

SS	WE	EA	MR	EQ	ID
Overview					

Storage & Collection of Recyclables

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Prerequisite 1					

Required

Intent

Facilitate the reduction of waste generated by building occupants that is hauled to and disposed of in landfills.

Requirements

Provide an easily accessible area that serves the entire building and is dedicated to the collection and storage of non-hazardous materials for recycling, including (at a minimum) paper, corrugated cardboard, glass, plastics and metals.

Potential Technologies & Strategies

Coordinate the size and functionality of the recycling areas with the anticipated collection services for glass, plastic, office paper, newspaper, cardboard and organic wastes to maximize the effectiveness of the dedicated areas. Consider employing cardboard balers, aluminum can crushers, recycling chutes and collection bins at individual workstations to further enhance the recycling program.

Summary of Referenced Standard

There is no standard referenced for this credit.

Approach and Implementation

Dense urban areas typically have a recycling infrastructure in place while some less populated areas may still be developing this type of service. Building owners and designers must determine the most appropriate method for creating a dedicated recycling collection area that meets the project occupant's needs and also those of the collection infrastructure. It is possible that recyclable collection and storage space could increase the project footprint in some instances. It is important to address possible indoor environmental quality (IEQ) impacts on occupants due to recycling activities. Those activities that create odors, noise and air contaminants should be isolated or performed during non-occupant hours to maintain optimal IEQ. **Table 1** provides guidelines for the recycling storage area based on overall building square footage. The requirements of this prerequisite do not regulate the size of the recycling area. The intent is for the design team to size the facilities appropriate to the specific building operations, and the information provided below is intended as a resource for that exercise.

Designate well marked collection and storage areas for recyclables including office paper, cardboard, glass, plastic and metals. Locate a central collection and storage area in the basement or at the ground level that provides easy access for maintenance staff as well as collection vehicles. For projects with larger site areas, it may be possible to create a separate central collection area that is not located within the building footprint.

Design considerations for recycling areas should include signage to prevent con-

Table 1: Recycling Area Guidelines

Commercial Building Square Footage [sf]	Minimum Recycling Area [sf]
0 to 5,000	82
5,001 to 15,000	125
15,001 to 50,000	175
50,001 to 100,000	225
100,001 to 200,000	275
200,001 or greater	500

tamination, protection from the elements, and security for high value materials. Security of recyclable collection areas should also be designed to discourage illegal disposal. Allocate recycling space in common areas as well as a centralized collection point. Common areas may be more easily maintained if recycling containers are no larger than 20–25 gallons. It may be beneficial to specify recycling bins that have wheeled carts to transport the recyclables from the common area to a centralized collection area. At the centralized collection point, it is useful to design enough space for a front-loader bin as well as a ramp up to the recycling area.

It may be helpful to research local recycling programs to find the best method of diverting recyclable materials from the waste stream for your particular building location. When allocating space for the centralized collection point of recyclables, it is beneficial to involve the local hauler who will be providing waste management services to the site. Space allocation needs can vary depending upon collection strategies used by the hauler such as comingled or source separated recyclables. For example, if the local hauler accepts comingled recyclables, then it may be possible to reduce the area that would be required if separate collection bins for each material were required. There is no requirement for projects to provide proof of contract for hauling services to achieve this prerequisite.

Where possible, provide instruction to occupants and maintenance personnel on recycling procedures. Encourage activities to reduce and reuse materials before recycling in order to reduce the amount of recyclable volumes handled. For instance, building occupants can reduce the solid waste stream by using reusable bottles, bags and other containers. Consider employing cardboard balers, aluminum can crushers, recycling chutes and other waste management technologies to further enhance the recycling program.

Calculations

There are no calculations required to demonstrate compliance with this prerequisite. **Table 1** is provided as a guideline for sizing recycling areas. The values in this table were developed by the city of Seattle in support of an ordinance requiring minimum areas for recycling and storage of recyclables in commercial buildings. The ordinance is based on the total square footage of the building. Minimum areas for residential buildings were also specified in that reference document.

