Deconstruction & Reuse: Aligning with Sustainable Materials Management

If waste really is just “a product of bad design,” how do we embrace new technologies to return to the age old wisdom of reusing our materials?

Presented by: The Building Material Reuse Association
Joe Connell
Executive Director

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It all starts with Design

“purpose, planning, or intention that exists or is thought to exist behind an action, fact, or material object.”
So how did we get here?

If Building Material Reuse is as old as buildings themselves, why isn’t it the standard now?
We got really good at extracting raw materials
Mass production
And creating an economy of the new
Our present system had some help along the way too - subsidies
And, we use to think the world was a lot bigger...
So how do we utilize new technology?
To re-introduce ancient systems of reuse
4 key elements

- Deconstruct present building stock
- Create tighter limits on waste and construction locally and regionally to start.
- Build an interconnected reuse industry
- Design for reuse and deconstruction
So who is the reuse industry anyway, and how do we encourage them?

- Deconstruction
- Retail retailers
- Reuse Makers
- Up-cyclers and DIY’rs
- Reuse Remanufacturing
- Architects and Designers
- Reuse Remodelers and Builders
And what exactly is Deconstruction?

“The systematic dismantling of a structure in order to preserve the building materials for reuse”.

BMRA
And how do we move this product?

Retail Outlets

thousands nationwide and growing fast
Up-cyclers and Re-makers
But is that enough to turn the tide?

No.
We need to move on from reuse being a niche market.

Reuse needs to be incorporated on a large scale into design, systematic approaches to large scale construction, and distribution of materials.

I dream of the day when I can call a local lumber yard and spec a load of reclaimed 2x4!

So what do we need?
• More reuse operators and deconstructors
• More ordinances limiting waste and promoting reuse [not just recycling]
• Systems approaches to distribution of materials
• And we need everyone who cares about sustainability and materials management to include reuse and decon.
Why? – why is our industry so imperative?

• Because a virgin 2x4 is cheaper then a reclaimed 2x4.

• [and a new door sees more of the world then I do?]
1 Billion board feet

The estimated amount of dimensional 2x4 and 2x6 material in present residential US housing.
C&D diversion

Each year more than 17 million tons of recoverable C&D wood materials are landfilled at a cost of more than $500 million.

“Municipal Solid Waste (MSW) and Construction and Demolition (C&D) Wood Waste Generation and Recovery in the United States” Dovetail Partners
LEED points for wasting?

A project can get points for sending lumber in comingled containers to MRF’s.

Most of this lumber is turned into mulch or hog fuel

How is this sustainable?
Existing building Reuse saves Embodies Carbon
Environmental Impact of Sourcing Reused Materials

**Total Global Warming Potential Emissions - Cradle to Site (Including Biogenic Carbon)**

<table>
<thead>
<tr>
<th>Material</th>
<th>Virgin</th>
<th>Reclaimed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hardwood Flooring</td>
<td>600</td>
<td>400</td>
</tr>
<tr>
<td>Softwood Framing Lumber</td>
<td>700</td>
<td>200</td>
</tr>
</tbody>
</table>

Source: *Life Cycle Energy and Carbon Emissions for New and Recovered Softwood Framing Lumber and Hardwood Flooring*  
Bergman, et al
The reuse and recycling industry produces 7 jobs per 1,000 lbs of MSW. This compared to less than 1 job per 1,000 lbs of waste landfilled.

- “More Jobs, Less Pollution: Growing the Recycling Economy in the U.S.”
- Prepared by the Tellus Institute November, 2011
Additional jobs

Not yet measured are the thousands of jobs in reuse retail operations across the country...
What’s up in our Industry?

We are talking about decon with:

• Milwaukee
• Atlanta
• Pittsburg
• Philadelphia
• Vancouver B.C.
• Seattle
• St Louis
• Chicago
• And more…
What we are seeing...

- Infill and gentrification leading to the demo of old homes, ie. Portland, SF
- Urban blight and abandoned neighborhoods. Milwaukee, DC...
- Barns and old factories.
- New construction continuing with outdated practices.
What’s exciting

- Cities, counties and states limiting the waste of reusable materials.
- Salvaged materials sought after for commercial reuse.
- Growing DIY market for used building materials.
- Architects and designers paying more attention to reuse.
- Agencies seeing the potential in the reuse industry for jobs and workforce development.
Policy Examples

• Language/law/ordinance that explicitly
  – Requires reuse and deconstruction (e.g. 5% reuse requirement, *Cook County*)
  – Restricts the use of demolition, or the landfilling of materials (e.g. Ban on C&D waste in landfills, *Massachusetts*)
  – Requires reuse and deconstruction (*Portland, Milwaukee, Palo Alto ... *)
On the horizon

- Research on the potential for used dimensional lumber in the mainstream market
- Increase in government agencies interested in code and policy changes.
- Increased awareness of the difference between recycle and reuse.
- More research being done on Embodied carbon, full life cycle analysis of buildings, and designing for Zero waste.
- Folks looking seriously at Design 4 Deconstruction
Industry challenges

- The reuse industry lacks serious investment
- The industry tends to be scattered group of hands on folks that lack an organized sharing of resources, knowledge, and passion to drive our market.
- Our industry is build on word of mouth to grow our businesses.
I remember seeing Woodsy as a kid. He was quite the lone ranger.

I now see so many amazing people working on changing our world that I am heartened.

Our next generation will once again change the world. Let's give them the best tools we can.

Joe
What’s the BMRA up to?

- 2018 Conference in Grand Rapids
- Expanded trainings
- Operations business consulting
- Expanding the network within our industry
- Advocating for change locally and nationally.

Please join us in “working to create a vibrant building materials reuse economy as part of a world without waste”.

Joe Connell
BMRA Executive Director
joe@bmra.org
Join us and learn more about decon and building material reuse!