**Bay Area Deconstruction Policy Workgroup Meeting Notes**June 19, 2019

**Welcome – Timonie Hood**, Zero Waste & Green Building Coordinator, EPA Region 9

This group has been meeting quarterly since the end of 2017, starting with an inspiring presentation about Portland’s Mandatory Deconstruction Ordinance, followed by meetings exploring California and Bay Area deconstruction and reuse opportunities and challenges.

**Agenda** (View presentations at:http://www.stopwaste.org/recycling/deconstruction-workgroup)

10:00 – 10:30 – Welcome and Introductions  
10:30 – 10:50 - Ed Dunn, Director - [Building Resources - San Francisco](https://buildingresources.wordpress.com/)  
10:50 – 11:05 – Jon Helman, President, and Alejandra Arce Gomez, Sustainability Coordinator -

[GCI General Contractors](http://gcigc.com/)

11:05 – 11:15 – Break  
11:15 – 11:40 – Eden Brukman, James Slattery, and Shoshana Micon - [San Francisco Department of the Environment](https://sfenvironment.org/zero-waste-in-SF-is-recycling-composting-and-reuse) – BADWG Ecosystem Mapping  
11:40 – 12:30 – Deconstruction Policy Discussion

**Notes**

**Ed Dunn –** Building Resources History and Deconstruction 2.0

(Note: Presentation photos were not shown at the meeting due to technical issues)

* Building Resources was founded in 1980 with help from Urban Ore and San Francisco’s Department of the Environment
* Feb. 95 opened Reused Building Materials - 1-acre lot in San Francisco, 701 Amador
* 1995 – 2014 – Operated a network of recycling buy back and Building Reuse – collected bottles and cans and added building materials
  + Involved with large Presidio Trust deconstruction project with Phil Kreitner and Pavitra Crimmel (Beyond Waste, a for profit deconstruction partner) – marketed some lumber from site, including some unique extinct cedar
  + Funding – Key Issue – how do you pay for deconstruction/de-nailing costs? Tried job training funds and government projects, but no mechanism to scale up as costs were 3-4x demolition.
  + 2003-2004 Funding Breakthrough: Kevin Drew, Pavitra Crimmel (Beyond Waste), Ted Reiff (The Reuse People), and others worked with IRS to start IRS Donation Tax Deduction (using [IRS Form 8282](https://www.irs.gov/forms-pubs/about-form-8283) – Non-cash Charitable Contributions of more than $500) NOTE: 8283 Tax deduction applies to residential but not commercial building materials (which are generally already depreciated and have no donation value)
  + 2009 Building Resources accepted first 8283 load - demand was outpacing existing Bay Area deconstruction operators
  + 2009 – 2014 – Building Resources increased used building materials sales as a nonprofit yard.
  + 2014 – Building Resource closed last recycling (bottles and cans buyback) center.
  + Building Resources has received 52 deconstruction project loads.
  + It has been satisfying to see the industry has really taken off and to support the deconstruction market.
  + Focus has been on operations and not as much on policy, but has recently rejoined the [Building Materials Reuse Association](https://bmra.org/) (BMRA) and purchased their [Deconstruction Textbook](http://www.lulu.com/shop/building-materials-reuse-association/introduction-to-deconstruction-textbook-oregon-state-edition/paperback/product-23195298.html).
* Deconstruction 2.0
  + Background – IRS 8283 was a major breakthrough, before it, the deconstruction industry could not scale
    - Appraisals – sometimes multiple appraisals on projects > bidding is not necessarily the best approach
    - IRS has flagged inflated appraisals as an issue
  + Portland – Mandatory Deconstruction Policy – Green Mindset (still appraisals-based)
  + Carbon Benefits of Deconstruction/Wood Reuse - Funding still unclear/ developing markets
  + Improving Inventory Management Issues/Costs – Need for Lay Down Areas - opportunities to use QR/Digital Codes and post information online to get material moving online/skip warehousing and storage costs
    - In the East, a lot of used kitchen materials are moving online
    - Paul Gardner ([Whole House Building Supply & Salvage](http://driftwoodsalvage.com/)) has a deconstruction company model with no permanent location – sells off the site. People buy, pull-out and take away – “you pick, pump, and patch”
    - Can pre-market cabinets online and move from building site directly to end-user
    - Building Materials Reuse Association (BMRA) is planning online platform
  + Commercial side – need Deconstruction 2.0 because no 8283 deductions / underserved – met with Webcor commercial deconstruction group and learned that for new construction, construction companies need to know materials information & quantities 1 year in advance to specify. Very difficult for salvaged materials to be incorporated into large commercial new projects because of the advance time need/cost of storage & transportation.

