example, life cycle assessment is likely not required to purchase a box of rubber bands. On the other hand, large-volume or systems acquisitions, or for complex products, such assessments may be appropriate, might already be required or may already be available.

#### EPA's Guiding Principles of Environmentally Preferable Purchasing

Guiding Principle One:

- Environment + Price + Performance = Environmentally Preferable Purchasing

Environmental considerations should become part of normal purchasing practice, consistent with such traditional factors as product safety, price, performance, and availability.

Guiding Principle Two:

- Pollution Prevention

Consideration of environmental preferability should begin early in the acquisition process and be rooted in the ethic of pollution prevention, which strives to eliminate or reduce, up-front, potential risks to human health and the environment.

Guiding Principle Three:

- Life Cycle Perspective/Multiple Attributes

A product or service's environmental preferability is a function of multiple attributes from a life cycle perspective.

Guiding Principle Four:

- Comparison of Environmental Impacts

Determining environmental preferability might involve comparing impacts. In comparing environmental impacts, Federal agencies should consider: the reversibility and geographic scale of the environmental impacts, the degree of difference among competing products or services, and the overriding importance of protecting human health.

Guiding Principle Five:

- Environmental Performance Information

Comprehensive, accurate, and meaningful information about the environmental performance of products or services is necessary in order to determine environmental preferability.

# Environmental

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## Purchasing Guide

Appendices

For in-depth descriptions and application of the Guiding Principles visit the EPA website at [www.epa.gov/opptintr/epp/guide2.htm](http://www.epa.gov/opptintr/epp/guide2.htm).

## Appendix C

### GVRD Specification Resources

Section 5.8 of this guide introduced the issues around “Construction, Renovation, Demolition”, and an example of typical specifications from King County was outlined. The GVRD has also prepared the following Master Specifications which form 2 sections of Appendix C.

#### **GVRD - Project Waste Management Master Specification**

The document outlines minimum requirement for recycling and waste management on construction and demolition sites. The specification provides project managers with guidance on how to establish and manage effective recycling programs on project sites.

Additional or electronic copies of the document are available for order on the Greater Vancouver Regional District website [www.gvrd.bc.ca](http://www.gvrd.bc.ca) keywords: solid waste & recycling, job site recycling. The document may be “read only” at <http://www.gvrd.bc.ca/services/garbage/jobsite/projspec.pdf>.

#### **GVRD - Building Deconstruction Master Specification**

The Specification details the planning and implementation of building deconstruction projects for maximum salvage and recycling of building materials. Deconstruction procedures including material identification, removal, preparation and storage are described along with regulatory (hazardous waste) and site protection (health & safety) requirements.

Additional or electronic copies of the document are available for order on the Greater Vancouver Regional District website [www.gvrd.bc.ca](http://www.gvrd.bc.ca) keywords: solid waste & recycling, job site recycling.

#### **GVRD Directory of Resource Efficient Building Products**

Also included as the final section of Appendix C is the 2nd edition of the GVRD “Directory of Resource Efficient Building Products” provided in CD format. This disk provides information on 149 ‘green’ building products readily available in the Lower Mainland. The products listed in the Directory are made from salvaged materials, have recycled content, are engineered, or conserve water. Free copies are available from the GVRD. Call 436-6788.

# PROJECT WASTE MANAGEMENT MASTER SPECIFICATION

April 7, 1998

DISCLAIMER: THE HEALTH AND SAFETY OF WORKERS AND THE PUBLIC ARE THE FIRST PRIORITY IN ANY CONSTRUCTION OR DEMOLITION PROJECT. PROJECT OWNERS ARE RESPONSIBLE FOR COMPLYING WITH ALL APPLICABLE CODES AND STATUTORY OR REGULATORY REQUIREMENTS. THIS SPECIFICATION IS NOT INTENDED TO CONSTITUTE OR RENDER ENGINEERING, ARCHITECTURAL, LEGAL OR OTHER PROFESSIONAL SERVICES OR ADVICE NOR SHOULD IT BE A SUBSTITUTE FOR SUCH SERVICES OR ADVICE FROM AN EXPERIENCED PROFESSIONAL DIRECTED TO THE SPECIFIC DESIGN SITUATION. WHILE THE INFORMATION IN THE SPECIFICATION IS BELIEVED TO BE ACCURATE, THE GVRD SHALL NOT BE LIABLE FOR DAMAGES ARISING FROM ERRORS OR OMISSIONS IN THIS SPECIFICATION.



## PROJECT WASTE MANAGEMENT

### 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.
- .3 All waste going to disposal must be disposed of at a facility 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."