Another potential source of guidelines for sizing recycling areas is the California Integrated Waste Management Board's (CIWMB) 1999 Statewide Waste Characterization Study, in which the waste disposal rates of 1,200 businesses were measured. See the References section of this prerequisite for details.

Submittal Documentation

This prerequisite is submitted as part of the **Design Submittal**.

The following project data and calculation information is required to document prerequisite compliance using the v2.2 Submittal Templates:

- Confirm that recycling collection areas have been provided, per requirements, to meet the needs of the project.

- Confirm the types of materials that are being collected for recycling.
- Provide an optional narrative describing any special circumstances or considerations regarding the project's prerequisite approach.

Considerations

Environmental Issues

By creating convenient recycling opportunities for building occupants, a significant portion of the solid waste stream can be diverted from landfills. Recycling of paper, metals, cardboard and plastics reduces the need to extract virgin natural resources. For example, recycling one ton of paper prevents the processing of 17 trees and saves three cubic yards of landfill space. Recycled aluminum requires only 5% of the energy required to produce virgin aluminum from bauxite, its raw material. Recycling also reduces environmental impacts of waste in landfills. Land, water and air pollution impacts can all be reduced by minimizing the volume of waste sent to landfills.

Economic Issues

Recycling requires minimal initial cost and offers significant savings in reduced landfill disposal costs or tipping fees. However, recycling activities use floor space that could be used otherwise. In larger projects, processing equipment such as can crushers and cardboard balers are effective at minimizing the space required for recycling activities. Some recyclables can generate revenue which can help to offset the cost of their collection and processing.

Resources

Please see the USGBC website at www.usgbc.org/resources for more specific resources on materials sources and other technical information.

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Websites

California Integrated Waste Management Board

www.ciwmb.ca.gov/WasteChar/

Solid Waste Characterization Database, Estimated Solid Waste Generation Rates

California Statewide Solid Waste Characterization Study

www.ciwmb.ca.gov/Publications/default.asp?pubid=1097

Alternative Waste Calculations

California Integrated Waste Management Board's (CIWMB) Statewide Waste Characterization Study in which the waste disposal rates of businesses are measured.

Earth 911

www.earth911.org/master.asp

(480) 889-2650 or 877-EARTH911

Information and education programs on recycling as well as regional links to recyclers.

Recycling at Work

U.S. Conference of Mayors

www.usmayors.org/USCM/recycle

(202) 293-7330

A program of the U.S. Conference of Mayors that provides information on workplace recycling efforts.

Waste at Work

Inform: Strategies for a Better Environment

www.informinc.org/wasteatwork.php

(212) 361-2400

An online document from Inform, Inc., and the Council on the Environment of New York City on strategies and case studies to reduce workplace waste generation.

Print Media

Composting and Recycling Municipal Solid Waste by Luis Diaz et al., CRC Press, 1993.

McGraw-Hill Recycling Handbook by Herbert F. Lund, McGraw-Hill, 2000.

Definitions

Recycling is the collection, reprocessing, marketing and use of materials that were diverted or recovered from the solid waste stream.

A **Landfill** is a waste disposal site for the deposit of solid waste from human activities.

Building Reuse

Maintain 75% of Existing Walls, Floors & Roof

Intent

Extend the life cycle of existing building stock, conserve resources, retain cultural resources, reduce waste and reduce environmental impacts of new buildings as they relate to materials manufacturing and transport.

Requirements

Maintain at least 75% (based on surface area) of existing building structure (including structural floor and roof decking) and envelope (exterior skin and framing, excluding window assemblies and non-structural roofing material). Hazardous materials that are remediated as a part of the project scope shall be excluded from the calculation of the percentage maintained. If the project includes an addition to an existing building, this credit is not applicable if the square footage of the addition is more than 2 times the square footage of the existing building.

Potential Technologies & Strategies

Consider reuse of existing, previously occupied buildings, including structure, envelope and elements. Remove elements that pose contamination risk to building occupants and upgrade components that would improve energy and water efficiency such as windows, mechanical systems and plumbing fixtures. Quantify the extent of building reuse.

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Credit 1.1					

1 point