

Deconstruction

*Create Jobs and...
Save Money, Materials, and the Environment*

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Renovation should be the first priority



But when renovation isn't feasible... don't demolish!

Instead:

- Deconstruct — reverse construction ... one layer, one section, or one piece at a time
- Harvest — Re-usable materials to sell at retail or to infuse back into the CNY community (rebuilding)
- Upcycle — Use locally for new building, furniture, etc.

What is deconstruction?



- ❧ “The process of systematically dismantling a structure with the intent to recover the maximum amount of materials for the **highest and best re-use.**” (reclaimingdetroit.org)

Deconstruction Contractors



☞ Searchable directory on BMRA Website- get listed.

Colorado Demolition and Deconstruction

❧ Complete House Deconstruction

- ❧ 2.5 weeks; single crew

- ❧ 3,000 sq. ft. house

- ❧ No foundation

- ❧ 85% reuse

❧ Other projects

- ❧ Subcontracting- decon portion

- ❧ Brick fireplace removal

- ❧ Poptop

- ❧ Commercial

Flathead Recon



- ❧ Whitefish, MT
- ❧ Deck deconstruction
- ❧ Room deconstruction and resold as a package for rebuilding.
- ❧ Antique barns

For Sale



❧ Syracuse

❧ Habitat for Humanity

❧ SALT Makerspace: quite possibly many different types of things.

❧ Salt Works: wood

❧ Manhattan

❧ Finger Lakes ReUse

❧ Buffalo ReUse

Insight:

“Reclaiming Detroit”



- ❧ Kick started by collaborative job training
- ❧ Plan to divert material (8,000 structures, or 10%) from Detroit's 80,000 vacant structures — deconstructing as many as possible
- ❧ These materials are desired by city businesses (ex: Whole Foods floors and countertops), and nationally and GLOBALLY (Japan, France, London — have all inquired about materials)

Cities Embracing Deconstruction

- ❧ **Detroit**: Reclaiming Detroit; >80,000 blight properties
- ❧ **Seattle**: Second Use, RE-Use, West Seattle deconstruction project; government with old buildings, wanted to support deconstruction over demolition = big push for industry.
- ❧ **Cleveland**: Cuyahoga Land Bank; Partnering with Cuyahoga Community College's Green Academy, Neighborhood Progress Inc.
- ❧ **Baltimore**: Second Chance (for people, materials, and the environment).
- ❧ **Boulder County, CO**: Provides an easy two page sheet on how to deconstruct. This includes preparing a deconstruction plan with a timeline and inspections, and calculating economic advantage.

Aspects of a Deconstruction Program



- ❧ **Deconstruction timeline:** Some, such as Detroit, have a “3 days or less” timeframe:
 - ❧ Materials are recovered, and taken out during that time
 - ❧ When the time is up, the building is demolished
 - ❧ Decon team also takes out asbestos and lead
 - ❧ Other RFPs (beyond Detroit) state one contractor for the whole job, or split duties up differently – there are a number of approaches, all affecting timeline
- ❧ **Workforce programs:** They provide training in the construction field, including asbestos and lead abatement, which makes the individuals marketable in other aspects of the field – such as in the construction trades
- ❧ **Nonprofit / government collaborations:** Key is to develop public-private-nonprofit-academic partnerships, for instance nonprofits can provide EVERYTHING (labor, training, tools, etc.); government provides the buildings [In CNY, this can be a number of groups working on Green Job Training initiatives]
- ❧ **M/WBE engagement:** It is essential to create opportunities for this sector – other communities have found great success in this regard
- ❧ **Mix of experienced contractors and new labor forces:** The combination of experienced contractors with a pool of newly trained workers (e.g., from underserved communities) works very well in many communities
- ❧ **Tapping unused resources:** Reuse building material (tap the “Urban Forest”) ... and tap into new labor
- ❧ **Prevent material going to landfill and disposal:** Reduces cost (the externality costs in communities hosting these disposal facilities) – this levels playing field with demolition (which does not adequately include all costs – such as those landfill externalities)
- ❧ **Deconstruction techniques:** There are options...