*Edit to suit project*

*Note to the Specifier*

*Definitions for the purpose of this specification. The following definitions apply:*

- .a Demolition: Rapid destruction of a building with or without prior removal of hazardous materials.*
- .b Recycle: any process by which waste and recyclable materials are transformed, or collected for the purpose of being transformed, into new products or raw materials.*
- .c Reduce: decreasing the volume, weight or toxicity of materials entering the waste stream, including activities which result in greater ease or efficiency of reuse of a product.*
- .d Reuse: repeated use of a product in the same form but not necessarily for the same purpose.*
- .e Salvage: removal of structural and non-structural building materials from residential, industrial, commercial and institutional buildings demolition projects for the purpose of reuse or recycling.*

#### 1.2 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 the GVRD's "3Rs Code of Practice for the Building Industry." Refer also to "Job Site Recycling: A Guide for Builders and Developers" and "Demolition & Salvage: A Guide for Developers and Renovators." All documents are available from the GVRD, Policy and Planning Department, Telephone: 437-GVRD(4873). Website address: [www.gvr.bc.ca/services/garbage/index.html](http://www.gvr.bc.ca/services/garbage/index.html).

### 1.3 WASTE MANAGEMENT PLAN

#### *Edit to Suit Project*

- .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 the directories of hauling services, demolition and salvage contractors available from the GVRD, Policy & Planning Department. These lists are not necessarily complete. The Contractor may use any of these or other service providers).
  - .2 Alternatives to Land filling: 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 the directories of service providers).
  - .3 List of compulsory materials to be recycled, shall include, at minimum, the following designated materials:
    - .1 Old corrugated cardboard.
    - .2 Clean dimensional wood, palette wood.
    - .3 Concrete/Brick/Concrete Block/Asphalt.
    - .4 Scrap Metal.
    - .5 Drywall.
    - .6 Landclearing debris.
  - .4 List of optional 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 commingled 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 The contractor is required to maintain way-bills, invoices and other documentation confirming that all materials have been hauled to the required locations, and to submit this documentation at the completion of the project if requested by the Owner.
- .6 Waste Management Plan Implementation:

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- .1 Manager: The Contractor shall designate an on-site party (or parties) responsible for instructing workers and overseeing and recording 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 Consultant and the Owner.
- .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 Hazardous wastes: Hazardous wastes shall be separated, stored, and disposed of in accordance with the requirements of the authorities having jurisdiction including the Provincial Waste Management Act and B.C. Special Waste Regulation.
- .6 Project Waste Summary: The Contractor shall submit with the final Application for 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. Submitted with this form will be documentation (receipts/scale tickets/waybills) showing the quantities and types of materials diverted and disposed. Failure to submit this information will render the application incomplete and will result in hold back of the final payment. The Summary shall contain the following information:
  - a. For each material recycled and salvaged 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.

## 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
<b>Total</b>	<b>14.4</b>	<b>4.74</b>	<b>9.2</b>	<b>2.82</b>	<b>13.9</b>	<b>1.14</b>	<b>10.04</b>	<b>1.24</b>

### 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 Summary	
		For Period:	to
Material	Estimated Generation	Recycled/Salvaged/Disposed	Facility
<b>Total</b>			

Signature	Title	Date
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**Explanatory note:**

Column 1 - "Material" -- enter waste materials requiring disposal  
 Column 2 - "Estimated Generation" -- enter estimated volumes (cu.yd.) or quantities (metric tonnes) of waste materials generated  
 Column 3 - "Disposed" -- enter volumes (cu.yd.) or quantities (metric tonnes) of materials disposed  
 Column 4 - "Facility" -- enter end-destination of disposed materials.

# BUILDING DECONSTRUCTION MASTER SPECIFICATION

FEBRUARY 21, 2001

DISCLAIMER: THE HEALTH AND SAFETY OF WORKERS AND THE PUBLIC ARE THE FIRST PRIORITY IN ANY CONSTRUCTION OR DECONSTRUCTION PROJECT. PROJECT OWNERS ARE RESPONSIBLE FOR COMPLYING WITH ALL APPLICABLE CODES AND STATUTORY OR REGULATORY REQUIREMENTS. THIS SPECIFICATION IS NOT INTENDED TO CONSTITUTE OR RENDER ENGINEERING, ARCHITECTURAL, LEGAL OR OTHER PROFESSIONAL SERVICES OR ADVICE OR SHOULD IT BE A SUBSTITUTE FOR SUCH SERVICES OR ADVICE FROM AN EXPERIENCE PROFESSIONAL DIRECTED TO THE SPECIFIC DESIGN SITUATION. WHILE THE INFORMATION IN THE SPECIFICATION IS BELIEVED TO BE ACCURATE, THE GVRD SHALL NOT BE LIABLE FOR DAMAGES ARISING FROM ERRORS OR OMISSIONS IN THIS SPECIFICATION.



SECTION 02050 - DECONSTRUCTION

PART 1 - GENERAL

1.1 WASTE MANAGEMENT GOALS FOR THE PROJECT

*Edit to suit project* .1 The Owner has established that deconstruction for this Project, complete or partial in the case of renovations, shall be carried out in such a way as to salvage for reuse and recycling the largest amount of material possible. Processes shall be employed that ensure the prevention of damage to these materials due to mishandling, improper storage, contamination, inadequate protection or other factors.

.2 The work of this section shall be performed in conjunction with Section 01505 Project Waste Management (GVRD Master Specification).