Questions/Comments:

Eden Brukman – Richard Ludt, Interior Removal Specialist Inc. (IRS Demo) is an LA-based company that does deconstruction for Tenant Improvements (much of which is Class A office space). They have donated materials to almost 200 nonprofits regionally and in Mexico. www.irsdemo.com

LEED BD+C and ID+C – v. 4.1 Beta – “Building Disclosure and Optimization – Sourcing of Raw Materials” credit now values salvaged material at 200% of their cost

Timonie Hood - see presentation and notes from last meeting by Brad Guy for more on LEED reuse credits.

Workgroup Meeting Notes: February 28, 2019 at http://www.stopwaste.org/at-work/built-environment/construction-demolition-debris/bay-area-deconstruction-working-group

Presentation: http://www.stopwaste.org/sites/default/files/Materials%20reuse%20in%20LEED%20v4%20FINAL.pdf

Emily English – LEED Commercial Interiors must count furniture

Jordan Daniels – Alex Mehran, Jr. with [Sunset Development Co.](https://www.bishopranch.com/about/sunset-development/) / Bishop Ranch in San Ramon, CA, is Salvaging ceilings and floors for interior fit outs of commercial buildings

* Ted Reiff – Provided commercial building tax donation information guidelines:
* If you own a commercial building for 10+ years the chances are it has been fully depreciated to show zero on balance sheet and so you can’t take a tax deduction for building materials donations which have been fully depreciated.
* Includes interiors – The IRS generally depreciates commercial fixtures in 5-10 years so the donation value for tax deduction purposes is often zero or close to zero.
* New buyer – Possibility of deduction since assets have been re-valued. However, the donation reduces the acquisition cost thereby increasing the profit, thereby increasing taxes when sold.
* Part of group that met with St. Vincent de Paul, WebCorp and others to look at commercial deconstruction/reuse opportunities – major issues was that developers/builders need to know quantities of materials in advance – over a year/makes reuse storage and coordination expensive and difficult.

Nicole Tai – GreenLynx does some commercial interior salvage jobs and distributes materials to NGOs in the area or ship materials overseas to nonprofits that buy the materials and pay shipping.

**Jon Helman and Alejandra Arce Gomez** - [GCI General Contractors](http://gcigc.com/)

* GCI works on commercial sector/inside of spaces on office sector rollovers.
  + In business for 2 decades
  + Brought clean air/negative air pressure to commercial sector. Clients include Google, Nest, YouTube, Stanford, Cisco, etc.).
* Madrone – Separate company performed demolitions
  + Saw waste of high-end law firms and others throwing away furnishings (fancy chairs, refrigerators, etc.) because of Lease Restoration Clause
  + Hard to find outlets for large quantities of interior materials – example has 300 large doors, but local reuse center could only accept 7
  + Did not want to get into warehousing and retailing – instead developed system to pre-engage by actively reaching out to find out what NGOs, senior centers, schools, universities, artists -- want and delivering it to them with scheduled Class A truck in cluster no double-handling. Closer than the landfill.
  + Alejandra developed a list of over 300 Bay Area organizations & NGOs with easy-to use checklist
    - Makes a Waste Management Plan with salvage, recycling, and diversion goals
    - Survey of everything that can be salvaged/reused
    - Then reaches out (sometimes with photos) to verify with groups what is available and then schedules efficient truck route deliveries along major.
  + There are more markets for residential building materials reuse than commercial
    - Difficult materials – Commercial doors, window shades, work stations with shared partitions/not exact quantities requested (tables with shared legs no flexibility in use), appliances/lights – sometimes not up to code
  + Inspiring results:
    - Woodworking Shop - Wood panels > to a wood worker in Vallejo who created bunk beds that were so popular he opened a business selling them.
    - Foster City – diverted 2,210 lbs with one donation to a senior community
    - University of San Francisco - has warehouse to accept donated materials/tables
  + **Design for Deconstruction is important to reduce large amounts of unnecessary waste –** seeing moveable wall panels that allow companies to change size/Living Buildings
  + Take back programs for carpet, ceiling tiles are great

