 Environment, Health & Safety Office	SOP #:	EHS-0086	
	Revision #:	1.1	
	Implementation Date:	1/14/10	
Page #:	1 of 4	Last Reviewed/Update Date:	4/29/11
SOP Owner:	Bret Dyer	Approval: Joe Pinciario	Lou DiBerardinis, EHS Director

Construction and Demolition (C&D) Waste Management

1. Purpose / Background

MIT has developed Sustainability Goals. These goals are intended to foster the recycling and conservation of materials. Construction and Demolition (C&D) Wastes have been identified as a major target for reuse and recycling, for several reasons:

- C&D debris typically represents a large volume of material;
- Many of the waste streams generated during building demolition and construction projects are highly recyclable at reasonable prices;
- Massachusetts banned landfill disposal of C&D debris, beginning in 2003.

Sustainability will be a key criterion considered in all campus initiatives that affect the environment. MIT will demonstrate that exceptional sustainability levels can be achieved within realistic parameters by balancing initial costs, life cycle costs, and environmental impacts. The Institute will achieve these sustainability goals, and seek continuously to improve upon them over time, through the broad participation of the General Contractors, Construction Managers, Subcontractors and Architects working on renovation, demolition and new building construction projects at MIT.

2. Scope

MIT is committed to becoming a leader in environmentally sustainable operations, development of new and renewed facilities, and education. This SOP applies to all space change/renovations, new building construction, demolition and building maintenance/repair activities.


Asphalt pavement, brick and concrete (ABC) rubble, such as the rubble generated by the demolition of buildings, must be handled in accordance with the Massachusetts solid waste regulations. These regulations allow and encourage the recycling/reuse of ABC rubble. ABC wastes are banned from disposal at solid waste facilities and cannot be disposed at landfills, incinerators or taken to transfer stations for subsequent transfer to a solid waste disposal facility unless conditions for an exception are met. ([See 310 CMR 19.017](#))

MIT requires that, as a minimum, the following materials must be recycled;

1. Corrugated Cardboard.
2. Clean dimensional wood.
3. Uncoated asphalt, bricks, and concrete (ABC).
4. Metals including, but not limited to, stud trim, ductwork, piping, reinforcing steel (rebar), roofing, other trim, steel, iron, galvanized sheet steel, stainless steel, aluminum, copper, zinc, lead, brass, and bronze.
5. Any other materials for which reuse, salvaging, or recycling results in a net cost that is equivalent to or less costly than landfill disposal or incineration.

3. Prerequisites

None

	Environment, Health & Safety Office	SOP #: EHS-0086
		Revision #: 1.1
		Implementation Date: 1/14/10
Page #: 2 of 4		Last Reviewed/Update Date: 4/29/11
SOP Owner: Bret Dyer		Approval: Joe Pinciario Lou DiBerardinis, EHS Director

4. Procedures

4.1. Draft Waste Management Plan

A. Draft Waste Management Plan: After receipt of Notice of Award of Bid, and prior to any waste removal, General Contractors hired by MIT for major building renovations, new building construction and/or demolition projects shall submit a Draft Waste Management Plan to the MIT Project Manager. The Draft Waste Management Plan shall contain, as a minimum:

1. A written analysis of the project wastes expected to be generated, by type and approximate quantity.
2. Disposal options: The name of all landfill(s) and/or incinerator(s) proposed for trash disposal, the respective tipping fee(s) for each of these disposal options including transportation costs, and the projected cost of disposing of all Project waste in the landfill(s).
3. Alternatives to Landfill Disposal/Incineration: A list of each material proposed to be salvaged, reused, or recycled during the course of the Project, the proposed end use or local market for each material, and the estimated net cost savings or increase resulting from recycling (versus land-filling) each material, taking into account revenue from the sale of recycled or salvaged materials and tipping fees saved due to diversion of materials.
4. The Draft Waste Management Plan shall include, at a minimum, the materials that are required to be reused or recycled by the State of Massachusetts.

B. Following the submittal of the Draft Waste Management Plan, the Project Manager will review the plan and consider the proposed recycling and waste disposal alternatives. The General Contractor and/or Architect is encouraged to suggest alternatives to typical disposal options in order to increase recycling, reduce costs, or both.