*Note to Specifier:*

*The options for reuse of salvaged materials include:*

- *Reuse by Owner on this site.*
- *Reuse by Owner on another site.*
- *Resale by Contractor on or off site.*

1.2 SECTION INCLUDES

- .1 Preparation and protection of materials to be salvaged.
- .2 Dismantling of designated items and materials.
- .3 Storage of salvaged items and materials.
- .4 Distribution and removal from site of salvaged items and materials.

1.3 RELATED SECTIONS

*Edit to suit project*

*Note to Specifier*

*A list of salvageable and recyclable items and details of deconstruction by product/materials is appended to this specification. Refer to Handling and Storage Procedures. Refer also to the "Demolition and Salvage: A Guide for Developers & Renovators" and "Old to New Design Guide Salvaged Materials in New Construction" available from GVRD Policy and Planning Department. Telephone: 437-GVRD(4873), Website: [www.gvr.bc.ca/services/garbage/index.html](http://www.gvr.bc.ca/services/garbage/index.html).*

*Definitions for the purpose of this specification. The following definitions apply:*

- .a Demolition: Rapid destruction of a building with or without prior removal of hazardous materials.*
- .b Deconstruction: Taking a building apart in a manner that achieves safe removal and disposal of hazardous materials and maximum salvage and recycling of materials.*
- .c Reuse: repeated use of a product in the same form but not necessarily for the same purpose.*
- .d Salvage: removal of structural and non-structural building materials from residential, industrial, commercial and institutional buildings deconstruction projects for the purpose of reuse or recycling.*
- .e Recycle: Any process by which waste and recyclable materials are transformed or collected for the purpose of being transferred into new products.*

#### 1.4 QUALIFICATIONS

- .1 Salvage or Demolition Firm: Company(ies) experienced and specializing in performing the Work of this Section with documented experience in similar types of deconstruction work.
- .2 Qualifications of Workers: Provide a Supervisor who shall be present at all times during the deconstruction work and who shall be thoroughly familiar with the work required and who shall direct all work. Provide one (1) person on site who is responsible for maintaining the safety barriers and protection of the workers and the public.

#### 1.5 REGULATORY REQUIREMENTS

- .1 Conform to applicable codes and regulations for deconstruction of buildings, safety of adjacent structures, dust control, and disposal and removal of common and hazardous waste. Refer also to Article 1.6 of this section.
- .2 Codes and Regulations: Complete all deconstruction work according to the requirements of Municipal Building By-laws, the Provincial Workers' Compensation Board Regulations, BC Waste Management Act and Special Waste Regulation, and the Canadian Construction Safety Code.
- .3 Obtain required permits from authorities having jurisdiction.
- .4 Notify the Owner and affected utility companies before starting Work, and comply with their requirements.
- .5 Do not close or obstruct safety exits, adjacent sidewalks, hydrants, parking or storage areas without prior approval of Owner.
- .6 Conform to applicable regulatory procedures when discovering hazardous or contaminated materials not documented prior to this Contract.

- .7 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.

*Note to Specifier: For a listing of licensed facilities, contact the GVRD Solid Waste Regulatory program at 436-6802.*

## 1.6 EXISTING CONDITIONS

- .1 The Contractor shall accept the site as it exists and will be responsible for all deconstruction work as required.
- .2 The Contractor shall visit the site at his own expense prior to the submission of tenders and must take whatever time is required to ascertain existing site conditions and surrounding features related to the proposed deconstruction, and ensure himself that conditions are suitable for execution of the work.
- .3 Where non-visible (ie. concealed by other materials) conditions upon exposure, are revealed to be other than those indicated in the Contract Documents, the Contractor shall immediately inform the Consultant, should such variance of conditions result in a contemplated change to the cost of the work. Should an alternate method of deconstruction or change of materials be appropriate, the Consultant shall immediately give his decision before the Work proceeds.

*Note to Specifier: Edit depending on hazardous waste is included.*

- .4 If during the course of deconstruction Work, the Contractor observes or suspects the existence of hazardous materials in areas of the structure or components of the buildings not previously noted, the Contractor shall immediately stop Work in the immediate area and notify the Owner;

*Note to Specifier: Choose either .a or .b.*

- .a who will, under separate contract, remove or encapsulate the hazardous materials.
- .b and remove hazardous materials in a manner consistent with the Occupational Health & Safety Regulation, General Hazard Requirements of the Workers’ Compensation Board of the Province having jurisdiction, and other applicable regulations.
- .5 Handle and dispose of all hazardous and banned materials in accordance with the Special 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.

*Note to Specifier: Delete the following clause if the project involves complete deconstruction of the building.*

- .6 Prior to start of work arrange for a site visit together with Consultant, to examine existing exterior and interior site conditions adjacent to deconstruction and new construction work. The Contractor at his expense shall be responsible for taking pictures of any existing damage and record same in writing to avoid any disputes at a later date.