**Questions/Comments:**

* All Madrone reuse is done with zero cost basis – no tax donation (our donation process is cost- effective)
* Let us know of additional organizations to add to her reuse recipient list – [aarcegomez@gcigc.com](mailto:aarcegomez@gcigc.com); aarcegomez@madronecr.com
* Reuse efforts started 2 years ago, now about 1/3 of GCI volume - some clients pick them because of it
* Government mandates, additional build in time can create openness
* Need more Reuse Yards
* GCI is small slice – 27th in Bay Area construction companies
* What is the best way to measure reuse/weigh materials?
  + Manufacturers information on the web (example: office chairs 25-35 pounds)
  + Sometimes workers weigh
  + Use counts and multiply
* Easier to send “as-is” dimensions – most materials are donated “as is” and recipient can upgrade for reuse.
* Time: Deconstruction (internal) does not take a lot more time than demolition – maybe a bit more time. Get detailed information of what is going to be available as soon as possible to start the process of finding homes right away.
* Can haul off non-fixed elements as part of the process first (not covered under demo permit)

**Eden Brukman**, SF Environment

Bay Area Deconstruction Ecosystem Map - Google docs link for you to edit: <https://docs.google.com/document/d/1c-YFjSChA1poTB6jHITFOWo3VJ15_C3mILqJAStJgjs/edit?usp=sharing>

Looking at key organizations/relationships it takes to create deconstruction policy and to identify gaps. Please share your expertise to help build our map!

**Most Important:** Can be difficult to think about but start with your organization and think of other entities you work with and the needs/expectations of that relationship. Document the connections that you have firsthand experience with, including the key reasons why.

**Deadline:** Input before next meeting – end of August so we’ll have time to pull together for Sept. meeting.

Comments:

* Don’t like “end-users” term, “customers” would be a better term – added term “customer.”
* What is a “certified salvage assessment verifier” and a “hybrid deconstruction facility.”

After-meeting follow up:

No additional context was provided at the time “certified salvage assessment verifier” was added to the Ecosystem Map anonymously. We encourage the contributor to provide an explanation or example. Others can disregard if it is unclear to them, too.

* + A “hybrid deconstruction facility” is one that takes larger parts of a building offsite for detailed deconstruction activities to occur.

**Celebrating and Thanking Shoshana Micon**

* Shoshana was hired in early 2018 by SF Environment as a Zero Waste Climate Fellow to work on deconstruction/urban wood issues shortly after our first Deconstruction Workgroup meeting.
* She did wonderful work and dug through mountains of SF demolition permits to find that SF has more than 85% C&D diversion but less than 1% of the diversion reported is source separated wood (mostly concrete, metal, masonry/tile, and asphalt)
* She is leaving to go to graduate school at Yale to study Public Policy and shared that working with the Workgroup had been a transformational experience for her and helped her choose a future working in environmental policy. It was great to be part of this group of enthusiastic deconstruction and reuse advocates and the see the power of working together!
* She will continue to follow our progress from school.
* **Thanks again for your great work & best wishes Shoshana!**

**Open Discussion**

* **BIG NEWS FROM PALO ALTO!** June 10, 2019, Palo Alto adopted an ordinance – the first in the Bay Area – on commercial and residential deconstruction and source separation as part of their Zero Waste/Climate/Sustainability priorities. Phased-in and based on project cost, includes survey (currently mandated), appraisal report, and salvage assessment, but attendees were not able to address specific questions. Paula Borges could not attend this meeting but agreed to present at a future meeting.

Links to Palo Alto ordinances and background materials.

