

US EPA ARCHIVE DOCUMENT

Deconstruction: New Opportunities for Salvage

Old buildings are constantly being remodeled or torn down to make room for new ones. Because time is a critical element on many projects, the removal of a building is usually done as quickly as possible. The standard practice of demolition involves smashing a structure so the pieces can be quickly and easily taken to the landfill. Although this saves time, there are considerable costs in terms of pollution, wasted resources, and landfill space.

Reusing existing buildings and materials reclaims resources and significantly cuts waste. Deconstruction, the systematic dismantling of a structure, can be used in various degrees in order to salvage usable materials. This can range from reuse of an entire structure or foundation, to select assemblies and systems, to the careful removal of specific materials or items.

Things to Consider when Conducting Salvage Activities

- x Conduct an assessment to identify salvageable materials. A walk-through with deconstruction, demolition, and general contractors can help to identify items that can be reused in any planned new structure or on other current jobs.
- x Obtain “as-built” plans; these will help to identify structural members and other hidden features of a building that are not visible during a walk-through.
- x If time does not allow for extensive salvage, target the easy things. “Cherry-picking” can yield valuable appliances, light fixtures, hardware, architectural millwork, and other custom accessories.
- x Consider materials not only for their utility, but also for their aesthetic value. Reclaimed materials, particularly old growth or rare woods, are very desirable as decorative and finish treatments.
- x Advertise a deconstruction pre-sale: interested individuals can remove and purchase items before demolition begins.
- x Although some materials can be reused, there are many that will need to be removed. Donating unused and salvaged building materials can be accomplished through material exchanges or nonprofit organizations. Many organizations can provide tax donation paperwork.



Bright Ideas

Instead of seeing an old structure as a problem, view it as a resource. By learning to evaluate a structure in terms of its hidden value, educated decisions can be made about how to use a building’s resources. There are salvageable elements in virtually every building.

Additional Information

The C&D Waste Reduction and Recycling series consists of 9 fact sheets, each focusing on a different aspect of waste management. Factsheets in this series include:

- What’s in a Building: Composition Analysis of C&D Debris
- Onsite Source Reduction: Cutting the Scrap
- Setting up a Jobsite Recycling Program
- Deconstruction: New Opportunities for Salvage
- Calculating Effectiveness: The Waste Management Plan
- Reducing Waste for Building Owners
- Waste Recycling Through Commingled Recovery: the Summerland Heights Residential Development
- Deconstruction on Commercial Renovation Projects: the Victoria Street Presbyterian Sanctuary
- Source Reduction in Residential Remodeling: the Las Alturas Adobe

Other resources:

<i>Environmental Resource Guide</i> , American Institute of Architects	(800) 365-2724
<i>Environmental Building News</i> and <i>GreenSpec Product Directory</i>	(802) 257-7300
<i>Environmental Design & Construction Magazine</i>	(847) 291-5224
<i>Deconstruction</i> (video), Materials for the Future Foundation	(415) 561-6530
<i>Builder’s Field Guide</i> , National Association of Home Builders	(202) 822-0200
<i>WasteSpec: Model Green Building Specifications</i> , Triangle J Council of Governments	(919) 549-0551
<i>Sustainable Building Technical Manual</i> , U.S. Green Building Council	(202) 828-7422

Visit these web sites for downloadable publications, listserv information, and links to other green building sites:

www.ciwmb.ca.gov	www.tjcog.dst.nc.us/cdwaste.htm	www.EDCmag.com
www.epa.gov/greenbuilding	www.buildinggreen.com	www.materials4future.org
www.aia.org	www.oikos.org	www.usgbc.org

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For more information please contact the U.S. EPA, Region 9 Office of Pollution Prevention and Solid Waste at (415) 972-3282.

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New Opportunities For Reclaimed Wood

One of the largest components of construction and demolition waste is wood. As old growth forests continue to be depleted, timber prices will only increase. The demand for reclaimed wood products will also rise. Increased deconstruction and salvage activities can help meet this demand.

People who work with wood know that the best quality wood comes from old growth trees. Old growth lumber offers a close, clear grain with few knots, and is generally harder and more stable with less defects than wood from younger trees. Compared with virgin wood that can be purchased today, old growth lumber can span more than twice the distance of younger, lighter woods. Another benefit of older framing lumber is that it can be re-milled. Today a two-by-four piece of dimensional lumber is actually a bit smaller (only 1.5 inches by 3.5 inches). Older two-by-fours were actually right on, leaving an allowance of a quarter inch on each surface for re-planing.

Old growth woods are also aesthetically desirable, and are sought after by craftsmen for use in furniture making, art pieces, and finish treatments. Reclaimed wood can provide all the benefits of old growth wood, but without the environmental costs. The nail holes, fastener marks, and the rich, aged color of used lumber pieces can add to their appeal. Only 5% of North America's old growth forests are still standing, while thousands of board feet of old growth lumber in buildings is demolished and landfilled every year. This is changing, with more and more lumber from old buildings being reclaimed every year.

Reuse versus Recycling

When evaluating alternatives for diverting waste, reuse should be favored over recycling wherever possible. The time that it takes to implement careful removal of items should be weighed against their market value and the availability of local outlets.

There are many items that, if still in good condition, will find a place in the market. However, damaged materials will need to be evaluated carefully. If materials cannot be reused, recycling can provide a cost effective and environmentally preferable alternative to disposal.

Building materials that are readily salvaged:

Appliances	Cabinets
Bricks	Insulation
Doors	Paneling
Flooring	Wood beams
Light fixtures	Dimensional lumber
Metal framing	Ceramic tile
Pipes	Bathroom fixtures
Shelving	Windows



Deconstruction Resources

Reuse Development Organization (ReDO) - Non-profit organization promoting reuse as an environmentally sound, socially beneficial and economical means for managing surplus and discarded materials. <http://www.redo.org>.

Used Building Materials Association - A non-profit, membership based organization representing companies and organizations involved in the acquisition and/or redistribution of used building materials. <http://www.ubma.org>

U.S. Environmental Protection Agency - Construction and demolition debris website including deconstruction information and case studies. <http://www.epa.gov/>

California Resource Recovery Association Construction and Demolition Council - Promotes the advancement of C&D material recovery practices and strives to expand C&D recovery infrastructure and markets. <http://www.crra.com/cdc/index.html>.

Occupational Safety and Health Administration (OSHA) - OSHA regulations place restrictions on the manual handling of asbestos and lead based paint. Visit OSHA online and follow the link to "advisors" to download programs to assist you in determining your responsibilities. <http://www.osha.gov>.

WasteSpec - Provides free detailed model specification language for reducing and recycling construction and demolition debris. www.tjcog.dst.nc.us/cdwaste.htm