#### 1.7 DECONSTRUCTION PLANNING

- .1 Pre-demolition Audit
- .a Contractor to provide Owner with an inventory of quantities of materials to be salvaged, recycled or disposed of. Materials shall be quantified using industry standard units of measurement of each item, as noted in the attached sample Deconstruction Material Audit form or on a Contractor generated form containing the same information.
- .b The primary objective of a pre-demolition audit is to determine the quantities of reusable and recyclable building materials and quantities of materials to be disposed of.
- .2 Contractor to provide owner with a Deconstruction Plan which shall include:
- .a Quantities for materials to be salvaged for reuse, recycled and sent for disposal.
- .b Destination of materials listed in .a above.
- .c Deconstruction methodology and sequencing.
- .d Schedule for deconstruction.
- .e Location, security and protection of storage areas (if materials are to be stored on site).
- .f Details on materials handling and removal procedures on project sites with space constraints.

#### 1.8 MATERIAL HANDLING

- .1 Materials Handling Procedures: Prevent contamination of materials to be salvaged and handle materials consistent with requirements for acceptance by designated facilities. Refer to GVRD Waste Management Master Specification, Section 01505 Project Waste Management.

*Note to Specifier: Where Section 01505 Project Waste Management is not used substitute the following:*

- .1 *Materials Handling Procedures: Prevent contamination of materials to be salvaged and recycled 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.*
- .2 Materials to be salvaged shall be handled in the same manner as for similar new materials.

#### 1.9 SUBMITTALS

- .1 Submit pre-demolition audit and deconstruction plan prior to start of work.

- .2 Project Waste Summary: The Contractor shall submit with the final Application for Payment a summary of waste materials salvaged, recycled and disposed of by the Project using the Deconstruction Material Audit form appended to this specification or a form generated by the Contractor containing the same information. Submitted with this form will be documentation (receipts/scale tickets/waybills) showing the quantities and types of materials diverted and disposed. Failure to submit this information will render the application incomplete and will result in hold back of the final payment. The Summary shall contain the following information:
  - a. 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 or 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.

#### 1.10 COORDINATION AND COOPERATION

- .1 The Contractor shall take every common and reasonable precaution to avoid damage and minimize interruption to adjacent property and services. All costs associated with making good any damage and/or providing temporary service or protection shall be borne by the Contractor.

*Note to Specifier: The following applies only to renovation (partial deconstruction) projects.*

- .2 Cooperate and coordinate with the work of other related trades on which the work of this section depends, in order that the work may proceed in an orderly and timely basis in accordance with the Contractor's schedule and to avoid duplication of costs and work.
- .3 Obtain written permission from Owner when deconstruction equipment will traverse, infringe upon, or limit access to other areas of the facility.

#### PART 2 - PRODUCTS

- not applicable

#### PART 3 - EXECUTION

##### 3.1 PREPARATION

- .1 Mark location of all utilities available in the Lower Mainland – Contact “B.C. Gas Line Location” at 1-800-474-6886 (this service will initiate information to each of the following groups: B.C. Gas, Shaw Cable, Telus and municipality in which the project is located) to receive service details and on site consultation.
- .2 Shut-off, disconnect, cap-off and seal all plumbing, mechanical, and electrical services, in accordance with the requirements of the authorities having jurisdiction, before starting deconstruction.
- .3 Clearly mark location of all salvaged material's storage areas as indicated on the Deconstruction Plan and provide and erect barriers and security devices as required.

### 3.2 PROTECTION

*Note to Specifier: The following clauses should be edited to suit renovation or complete deconstruction projects.*

- .1 Conduct operations with minimum interference to public or private accesses. Maintain protected egress and access at all times.
- .2 Cease operations immediately if adjacent structures appear to be in danger. Notify Owner. Do not resume operations until directed by Owner.
- .3 Provide and maintain all legal and necessary guards, railings and warning signs during the execution of the work to fully protect all persons and Owner from loss, damage, death or injury through the neglect, carelessness or incompetence of the Contractor or his employees or the condition or handling of equipment.
- .4 It is the Contractor's responsibility to ensure that the methods and equipment used to deconstruct the various areas do not exceed the safe loading capacity of the structure or cause unnecessary damage to sections of the structure which will form part of the finished work. Engage the services of a Professional Engineer registered in the Province of British Columbia as necessary to ensure the safe deconstruction of the work.
- .5 The Contractor shall assume full responsibility for the design and adequacy of any temporary shoring and/or bracing required during deconstruction. Include all necessary signs, barricades and screens as required for the safety of the structure, third parties and workmen.
- .6 Protect site improvements such as sidewalks, curbs, existing landscaped and asphalt areas, and all interior finishes that lie along the path of removal.
- .7 Prevent debris from blocking items including, but not limited to, surface drainage inlets and systems, elevators, mechanical and electrical systems which must remain in operation.
- .8 Prevent overloading of any part of the building. Do not cut, drill or otherwise sleeve any structural member, slab or demising wall, without written approval of the Consultant.
- .9 Provide temporary connections for emergency lighting, lighting, sprinklers and fire alarms as work proceeds.
- .10 Protect existing structures, equipment and machinery which are not to be dismantled or salvaged.
- .11 Protect existing fixtures and services during the work. Any fixtures that need to be removed to complete the work shall be removed carefully and stored by the Contractor. The Contractor shall clean and have items reinstalled as noted, required or as directed.
- .12 Provide temporary enclosures for securing off of work and the maintenance of any services necessary to the proper and efficient operation of the project.
- .13 Where applicable the Contractor shall separate the work being done in existing buildings from the remainder of the building by using solid hoardings and dustproof screens.