Deconstruction Techniques

- ❧ “Soft-Stripping” / “Soft Skim”: Reclaiming non-structural components (doors, appliances, architectural components, etc.)
- ❧ “Hybrid”: Use people and machines; hybrid of demolition and manual deconstruction; can include approach of taking building apart in “panels” or sections
- ❧ “Structural”: Dismantling the structural components individually

Benefits of Job Training



- ❧ Pathway to unsubsidized employment
 - ❧ Builds new connections with construction industry and unions
 - ❧ Builds new connections with markets for reused and recycled materials
 - ❧ Supports reuse stores
 - ❧ Develops new local recycling operations / manufacturing
 - ❧ Creates additional small business
 - ❧ On average for every 10,000 tons of material recycled there is a 10 to 1 job creation ratio vs. disposal methods (national average)
 - ❧ Fosters nonprofit social enterprises to bid on future deconstruction, or components of deconstruction, such as job training, furniture manufacturing, material processing, etc.

Training Programs Could Include



- ❧ How to use equipment / tools
- ❧ Understanding construction techniques
- ❧ Asbestos and Lead abatement
- ❧ Tricks to deconstruction
 - ❧ De-nailing, sorting, stacking, separation, recycling
- ❧ Packaging for resale
- ❧ Materials processing and marketing

Jobs In Deconstruction



- ❧ During the actual deconstruction
- ❧ With material processors / preparers for lumber to mill
- ❧ Mill workers preparing for orders
- ❧ Carpenter and craftspeople installing reused wood
- ❧ Sales and marketing

Why Support Deconstruction?



- ❧ Same end result = vacant site
- ❧ Benefits (reclaimingdetroit.org):
 - ❧ Promotes community and environmental health
 - ❧ Creates more jobs (again, 10 to 1), many from underserved populations
 - ❧ Offers opportunities for small businesses to emerge
 - ❧ Diverts materials from landfills for recycling and reuse
 - ❧ Preserves cultural, historical, and architectural heritage
 - ❧ Enhances local economies

The List Goes On...



- ❧ Provides training in skilled trades
- ❧ Drives innovation in new building materials
- ❧ Is a stepping stone to construction related careers
- ❧ Is profitable and economically sustainable
- ❧ Captures an underserved market segment in recycling and building material reuse
- ❧ Is in high demand nationally, and growing
- ❧ Is exportable in materials, training, and services
- ❧ Is inherently sustainable – meeting the Triple Bottom Line of sustainability (Economic, Environmental, & Social)
- ❧ Provides high growth opportunities
- ❧ Offers new opportunities for new businesses
- ❧ Donated materials are eligible for tax deduction

Challenges to Deconstruction (Perceived?)

❧ Arguments

❧ Barriers

Arguments Made Against Deconstruction



1. Fear that homes that are up for deconstruction could have been made livable for those who need housing
2. Unrealistic expectation that all abandoned homes can and should be deconstructed
3. Deconstruction costs too much
4. Deconstruction takes too long
5. Deconstruction is really demolition
6. It's a dead-end career path
7. There are no mechanisms to prove materials were managed sustainably (perception that they are just going to a dump somewhere)
8. It's hazardous and too dangerous

Debunking the Arguments “Against”



1. Many homes are too far gone to be rehabbed; but, we need to do an accurate inventory to identify homes that can be rehabbed (first), deconstructed (second), and as a final choice, demolished. And then, inform the community in a transparent manner how these choices (home by home) were made.
2. Safety can be a major concern for many homes that could be up for deconstruction, but that have serious structural damage, fire damage, etc.; also some homes may have no value for deconstruction – again, a per home inventory will identify those that should be demolished.
3. Not considering externality costs not born by the locality facing the decon/demolish choice (e.g., landfill societal costs “somewhere”), costs could be higher for decon (in other words, deconstruction is not on a level-playing field with demolition). However, as with everything, the more it happens, the more efficient it becomes (e.g., new tools and methods are being developed, new markets for materials are emerging). There are also societal benefits such as job creation, saving materials from landfills, and reuse of materials, all of which have local benefits, reduce cost to other programs (such as social services), and are worth the extra cost. Last, there is potential for revenue from some materials, and in general, materials recovered can become part of a business supply chain, fostering the growth of new businesses and social enterprises (such as Salt Works, or CabFab in Syracuse).
4. It doesn’t have to take longer. Currently, model programs across the country are showing it to take a little longer than regular demolition; but as new methods and techniques are developed, it is becoming faster and faster. (An RFP can set a timeframe!) Again, we look at “3-days” as a potential goal (depending on building size).
5. Deconstruction is not demolition (see the definition of deconstruction). There is the same end result though! The key is to develop third-party certification that materials are indeed being managed sustainability (upcycled, reused, recycled).
6. Deconstruction supports a career path in deconstruction and construction.
7. Risk needs to be managed on the job site. Good contractors already do this, and additional training in deconstruction, including Asbestos and Lead management, will also help reduce risk.