4.2. Waste Stream Disposal Ban

Contractor shall be aware that the Commonwealth of Massachusetts has banned the following waste streams from incineration or landfill disposal. These MIT waste materials may not be included in shipments destined for incineration or landfills. This includes:

1. Lead-acid batteries
2. Leaves and Yard Waste
3. Whole Tires
4. White Goods (Appliances)
5. Cathode Ray Tubes (CRTs) including computer monitors
6. Metal, Plastic and Glass Containers
7. Recyclable Paper
8. Clean Gypsum wallboard

4.3. Waste Management Plan Implementation

A. General Contractors shall designate an on-site party (or parties) responsible for instructing workers in recycling and overseeing and documenting results of the Waste Management Plan for the project.

	Environment, Health & Safety Office	SOP #: EHS-0086
		Revision #: 1.1
		Implementation Date: 1/14/10
Page #: 3 of 4		Last Reviewed/Update Date: 4/29/11
SOP Owner: Bret Dyer		Approval: Joe Pinciario Lou DiBerardinis, EHS Director

- B. General Contractor shall distribute copies of the Waste Management Plan to the MIT Project Manager, the Job Site Foreman, each Subcontractor and the Architect.
- C. The Contractor shall provide on-site instruction of appropriate separation, handling, and recycling, salvage, reuse, and return methods to be used by all parties at the appropriate stages of the project.
- D. The Contractor shall lay out and designate a specific area to facilitate separation of materials for potential recycling, salvage, reuse, and return. Recycling and waste bin areas are to be kept neat and clean and clearly marked in order to avoid contamination of materials.
- E. Waste materials found to meet the definition of "hazardous," (hazardous wastes) shall be separated, containerized and disposed properly. Contact the MIT EHS Office for assistance.

4.4. Reporting Required at Time of Invoicing

- A. The contractor shall submit a Summary of Waste report for materials generated by the project, at the time of invoicing. The Summary shall be submitted on a form acceptable to the MIT Project Manager and shall contain the following information:
 1. The amount (in tons) of material land-filled from the project, the identity of the landfill, the total amount of tipping fees paid, transportation costs (if separate) and the total disposal cost. Include manifests, weight tickets, receipt, and invoices.
 2. For each material recycled, reused, or salvaged from the project, the amount (in tons or cubic yards), the date removed from the jobsite, the receiving party, the transportation cost, the amount of any money paid or received for the recycled or salvaged material, and the net total cost or savings of salvage or recycling each material. Attach manifests, weight tickets, receipts, and invoices.

5. Roles & Responsibilities

Department of Facilities- Coordinate with General Contractors regarding all aspects of construction and demolition waste management including specifying and selection of waste haulers, review and analysis of C&D waste reports and managing recordkeeping.

EHS Office- Provide assistance to the Department of Facilities with regulatory guidance and interpretation, as well as review of waste management reports and other records as needed.

6. Training

Information relating to C&D Waste Management shall be incorporated into the RCRA/universal waste management training class for the Facilities Department.


7. Monitoring Requirements

EHS, in consultation with the Department of Facilities, shall periodically review C&D Waste Management reports and recordkeeping.

8. Record Management

Records pertaining to C&D Waste Management shall be retained indefinitely by DOF with copies sent to the EHS Office.

9. References

	Environment, Health & Safety Office	SOP #: EHS-0086
		Revision #: 1.1
		Implementation Date: 1/14/10
Page #: 4 of 4		Last Reviewed/Update Date: 4/29/11
SOP Owner: Bret Dyer		Approval: Joe Pinciario Lou DiBerardinis, EHS Director

9.1. Standards

Massachusetts Waste Ban Regulations 310CMR 19.017
<http://www.mass.gov/dep/recycle/laws/bansreg.htm>

9.2. SOP/ SOGs

MIT EHS SOP-EHS Requirements for Contractors
MIT EHS SOP-Design and Construction Review, Laboratory and Facility Design
MIT EHS SOP-Hazardous Waste Removal and Disposal
MIT EHS SOP-Universal and Electronic Waste Management

9.3. Supplementary Documents

General Information on Waste Bans
<http://www.mass.gov/dep/recycle/solid/wastebans.htm>

10. Definitions

Construction and Demolition Waste-includes non hazardous wastes, ABC materials and any universal waste generated during building renovations, repair and construction.

ABC wastes- asphalt brick and concrete debris resulting from building renovation construction and demolition.

Waste Management Plan- documents the C&D waste management practices planned for a project, typically developed by the GC/CM, in consultation with MIT.