- .14 Where work is confined inside a room the room door shall be temporarily weatherstripped to prevent dust from leaving the room. Existing fixtures and furniture shall be protected with tarps or solid hoarding.
- .15 Air supply and return ducts and chases shall be securely sealed or temporary filters installed to prevent migration of dust and noise through the air system.
- .16 All safety exits must be maintained throughout the duration of this work. This shall include the provision of temporary exit stairs supplied and engineered by the Contractor, as indicated on the drawings.

### 3.3 DISMANTLING AND SALVAGE REQUIREMENTS

- .1 Remove and store materials to be salvaged, in a manner to prevent damage. Store and protect in accordance with requirements for maximum preservation of material. Handle all salvaged materials as for new materials.

*Note to Specifier: For details on salvage and storage requirements for selected materials, refer to Handling and Storage Procedures appended to this specification.*

- .2 Materials that cannot be salvaged for reuse shall be source separated for recycling including wood, metal, concrete and asphalt. Refer to the Project Waste Management (GVRD Master Specification) for detailed recycling procedures.
- .3 Remove materials that cannot be salvaged or recycled and dispose of in accordance with applicable codes at licensed facilities.
- .4 Do not bury materials on site unless it can be processed for use as fill, is authorized by the Owner and meets all applicable Provincial, Regional and Municipal codes and policies.
- .5 Remove trees and shrubs suitable for reuse and store on site appropriately to prevent damage where designated for reuse.
- .6 Ensure that before and during deconstruction the structure is protected from damage until that part of the structure is ready to be deconstructed.

*Notes to Specifier: The following are examples of additional clauses suitable for renovation (partial deconstruction). Edit to suit.*

- .7 Deconstruct parts of existing building as shown on drawings and in accordance with submitted Deconstruction Plan. Include removal or removal and relocation of equipment, fixtures, and services as indicated.
- .8 Where existing materials are to be re-used in the work, use special care in removal, handling, storage and re-installation to assure proper function in the completed Work. Reinstallation shall be performed by trades people skilled in that particular type of work.
- .9 Wherever and whenever the Contractor removes more material than required, directed or intended to be removed as shown on the Drawings or as directed by the Consultant, the replacement of that amount of material will be at the Contractor's expense. Unnecessary damage to parts of the structure forming part of the completed work shall be repaired by the Contractor at the Contractor's expense.

- .10 Remove existing millwork fixtures, services, and building components where required for refinishing, altering or make good of existing surfaces, and replace same as work progresses.
- .11 Where applicable, at locations where reinforcing bars have been cut during deconstruction, mark ends with flag tape and then paint ends of bars with a highly visible colour zinc-rich paint, Galvicon or pre-approved alternate.

### 3.4 STORAGE OF SALVAGED MATERIALS

- .1 Salvaged materials shall be stored in the same manner as for similar new materials.
- .2 Provide security and protective measures to protect the salvaged material from mishandling, theft, vandalism and fire.
- .3 All materials produced during the dismantling of these structures will be separated and stored in areas to be designated by the Owner. Refer also to the Pre-demolition Audit and Deconstruction Plan.

### 3.5 DISTRIBUTION AND REMOVAL OF SALVAGED ITEMS AND MATERIALS

- .1 Remove materials from deconstruction promptly as the work progresses. Materials may be sold at the site provided that this can be accomplished with safety and meets all applicable codes and By-laws.
- .2 The Contractor will prepare a project summary to verify the destination, quantities and values/costs on a material-by-material basis as identified in the Pre-demolition Material Audit. Refer to Article 1.9 Submittals.

END OF SECTION 02050

# Deconstruction Material Audit

Name of Company	Contact Person	Telephone No.
Project Site/Location	Project Type <input type="checkbox"/> Complete Deconstruction <input type="checkbox"/> Partial Deconstruction	Estimated Time for Completion
Building Construction <input type="checkbox"/> Combustible <input type="checkbox"/> Combination (specify) <input type="checkbox"/> Noncombustible	Building Type <input type="checkbox"/> Residential <input type="checkbox"/> Commercial/Industrial	Total Square Footage

Pre-Demolition Audit		Project Summary				
Material	Estimated Generation	For Period:			Facility	Remarks/Comments
		Salvaged	Recycled	Disposed		

Signature	Title	Date
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**Explanatory note:**

Column 1 - "Material" – enter materials targeted for salvage, recycling, and/or disposal  
 Column 2 - "Estimated Generation" – enter the estimated volumes, quantities, or number of salvageable, recyclable, and waste materials generated (e.g., cu. yd. tonnes, bd. ft.)  
 Column 3 - "Salvaged" – enter the volumes, quantities, or number of materials salvaged (e.g., cu. yd. tonnes, bd. ft.)  
 Column 5 - "Recycled" – enter the volumes or quantities of materials recycled (e.g., cu. yd. tonnes, bd. ft.)  
 Column 6 - "Disposed" – enter the volumes or quantities of materials disposed (e.g., cu. yd. tonnes, bd. ft.)  
 Column 7 - "Facility" – enter the end-destination of salvaged, recycled, and disposed materials  
 Column 8 - "Remarks/Comments" – enter any additional comments or details as required