**Palo Alto Deconstruction Ordinance** (see Attachments E - G):    
<http://cityofpaloalto.org/civicax/filebank/documents/71714>

**Palo Alto Council Meeting Presentations:** <https://www.cityofpaloalto.org/civicax/filebank/blobdload.aspx?t=47552.71&BlobID=72028>

* **What are the climate benefits of deconstruction?** – embodied energy, displacing virgin timber loss, transportation, no diesel demolition equipment, other?
  + Brad Guy, Catholic University – Did a life cycle assessment deconstruction of 4 army barracks with 4 scenarios – from full demolition to full deconstruction – Journal of Green Building
    - Deconstruction reduced GHG impacts
    - The main benefit was substitution of used materials for new materials
    - Transportation – shorter distances also

Follow up message from Brad provided in Notes in response to meeting request:

Here are articles with LCA and labor salvage cost study of 4 identical buildings. See also slides summarizing the LCA. The "what if" last slide is that based on CO2 alone, it requires a rate of 55% salvage to offset all the impacts of doing the deconstruction. In other words, a neutral carbon building removal process. Anything over 55% recovery rate is then a "negative" carbon or avoided carbon, etc.

**GUY, B., The Optimization of Building Deconstruction for Department of Defense Facilities: Ft. McClellan Deconstruction Project, Journal of Green Building**, Vol. 1, No. 1, Winter 2006, pp. 102-122. <http://www.lifecyclebuilding.org/docs/The%20Optimization%20of%20Building%20Deconstruction.pdf>

**O'Brien, E., GUY, B., Lindner, A.S., “Life Cycle Analysis of the Deconstruction of Military Barracks: Ft. McClellan, Anniston, AL,” Journal of Green Building**, Vol. 1, No. 4, Fall 2006, pp. 166-183

* Shawn Wood, Portland – New GHG Lifecycle Assessment Report out from Oregon Department of Environmental Qualtiy (contact Jordan Palmeri) based on Portland deconstruction data.

**IMPORTANT NOTE:** Results are highly tuned to local situation (landfill weather conditions, distance to landfill, etc.). We will invite Jordan to present at a future Workgroup meeting.

(Links provided in Notes in response to meeting request)

**Oregon Department of Environmental Quality, Deconstruction vs. Demolition: An evaluation of carbon and energy impacts from deconstructed homes in the City of Portland,** March 2019

<https://www.oregon.gov/deq/FilterDocs/DeconstructionReport.pdf>

**Contact:** Jordan Palmeri, 503-229-6766, [Jordan.PALMERI@state.or.us](mailto:Jordan.PALMERI@state.or.us)

**U.S. EPA WARM Model** - EPA created the Waste Reduction Model (WARM) to help solid waste planners and organizations track and voluntarily report greenhouse gas (GHG) emissions reductions, energy savings, and economic impacts from several different waste management practices. WARM calculates and totals these impacts from baseline and alternative waste management practices—source reduction, recycling, anaerobic digestion, combustion, composting and landfilling. <https://www.epa.gov/warm>

* + - **WARM Calculator Tool:** <https://www.epa.gov/warm/versions-waste-reduction-model-warm#15>
    - **Documentation for Greenhouse Gas Emission and Energy Factors Used in the Waste Reduction Model (WARM) Construction Materials Chapters**, May 2019 (Wood Flooring and Wood Products, pp. 92-116)

https://www.epa.gov/sites/production/files/2019-06/documents/warm\_v15\_construction\_materials.pdf

**USDA Forest Products Laboratory, Using Reclaimed Lumber and Wood Flooring in Construction: Measuring Environmental Impact Using Life-Cycle Inventory Analysis,** 2010

Summary:  
<https://www.fpl.fs.fed.us/products/publications/specific_pub.php?posting_id=18267>  
Full Proceedings:  <https://www.fpl.fs.fed.us/documnts/pdf2010/fpl_2010_bergman002.pdf>

**USDA Forest Products Laboratory, Life-Cycle Energy and GHG Emissions for New and Recovered Softwood Framing Lumber and Hardwood Flooring Considering End-of-Life Scenarios,** April 2013  
<https://www.fpl.fs.fed.us/documnts/fplrp/fpl_rp672.pdf>

