

Re-Imagining the Built Environment, May 7, 2018 Discussion Table Summary

On Monday May 7th 2018, nearly 80 professionals representing academics, governmental units, and private industry came together at the Kellogg Center in East Lansing, MI to discuss the state of structural abandonment in the region, and potential solutions to address this socially, economically, and environmentally detrimental phenomenon. To round out the event, participants broke into six discussion tables on various topics relating to the advancing the built environment, to discuss current and future opportunities for ending structural abandonment. The following is a summation of those discussions prepared from written notes taken during the session, and through a recording of the group presentations.

Research

- Why abandonment happens?
 - Impact of industrialization
- Governmental/policy/regulations/incentives
- Technology
 - Processing of demolition/ deconstruction materials
 - What role automation can play
- Time & cost
 - How much does it cost
 - Demolition vs. deconstruction
 - Predicting cost
 - Case-based systems
- Design for deconstruction
 - Design a building in such a way that it can be deconstructed easily
 - Add “& reuse” – “Design for Deconstruction & Reuse”
 - Look at deconstruction as assemblies rather than elements
- Market & supply chain management
 - Knowing where to send the materials
 - Potentially develop a material matching app – so that suppliers and consumers can find each other
 - Quality of materials
 - How hazardous materials affect quality
- Skills, workforce & training

The Research group discussed several areas of focus for future research and where there may be gaps in past research, broken into seven main categories: Why abandonment happens; governmental policies, regulations, and incentives; technology; time and cost of demolition vs. deconstruction; design for deconstruction principles; market and supply chain management; and skills and workforce training. The group also came up with several recommendations to further the field of research around Domicology, including continuing to develop the market for materials by creating a “materials matching app” that connects suppliers of materials to consumers. The group also recommended beginning to look at the deconstruction process as an assembly, rather than of individual elements.

Technology & Materials

- Asphalt shingles
 - Market in Michigan has been constricted
 - 1 hot-mix asphalt in state that will take recycled shingles
 - Michigan's shingles perform the worst in reuse due to harsh conditions in use
 - Concerns about penalties & fines in reused materials
 - More costly to reuse
 - Need for adding softer material from out-of-state
 - Potential for using tire rubber to offset quality issue
 - NEEDS:
 - MDOT has written permissive specification for asphalt – still a voluntary system, not required
 - Need to look at more ways to reuse shingles
 - Consider producer being required to take material back
- Lumber & scrap wood
 - Furniture industry – mostly taken and put into energy
 - Outlet for contaminated chipboard
 - Laminates contaminate the material
- What kind of agenda can we set?
 - Automation – as a way to address labor issues (shortage, pipeline)
 - Can automation help build a career pathway?
 - Developing C&D MRFs
 - Facility established in Arizona, otherwise these types of facilities don't exist
 - Need to DFD, as well as design of materials to lend to better end-of-use option
 - Code requirements
 - Future technology – look at trends in technology development and find opportunities for this industry
 - Automated de-nailing
 - De-panelization – take homes down in 8ft sections to be sent to MRF/salvage yard
 - Cost of more equipment that doesn't exist currently

The Technology & Materials group began their discussion by identifying the challenges facing several kinds of construction & demolition materials available: asphalt shingles, and lumber & scrap wood. They then discussed what solutions already exist, and opportunities for new solutions to be developed. Some of the main suggestions included utilizing automation as a way to address labor shortages and for processing materials, designing materials and structures with reuse in mind, and looking forward at technology trends and adapting those technologies for this industry.

Funding & Policy

- This field is fairly blank currently
- Reuse policy to promote deconstruction (Oregon)
- Tipping fee increase could incentive reuse
- Fire Escrow Fund tweaked to deconstruction
- Require re-use surveys for publicly funding projects
 - Like lead & asbestos surveys
 - Potential job creation
 - Conservation of landfill space

- County plans
 - Need for better data to write plans for reuse & recycling
 - Universal mandatory reporting data
 - Better promote reuse & recycling
- Need for case studies
 - Many policies (local ordinances) passed recently
- Market development funding
- Rethink how federal funding requirements are written to allow for deconstruction (longer timelines)
- Local bonding
 - New buildings could be bonded so that there is money to deconstruct
- Recycling reuse requirements for brownfields & city contracts
 - Demolition contractors
 - Design for site rehab to make it easier to take down
- Local requirements on land development
 - Smart design for ease of deconstruction
- Deed restrictions
 - Sell development rights to property – require certain percentage of reuse/recycling in redevelopment of site
- Tax Increment Financing to pay for difference between demolition and deconstruction?

The Funding & Policy group discussed the lack of existing policy, directly related to structural abandonment and reuse, in the state of Michigan. They attempted to identify policies in other areas that encouraged deconstruction over demolition that could be adapted for use in Michigan. They identified a need for case studies to test the efficacy of those policies to see if they are working, which would require additional funding. The group also discussed several funding policies in Michigan that could be modified and implemented as deconstruction-focused funding sources.

Advocacy & Outreach

- Raising Awareness
 - Inventory existing networks & resources
 - Building networks
 - Stronger partnerships
- Audience
 - Government (local & state)
 - Planners & Engineers
 - Schools
 - Urban Planning
 - Conservation
 - Citizen Planning Training
- Continue the conversation!
 - Continue growing the group
 - Many residents expect that this is already happening – so we need to make them aware
 - Need support (financial) and education
 - Residents need to understand what deconstruction is
 - Policy is part of outreach – educating local government
 - Working with children in schools – they absorb information very easily and are passionate
 - Moving forward, need to build stronger collaborations & partnerships (public/private)

The Advocacy & Outreach group identified raising awareness around the issue of structural material landfilling as the number one issue that needs attention. They felt that the average resident or business owner is not aware of the impact of structural abandonment, and would like to see them educated, but being aware of the risk of “information overload.” They also identified the need to continue leveraging existing networks, and growing those networks, in order to get all levels involved (local & state government, private industry, and citizens).

Workforce & Training

- On-the-job training programs
 - Most important
 - Leadership & mentoring on the job
- Life skills training needs to happen as well
- Commitment from contractor community
 - Land banks
 - Resellers
- Community colleges need to be on board
 - Education piece
- Is this a career field?
 - There are career positions in the field – also low-skilled jobs available
- Model for training
 - Wind industry
 - New industry has created a market for talent & pays a living wage
 - Look at other industries

The Workforce & Training group discussed the importance of training programs in order to prepare a strong workforce for the deconstruction industry. This will require commitments from community colleges, contractors, land banks, and more. A model for growing the deconstruction industry has already been set by the wind energy industry, which has created a market for talent and provides living-wage career positions; other industries may also be applicable.

Market Development

- Make sure to think about supply & demand in strong foundation of end-use markets
- Connecting the dots – continue conversations with academia, industry & government working together to solve the problem
- Importance of consumer demand
 - People asking for materials
- Strength in enabling policy
 - How important is policy & funding in developing markets
- Marketing the markets
 - Make sure people know where the material is, and how to access what is already there
 - In some situations, materials that are available but can't get to end-use markets
- Collaboration across sectors is key

The Market Development group posed the question: What would you do if there were \$2M in market development funds? Which brought them to the conclusion that collaboration across sectors (academia, non-profit, business, and government) is key to having a strong foundation for ensure structural materials end up back on the market.