## Handling & Storage Procedures

Item or Material by Division	Suggested Action
<b>02 SITEWORK</b>	
Asphalt Paving	<b>Salvageable</b> - reuse for temporary road construction
Chain Link Fencing	<b>Salvageable</b> - roll up chain link and cut off posts to maximum length allowable - all accessories (tops, clamps, bolts, straps, etc.) should be kept together in a container
Wood Fencing	<b>Salvageable</b> - if possible, dismantle in sections for easy re-erection - cut posts off at ground level
<b>03 CONCRETE</b>	
Cast-in-place Concrete	Recyclable - typically too large for salvage and reuse
Precast Concrete	Recyclable - typically too large for salvage and reuse
<b>04 MASONRY</b>	
Concrete Block	<b>Salvageable</b> - if not concrete filled - recyclable if filled with concrete
Paving Stones	<b>Salvageable</b> - stack and palletize for easy removal
Brick	<b>Salvageable</b> - if set with lime-based mortar - recyclable if set with concrete
Decorative Concrete Block	<b>Salvageable</b> - if not concrete filled - recyclable if filled with concrete
<b>05 METALS</b>	
Reinforcing Steel (rebar)	Recyclable - usually imbedded in concrete, therefore not reusable
Steel Flashing	Recyclable - usually not in suitable condition for reuse
Interior Metal Wall Studs	Recyclable - usually too time-consuming to save in suitable condition for reuse, therefore not cost effective
Structural Steel	<b>Salvageable</b> - includes I-Beams, H-Beams, Square Tubing, Pipe, and Chanel Iron - ensure care is taken to keep straight - separate by size
Cast Iron	Recyclable - usually too old and brittle for reuse
Copper	Recyclable - rarely salvageable due to the possibility of damage while salvaging
Aluminum Soffit	Recyclable - usually not in suitable condition for reuse
Misc. Steel	<b>Salvageable</b> - includes Pipe, Q-decking, Square-tubing, and Wilson joists - prior to reuse must determine the item's structural ability to meet current Building Code - recyclable if item is bent or structural ability is compromised
<b>06 WOOD &amp; PLASTICS</b>	
Regular Wood Framing	<b>Salvageable</b> - all lumber should be slated, stacked and banded according to dimension and lengths - stacks should be kept uniform (ensure piles fit in accordance with truck deck, 2 piles side by side - each pile a maximum width of 4' each including dunnage, height of piles should be kept to 3' to 4' maximum)
Pressure Treated Wood Framing	<b>Salvageable</b> - same as regular wood framing
Regular Plywood Sheathing	<b>Salvageable</b> - stack in piles keeping full sheets together and partial sheets together in lots of 50 pieces - separate by ¼", ½", ¾" etc. - recommend stacking nail side to nail side - materials should be kept dry by covering with plastic sheeting (which also allows for air flow)
Pressure Treated Plywood Sheathing	<b>Salvageable</b> - same as regular plywood sheathing
Laminated Beams	<b>Salvageable</b> - beams should be kept dry by covering with plastic sheeting (which also allows for air flow) - beams should be supported in such a manner as to keep them straight and should be slated to allow air flow when stacked
Wood Truss Joists	<b>Salvageable</b> - joists should be supported in such a manner as to keep them straight and should be slated to allow air flow when stacked
Heavy Timbers/Posts	<b>Salvageable</b> - all timber should be sorted according to dimension and length - timber should be slated to allow air flow - all damaged ends should be trimmed
Washroom Counters	<b>Salvageable</b> - if fixtures are removed, counters can be stored vertically (like doors) - should be kept dry

