



**Boulder County
Land Use Department
Publications**

Deconstruction and Recycling

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Deconstruction and Recycling

BuildSmart code changes affect all new residential construction and additions throughout unincorporated Boulder County and went into effect May 1, 2008.

What is Building Deconstruction and Recycling?

Deconstruction is simply disassembly and material salvage of buildings. In traditional demolition, buildings are knocked down and the materials landfilled. Deconstruction instead involves taking apart portions of buildings and/or removing their contents with the primary goal of reuse and recycling.

Why is this important to our community?

According to EPA, construction activities consume 60 percent of the total raw materials used in the U.S. economy. EPA estimates that 136 million tons of building-related Construction and Demolition (C&D) waste is generated annually, of which 92 percent is from renovation and demolition work. In North America C&D makes up approximately 25 to 45 percent of the waste stream, of this only 20 to 30 percent of C&D waste is recycled. Further, the largest source of human-caused methane emissions (an extremely potent greenhouse gas) is from the decomposition of wastes in landfills.

The average 2,500 square foot American home contains:

- 159 tons of debris = 12,500 cubic feet of debris
- 7,500 Board Feet of lumber = 41 mature trees, or the yearly output of 13 acres of planted pine
- Recycling this lumber saves energy equivalent to 256 gallons of gasoline
- 5,900 lbs. of recyclable steel and 960 lbs. of recyclable plastics
- Recycling these materials saves energy, equivalent to 641 gallons of gasoline

The Deconstruction Institute estimates that for every 3 square feet of deconstruction, enough lumber can be salvaged to build 1 square foot of new construction. At this rate, the US could generate enough recovered wood to construct 120,000 new affordable homes each year.

Deconstruction greatly reduces damage to soil and vegetation at the building site when compared to demolition. In addition, deconstruction creates less dust and noise than demolition.

Deconstruction and Recycling Plan

An important first step of the deconstruction process is a detailed deconstruction plan. This is undertaken by an experienced Deconstruction Professional (DP) via a visual inspection. The DP will produce an inventory of all materials and components (photos are desirable), and a strategy for material removal. The deconstruction plan should include:

1. The name of the Deconstruction Professional;
2. The name of the Deconstruction Contractor;
3. A list of the materials to be recovered, recycled, or reused; and
4. The destination of the materials to be resold.

The plan should be issued to all parties at the outset of the project to ensure a construction process that enables efficient implementation of the deconstruction plan.

Economic Advantage

Compared to demolition, home deconstruction may offer a significant financial advantage. The following example shows the costs and savings from an average 2,500 square foot, 3-bed/2-bath house in which the material was donated to a 501(C)(3) non-profit.

	Deconstruction	Demolition
Physical Lowering of House	-\$17,238	-\$6,000
Disposal of Trash & Debris	-\$4,100	-\$4,100
Appraisal of Salvaged Materials	-\$3,000	\$0
Total Costs	-\$24,338	-\$10,100
Donation Value:	\$88,000	\$0
Tax Savings (After-Tax Value of Donated Materials)	\$29,040	\$0
Total Costs	-\$24,338	-\$10,100
After-Tax Benefit* (Out of Pocket Cost)	\$4,702*	-\$10,100

* See IRS Publication #526 for more information on tax deduction.

Deconstruction/Recycling Roles and Responsibilities

General Contractor:

- Submit Intent to Recycle document with pre-permit application.
- Provide documentation that verifies the weight of material diverted from waste stream at inspection.

Deconstruction Professional:

- Submit Intent to Deconstruct document with pre-permit application.
- Ongoing: maintain receipts or written log of materials donated or sold. Document any variation from Deconstruction Plan.
- Provide documentation that verifies the weight of material diverted from waste stream at inspection.



Required Elements

Visit us on the web to see Boulder County BuildSmart Requirements at: www.BoulderCountyBuildSmart.org

Resources

- EPA Construction and Demolition Material: www.epa.gov/epaoswer/non-hw/debris-new/reuse.htm
- A Guide to Deconstruction: www.huduser.org/publications/pdf/decon.pdf
- ReSource Reclaimed Building Materials: www.resourceyard.org



Deconstruction & Recycling Timeline

1 Pre-Building Permit Application

In addition to standard building application documents you MUST Submit the following:

- Intent to Deconstruct documentation (deconstruction plan, a written description of deconstruction work, or the County Deconstruction Checklist.
- Intent to Recycle documentation in the form of a recycling plan a written description of recycling activity, or the County Recycling Checklist.

2 Site Inspections

In addition to standard site inspections prior to a rough inspection you MUST:

- Provide written verification of building deconstruction.
- Recycling containers must be on-site.

3 Rough Inspections

In addition to required rough inspections prior to a final inspection you MUST:

- Recycling containers must be on-site.

4 Final Inspections

In addition to required final inspections you MUST:

- Provide documentation indicating the weight or volume of materials diverted from the waste stream.

5 Final Approval

Receive Certificate of Occupancy.