



DECONSTRUCTING DECONSTRUCTION: Dismantling Buildings for Reuse in Connecticut

A resource for building professionals, property managers, and building owners

Understanding Deconstruction

Did you know, that up to 70% of home building materials can be recycled, and up to 25% can be reused ([Delta Institute](#))? This leaves only 5-15% of an entire home that is not reusable or recyclable, however, on average more than 75% is sent to landfills and incinerators during typical demolition ([EPA](#)).

Dismantling buildings for materials reuse may seem intimidating, but a variety of strategies can be employed to reuse building materials. While full deconstruction involves carefully dismantling a building piece by piece to reclaim useable cabinets, fixtures, doors, windows, flooring, and other building materials, there are a variety of methods that are easy to implement. Contractors may choose to deconstruct portions of a building, focus on salvaging certain materials, or start by conducting a clean out of spaces prior to demolition.

Benefits of Deconstruction

Cost: While costs vary by project, deconstruction provides an opportunity to save on disposal costs and receive associated tax deductions when donating to qualified nonprofits, potentially offsetting any additional labor costs.

Marketing: Deconstruction projects small and large are a great way to leverage brand recognition and can highlight your commitment to the community.

Job Development: Reusing and recycling construction and demolition (C&D) materials creates jobs. In fact, deconstruction creates [6 to 8 jobs for every 1 job](#) that demolition creates.

Environmental: Deconstruction reduces greenhouse gas (GHG) emissions and embodied carbon, and preserves natural resources.

Deconstruction Pathways

SCALE: MIN → IMPACT → MAX					
TYPE	Pre-Demo Clean Out	Soft-Stripping	Partial Deconstruction	Full Deconstruction	Adaptive Reuse
DEFINITION	Removing items like furniture that can be donated before the project begins	High value and easy to remove materials like appliances, lighting, cabinetry, and architectural items	Additional material including doors, trim, flooring, and windows	Salvaging all materials with value and outlets	Maintaining a building structure while renovating its interior for different purpose

Planning Ahead

For more involved deconstruction activities advanced planning is important. It can be helpful to plan 6 months to a year ahead of the project start date to provide lead time for creating a waste management plan. This timeline aligns with a typical timeline for large demolition projects, so additional time isn't necessarily needed, rather this is just an alternative route to take. Additionally, bid specifications for a contractor should include parameters for deconstruction. Work with your architect to set deconstruction goals into bid specifications and consider incorporating secondhand materials into the project.

The [EPA's 2018 Advancing Sustainable Materials Management Fact Sheet](#) shows there was 600 million tons of C&D debris generated in the United States in 2018. Of that total, demolition represents over 90 percent while construction represents less than 10 percent. This represents a huge potential for reuse and recycling.

Waste Management Plan

The Connecticut Department of Energy and Environmental Protection (CT DEEP) [waste management plan](#) provides an excellent backbone when creating any project that includes deconstruction, donating materials, or recycling. It communicates the who, what, where, and how of materials management, including where items generated from a project are going, and which sub-contractors, haulers, vendors, onsite staff, and other service providers will be responsible.

A waste management plan can help maximize reuse and recycling by identifying materials that will be diverted from disposal, potentially saving money on disposal costs. With a waste management plan, you can determine what materials you will generate in advance and identify specific waste diversion opportunities, be it through reuse, source separation, or mixed C&D recycling.

Onsite staff should be trained on the waste management plan and the method for deconstructing, consolidating, and transporting materials to their storage locations.



Project Name:

Date:

Draft Solid Waste Recycling and Management Plan

Material	Onsite Storage Location	Transportation	Hauler/Service Provider	Estimated Quantities	
				Quantity	Units
Reusable Materials	i.e. 1 st floor unit	i.e. use dollies or hampers. Take the freight elevator.			
Soils					
Asphalt					
Brick					
Block					
Concrete w/ Rebar					
Arch. Salvage					
Windows					

QUESTIONS? CALL THE ONSITE SUPERVISOR AT: XXX-XXX-XXXX

Material Outlets and Collection Methods Donation

Building materials can often be donated to local nonprofit reuse stores, which often offer free or affordable pickup services. To donate:

- Identify your local reuse store at the start of your project to find out what materials they do and do not accept.
- Contact reuse outlet(s) to schedule a walkthrough at the job site (or share photos of specific items) to verify materials for donation.
- Have items appraised before removal for future tax deductions.
- Remove materials from the building.
- Separate and store materials for donation at the job site in a safe, accessible place. Consider siting a trailer during demolition or deconstruction to store donatable materials as they are removed.

See CT DEEP's [Guide to Local Building Material Reuse Centers](#) and their list of [ReUse Centers and Material Exchanges](#) including CET's EcoBuilding Bargains in Springfield, MA.

Deconstruction is regulated by the [CT Department of Administrative Services \(DAS\)](#), which defines [deconstruction as a form of demolition](#). As a result, deconstruction projects require a [demolition license](#) issued by the Office of the State Fire Marshall.

Source Separation

Most material is taken from construction sites in mixed construction dumpsters and hauled to C&D processing locations. Some materials are challenging for C&D processors to handle and separate and may be better candidates for collecting separately on the jobsite. This is known as source separation. By source-separating some materials, you may be able to increase the overall recycling rate of the project.


If space constraints do not allow for more than one dumpster for collection, some haulers offer live loading, in which materials are loaded into a truck while the hauler waits. Contractors should include dumpster staging in the construction planning and timeline to optimize source separation.

When contracting with haulers for removal of C&D ask where their materials are delivered and what services they have available. The hauler will be able to tell you whether they take mixed containers to a C&D processing facility and whether they offer containers for source-separated materials such as clean gypsum and cardboard.

In the demolition of a residential property, from [The Reuse People of America](#), the savings on disposal costs, coupled with the tax deduction from donated materials, off-set the cost of deconstruction to **save the property owner over \$10,000** when compared to what they would have paid for demolition.

Contact us for more information

If you have any questions about dismantling buildings for materials reuse, contact our hotline at 888-410-3827 or email ReduceWasteCT@cetonline.org.



The Leadership in Energy and Environmental Design (LEED) v4.1 standards require that projects aiming to receive LEED certification target two or three specific materials streams to divert from disposal. Mixed C&D recycling, as generally practiced in Connecticut, can count as one of the required material streams for LEED certification.



AT CET, we believe that each of us has the power to make a difference. The need to tackle climate change and build a just and equitable transition to the low-carbon economy is more urgent than ever. We work with partners throughout the country to transform the way we live and work – for a better community, economy, and environment.

For more than 45 years, our innovative non-profit organization has offered practical solutions to save money, increase the health and comfort of our homes, and help businesses perform better.
We make green make sense.

If you have any questions or feedback, please contact CET:
Phone: 888-410-3827 | Email: ReduceWasteCT@cetonline.org
centerforecototechnology.org/ctwasteassistance

The Center for EcoTechnology (CET) developed this original document through a contract between the Connecticut Department of Energy and Environmental Protection and CET.