Item or Material by Division	Suggested Action
<b>07 THERMAL &amp; MOISTURE PROTECTION</b>	
Roofing Gravel	<b>Salvageable</b> - reusable
Fiberglass Bat Insulation	<b>Salvageable</b> - prevent from getting wet
Rigid Fiberglass Insulation	<b>Salvageable</b> - prevent from getting wet
Plastic sheeting Rigid Insulation	<b>Salvageable</b> - stack and band for easy transport
Copper Flashing	Recyclable - usually too time-consuming to save in suitable condition for reuse, therefore not cost effective
Roof Drains, Metal	Recyclable - usually too time-consuming to save in suitable condition for reuse, therefore not cost effective
<b>08 DOORS &amp; WINDOWS</b>	
Doors, Metal	<b>Salvageable</b> - remove with full frame and hardware - apply a metal self tapping screw through the top of the door to hold it in the frame as a unit - label keys belonging to each door
Doors, Wood	<b>Salvageable</b> - remove with full frame and hardware - nail the door through the frame to hold it from falling out of jam - label keys belonging to each door
Bi-Fold Doors, Metal	<b>Salvageable</b> - remove all hardware parts and attach to door (e.g. in plastic zip lock bags) - wrap track on edge of door with duct tape
Bi-Fold Doors, Wood	<b>Salvageable</b> - remove all hardware parts and attach to door (e.g. in plastic zip lock bags) - screw track on edge of door
Overhead Doors	<b>Salvageable</b> - must be removed carefully (as doors have spring assembly) - all door hardware should be kept together - (hinges, screws, rollers, guides etc.) - door panels should be stacked face to face - track should be marked left and right - note, it is very important to keep all parts
Patio Doors	<b>Salvageable</b> - remove and stand vertically with drains to the bottom
Metal Sliding Doors	<b>Salvageable</b> - dependent on size and condition of doors and hardware - recyclable otherwise if too large or not in suitable condition
Mechanical Closures	<b>Salvageable</b> - dependent on age and physical condition
Panic Hardware	<b>Salvageable</b> - keep all parts together (e.g. in plastic zip lock bags)
Pre-Finished Aluminum Thermal Windows	<b>Salvageable</b> - dependent on the size - smaller windows should always be salvaged but larger windows can be difficult to resell (especially if fixed/non-opening)
Metal Sash Windows	<b>Salvageable</b> - if small but limited marketability - recyclable otherwise by removing glass and recycling metal frame
Glass Panels	<b>Salvageable</b> - limited marketability - store vertically or horizontally - ensure panels are level or supported in order to prevent damage to the seal
Unframed Glass Mirrors	<b>Salvageable</b> - store vertically on either a carpet, cardboard, or rubber surface for protection - recommend storing face to face
Store Fronts	<b>Salvageable</b> - best to be keep in one unit - store on A-frame rack and tie back
Skylights	<b>Salvageable</b> - ensure that seal is not broken - store where not affected by wind
<b>09 FINISHES</b>	
Carpet/Carpet Tiles	<b>Salvageable</b> - if in very good condition
Terra Cotta Tile	<b>Salvageable</b> - dependent on quantities available, since sometimes difficult to match if product is obsolete
Metal Base Board	Recyclable - usually too time-consuming to save in suitable condition for reuse, therefore not cost effective
Wood Base Board	<b>Salvageable</b> - remove, denail (if possible), stack face to face, and hold together with duct tape - keep sizes and lengths together (if possible)
Hardwood Flooring	<b>Salvageable</b> - if tongue and groove flooring - remove, denail, stack face to face, and hold together with duct tape - keep lengths together (if possible) - thin strip flooring is not salvageable (i.e. too thin for refinishing)
Gypsum Panels	Recyclable
Wood Paneling	<b>Salvageable</b> - if in suitable condition (otherwise not cost effective) - recyclable otherwise (with clean wood)
Metal Suspension System	Recyclable - usually too time-consuming to save in suitable condition for reuse, therefore not cost effective

Item or Material by Division	Suggested Action
Specialty Wood Finishes	<b>Salvageable</b> - includes mantels, built-in shelving, bookcases, crown moldings, and window sash - keep all trim work where possible
Cabinets	<b>Salvageable</b> - includes kitchen and bathroom cabinets - if possible, take a picture of the cabinet in place prior to removal as this will give potential purchasers a better idea of how the cabinets look in place
<b>10 SPECIALTIES</b>	
Toilet Partitions	<b>Salvageable</b> - must ensure all hardware is available
Framed Glass Mirrors	<b>Salvageable</b> - store vertically on either a carpet or rubber surface for protection - recommend storing face to face
Towel Racks, Soap Dispensers, and Other Washroom Accessories	<b>Salvageable</b> - for commercial products ensure all keys to open units are included
Shower Stalls	<b>Salvageable</b> - if acrylic stalls - ensure the stall is suitable condition and not cracked or overly worn
Chalk boards and White boards	<b>Salvageable</b> - limited marketability
Metal Lockers	<b>Salvageable</b> - for ease of handling and resale, break into units of 6 or less
Old Hardware	<b>Salvageable</b> - includes glass door knobs, hinges, and antique items
<b>11 EQUIPMENT</b>	
Household appliances	<b>Salvageable</b> - if in suitable condition - includes fridges, stoves, stove hoods, dish washers, freezers, washers, and dryers
<b>12 FURNISHINGS</b>	
Metal File Cabinets	<b>Salvageable</b> - only if in very good condition
Metal Shelving Unit	<b>Salvageable</b> - when dismantling ensure all bolts, nuts and additional parts are kept together - recommend marking sections in order to make it easier to re-erect
Commercial Metal Racking	<b>Salvageable</b> - when dismantling ensure all bolts, nuts and additional parts are kept together - recommend marking sections in order to make it easier to re-erect
Metal Desks	<b>Salvageable</b> - if in suitable condition - recyclable otherwise
Wood Desks	<b>Salvageable</b> - if in suitable condition
<b>14 CONVEYING SYSTEMS</b>	
Winches	<b>Salvageable</b> - if in suitable mechanical condition - recyclable otherwise
<b>15 MECHANICAL</b>	
Toilets	<b>Salvageable</b> - limited marketability due to current Plumbing Codes (white toilets offer the best resale opportunities) - recyclable otherwise (sink with concrete and taps with metals)
Urinals	<b>Salvageable</b> - ensure there are no cracks and the hardware is working - recyclable otherwise (sink with concrete and taps with metals)
Ceramic Sinks	<b>Salvageable</b> - if in suitable condition, recyclable otherwise (sink with concrete and taps with metals)
Stainless Steel Tanks	<b>Salvageable</b> - dependent on previous usage (sometimes required to destroy for contamination reasons) - recyclable otherwise
Janitor Sinks	<b>Salvageable</b> - dependent on its condition - recyclable if made of old cast iron
Bath Tubs	<b>Salvageable</b> - dependent on its condition and colour (white bath tubs and old claw foot tubs offer the best resale opportunities)
Radiators	<b>Salvageable</b> - dependent on size (for ease of handling, 20 to 25 ribs would be the maximum suitable size for salvaging) and condition - recyclable otherwise
Hot Water Tanks	<b>Salvageable</b> - if year 1995 or newer - recyclable otherwise
Suspended Blow Heaters	<b>Salvageable</b> - if year 1990 or newer - recyclable otherwise
Wall Mount Radiators	<b>Salvageable</b> - dependent on its condition - recyclable otherwise
Wall Mount Electric Radiators	<b>Salvageable</b> - dependent on its condition - recyclable otherwise
Mechanical Water Pumps & Tanks	<b>Salvageable</b> - dependent on its condition - recyclable otherwise
Oil Interceptor	Recyclable
Oil Storage Tank	<b>Salvageable</b> - dependent on previous usage (sometimes required to destroy for contamination reasons) - recyclable otherwise
Ventilation Ducting	<b>Salvageable</b> - dependent on size and condition - recyclable otherwise
Metal Ducting\Ventilation	<b>Salvageable</b> - dependent on size and condition - recyclable otherwise

