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At-A-Glance:

- Two houses were completely deconstructed
- Salvaged materials included:
 - Doors
 - Kitchen cabinets and fixtures
 - Bathroom cabinets and fixtures
 - Oak flooring
 - Lumber
 - Trim
- The homeowners were able to claim over \$50,000 in tax deductions for materials donated from deconstruction of the first house

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Photo Credit: Auburndale Builders

Deconstruction and Building Materials Reuse Case Study

Auburndale Builders Wayland, MA

Summary: Frank Briber and Francis Pollitt wanted to remove two existing houses on their property and replace them with their dream passive house. In order to maximize recycling and reuse from their project, they chose to have both structures fully deconstructed instead of demolished. This case study provides details on the deconstruction of the second house and how deconstruction can reduce the waste and environmental impact of a building removal.

Planning and Preparation

When creating their new house, the homeowners prioritized environmentally responsible design and construction practices. They worked with the lead designer, Donald Grose, to ensure that both the construction of their new house, and the removal of two existing buildings on the property, conserved resources. Grose suggested deconstructing the properties in order to capture reusable materials intact for reuse.



Careful deconstruction of two houses on the property ensured conservation of reusable materials.

The general contractor for the project, Auburndale Builders, worked with a deconstruction contractor to take apart the existing structures. Deconstruction takes more time than demolition, so Grose and Auburndale planned the construction schedule to accommodate deconstruction. The same process to prepare for a building demolition applies to deconstruction: the contractor needs to coordinate with utility companies and the town to make sure all utilities are shut off, and hazardous materials, like asbestos, are remediated.

A licensed remediation specialist removed asbestos tiles that were present. The deconstruction contractor tested painted surfaces for lead and found lead paint on the window trim; the painted trim was then removed using lead safe practices. Safely removing lead-painted materials protects workers and prevents contamination of the site.

Process

Reusable materials from both properties were donated to EcoBuilding Bargains, which is a nonprofit building materials reuse store. Reuse outlets, like EcoBuildingBargains, Boston Building Resources, and Habitat for Humanity ReStores, offer no-cost walkthroughs to help contractors identify which items can be accepted for sale to their customers.

These outlets also often pick the materials up themselves for little or no charge. At this property, a wide variety of materials were reusable, including:

- Doors
- Kitchen cabinets
- Appliances
- Bathroom vanities and fixtures
- Oak flooring
- Lumber
- Trim
- Insulation

In order to remove these materials intact from the building, the deconstruction contractor first performed a “soft-strip” of the property and collected easy to remove, non-structural elements such as doors and cabinets. They stored these materials inside the house to keep them out of the elements while awaiting pickup. To make it easy to load the materials, the deconstruction contractor put all materials in one room with an opening to the outside. EcoBuilding Bargains pulled their box truck right up to this room, and they loaded materials directly from the room into the truck.

When disassembling the actual structure of the house, the deconstruction contractor collected the lumber in a covered 30 yard container to keep it dry. This lumber was also delivered to EcoBuilding Bargains. The contractor put materials that could not be reused, such as drywall and asphalt, in a mixed dumpster. E.L. Harvey hauled this dumpster to their construction and demolition materials processing facility in Westborough, which sorts out recyclable materials. This process diverts as much material as possible from disposal.

Benefits of Deconstruction

Deconstruction significantly reduces the amount of material that goes to disposal, and instead allows usable building materials to make their way to reuse outlets for sale to the public.

Deconstruction provides environmental and monetary benefits over traditional demolition.

By reusing building materials the environmental impact of landfilling those materials is decreased, and this reuse also decreases the need to use virgin building materials. Deconstruction can also provide the property owner with a tax deduction, which in some instances can be significant, and sometimes results in a deconstruction project being less expensive for the property owner than the cost of demolishing the structure.

In this instance, deconstruction of the first house on this property allowed the homeowners to claim a tax deduction of over \$50,000 for the reusable materials they donated to EcoBuilding Bargains. The contractor also benefited financially by not paying disposal fees on donated items.

Both the homeowners and the general contractor were pleased with the deconstruction. As Nick Falkoff of Auburndale Builders notes, they “are looking to use deconstruction on any project we can now.”

For more information on recycling and reuse of C&D materials, see the [RecyclingWorks in MA best management practices for construction and demolition materials](#).



Lumber salvaged from the deconstruction of the house was collected in a 30 yard container to keep it dry, then donated to EcoBuilding Bargains.



Items removed from this house, like this door, are resold to a new owner.