Perceived Barriers



❧ Regulatory

- ❧ Insurance and bonding
- ❧ Compliance with regulations
- ❧ Nuisance prevention

❧ Financial / Management

- ❧ Duration and staffing
- ❧ Training
- ❧ Expertise from entities

Addressing Barriers: Insurance and Bonding



- ❧ Concerns about increases in risk due to:
 - ❧ Potential for building collapse
 - ❧ Increased number of people on site
 - ❧ Possible increase in amount of time on site
 - ❧ Unexpected conditions could increase risk
 - ❧ Potential for incomplete job could increase risk exposure
- ❧ Solutions:
 - ❧ Adequate contractor training
 - ❧ Pre-planning key (understanding the residence/home in its entirety – materials, construction techniques used to build it initially, etc.)
 - ❧ Potential for new insurance product / tool being developed

Addressing Barriers: Regulatory



❧ Concerns:

- ❧ Local codes

- ❧ NYS Part 360 Solid Waste Regulations

❧ Solutions:

- ❧ Develop strong partnership with local codes officials as deconstruction industry emerges

- ❧ Work with NYS DEC to address issues with consolidating and processing deconstructed materials

Addressing Barriers: Nuisance Concerns



❧ Concerns:

- ❧ Security of the site
- ❧ Safe handling of lead and asbestos and other hazardous materials
- ❧ Timely removal or storage of materials
- ❧ Erosion control
- ❧ Duration of the process
- ❧ Noise and vibration

Addressing Barriers: Nuisance Prevention



☞ Solutions:

- ☞ Develop a building-level materials inventory (home by home)
- ☞ Produce a marketing plan for all materials, including storage, processing, and flow of materials
- ☞ Provide provisions for site security, erosion control, neighbor relations

Addressing Barriers: Financial / Management



- ❧ Concern: Costs more because...
 - ❧ Longer duration to take down
 - ❧ Larger workforce needed
 - ❧ Trainees vs. experienced workers
- ❧ Solutions:
 - ❧ Secure nonprofit training partner
 - ❧ Partner with local demo and/or existing decon contractors who know process, materials, marketing of materials, have insurance, bonding, equipment, and connections in industry
 - ❧ Provide experienced deconstruction management: including tight scheduling, timelines, teaching techniques, and processes to drive down costs
 - ❧ Focus on maximizing revenue generation from marketed materials (through quality control, consolidated marketing, etc.)

Building the Industry Down the Line



- ❧ Ultimately, this is about behavioral change: The need to support deconstruction as a cost-effective, efficient means of building removal vs. traditional (comfortable?) demolition processes
- ❧ There is also a need to support the people in this burgeoning industry – and to help enhance contractors' image as environmentally conscious
- ❧ There needs to be a recognition that the pipeline for deconstruction, includes:
 - ❧ Residential buildings, not just government buildings
 - ❧ Warehouse / storage / processing facility(ies)
 - ❧ Market development
 - ❧ Additional and new US Green Building Council LEED project credits are now available to encourage new retrofits, rehabs, and new building using deconstructed materials
- ❧ There will be mistakes – this will be a 2 steps forward, 1 step back process (in the beginning) – the community will need to embrace entrepreneurship, and the unknown, but...
- ❧ ...the industry – once started on a solid footing through our efforts today – will grow on its own, and create many needed jobs, while preserving the community's soul!