Item or Material by Division	Suggested Action
Stainless Steel Ducting\Ventilation	<b>Salvageable</b> - dependent on size and condition - recyclable otherwise
Copper Ducting\Ventilation	<b>Salvageable</b> - dependent on size and condition - recyclable otherwise
Aluminum Ducting\Ventilation	<b>Salvageable</b> - dependent on size and condition - recyclable otherwise
Piping	<b>Salvageable</b> - dependent on size and condition - recyclable otherwise
Exhaust Hood, Galvanized Metal	<b>Salvageable</b> - dependent on size and condition - recyclable otherwise
Exhaust Hood, Stainless Steel	<b>Salvageable</b> - dependent on size and condition - recyclable otherwise
Supply Air Units	<b>Salvageable</b> - dependent on age, condition, and marketability - specialty item
Return Air Metal Grill	<b>Salvageable</b> - if in suitable condition or collectable, recyclable otherwise (with metals)
Fresh Air Metal Diffuser	<b>Salvageable</b> - if in suitable condition or collectable, recyclable otherwise (with metals)
Fire Bells	<b>Salvageable</b> - if in suitable condition or collectable, recyclable otherwise (with metals)
Air Receiver Tank	<b>Salvageable</b> - based on marketability - specialty item
Compressor Tank	<b>Salvageable</b> - based on marketability - specialty item
Compressor Motor	<b>Salvageable</b> - dependent on age and condition - recyclable otherwise
After Cooler	<b>Salvageable</b> - based on marketability - specialty item
Boilers (hot water heating)	<b>Salvageable</b> - dependent on age, size and condition - recyclable otherwise
HVAC Roof Systems	<b>Salvageable</b> - dependent on age and condition - recyclable otherwise
Gas Furnaces	<b>Salvageable</b> - dependent on size and condition and if year 1995 or newer - recyclable otherwise
<b>16 ELECTRICAL</b>	
Transformers	Usually tested for PCBs and if confirmed, then handled as a special waste - <b>salvageable</b> otherwise
Switch Boxes	<b>Salvageable</b> - dependent on age, size and condition - recyclable otherwise
Receptacle Switches	<b>Salvageable</b> - dependent on age and condition - landfilled otherwise
Receptacle Plugs	<b>Salvageable</b> - dependent on age and condition - landfilled otherwise
Heat Detectors	<b>Salvageable</b> - dependent on age, size and condition - landfilled otherwise
Exhaust Fans	<b>Salvageable</b> - dependent on age, size and condition - recyclable otherwise
Electrical Ceiling Blade-Fans	<b>Salvageable</b> - dependent on age, size and condition - recyclable otherwise
Incandescent Light Fixtures	<b>Salvageable</b> - dependent on age, size and condition - recyclable or landfilled otherwise
Fluorescent Light Fixtures	Usually tested for PCBs and if confirmed, then handled as a special waste - <b>salvageable</b> otherwise - dependent on age and condition
Battery Lighting Fixtures (wall mount)	<b>Salvageable</b> - dependent on age (as sometimes batteries are limited to holding a charge) - landfilled otherwise
Exit Lights	<b>Salvageable</b> - dependent on age (as sometimes batteries are limited to holding a charge) - landfilled otherwise
Panel Boxes	<b>Salvageable</b> - dependent on age, size and condition - recyclable otherwise
Commercial Vapor Lights	<b>Salvageable</b> - dependent on age and condition - landfilled otherwise
Street Lights on Poles	<b>Salvageable</b> - dependent on age, size and condition - recyclable otherwise