**Embodied Carbon Network Building Materials Reuse Webinar Slides,** 2018  
http://embodiedcarbonnetwork.org/wp-content/uploads/sites/13/2018/08/ECN\_Reuse-Webinar\_Final-Slides.pdf

California’s current GHG emissions factor for wood is based on biomass:

**California Air Resources Board, METHOD FOR ESTIMATING GREENHOUSE GAS EMISSION REDUCTIONS FROM RECYCLING,** November 2011

https://ww3.arb.ca.gov/cc/protocols/localgov/pubs/recycling\_method.pdf

* **California’s** [**SB 1383 Short-Lived Climate Pollutants: Organic Waste Methane Emissions Reductions**](https://www.calrecycle.ca.gov/Laws/Rulemaking/SLCP/) **draft regulations are open for comment through July 17, 2019. We will share the information on submitting comments with the Workgroup.**

(Background information not provided at the meeting)

Lumber and wood are covered in the draft SB 1383 Short-lived Climate Pollutants (SLCP): Organic Waste Reductions regulation’s definition**:**

(46) “Organic waste” means solid wastes containing material originated from living

organisms and their metabolic waste products, including but not limited to food, green

material, landscape and pruning waste, organic textiles and carpets, lumber, wood,

paper products, printing and writing paper, manure, biosolids, digestate, and sludges.

* **Where can we find Design for Deconstruction information, since it critical to support deconstruction and reuse, and what codes or rating systems support Design for Deconstruction?**

Timonie Hood, EPA – I’ll provide links to the group. There was an EPA/Building Materials Reuse Association/American Institute of Architects competition on Design for Deconstruction called the Lifecycle Building Challenge that has great resources and links to rating system language. Not aware of any current code requirements.

**Design for Deconstruction Resources** (Links provided in Notes in response to meeting request)

**EPA Fact Sheets on Designing for the Disassembly and Deconstruction of Buildings**

<https://www.epa.gov/smm/fact-sheets-designing-disassembly-and-deconstruction-buildings>

**King County, Design for Disassembly in the Built Environment**

<https://kingcounty.gov/~/media/depts/dnrp/solid-waste/green-building/documents/Design_for_Disassembly-guide.ashx?la=en>  
**Lifecycle Building Challenge Resources** <http://lifecyclebuilding.org/resources.php>

**Public Architecture Design for Reuse Primer**<https://issuu.com/publicarchitecture/docs/design_for_reuse_primer_issuu>

**Rating System Language** CHPS, Green Guide for Health Care, Green Globes <https://www.lifecyclebuilding.org/rating-systems.php>  
**Living Building Challenge** <https://living-future.org/lbc/materials-petal/>

* [**California AB 617 Community Air Protection Program**](https://ww2.arb.ca.gov/our-work/programs/community-air-protection-program) – Areana Flores, Bay Area Air Quality Management District
  + Was being implemented on a regional level through Clean Air Plan, now must be done at the community level through AB617.
  + January 2018 – Community actions to reduce pollution and improve public health
  + West Oakland Environmental Indicators Project has ARB funding – in draft phase – considering strategies for emissions reductions from construction – electric equipment (vs. diesel) on site.
  + Other communities covered: Bay View Hunters Point is San Francisco and next year East Oakland.
  + Demolition also can result in heavy metals (lead, etc.) soil and air emissions. Reports from Detroit, Baltimore, and Chicago. (Additional information on Lead Based Paint Emissions provided in response to meeting request)

**Lead Based Paint – Air and Soil Pollution – Demolition vs. Deconstruction**

In 2016-17, the Oregon Department of Environmental Quality completed a literature review of lead dust from demolition activities, compiling known research from US and international sources. It is clear from the literature that demolition activities generate lead-containing dust, and that this dust can travel 400 feet from the source (Jacobs et al., 2013). It is also clear that demolition activity can contribute to lead levels in interior residential floor dust, and can result in elevated blood lead levels in children (Lucas et al., 2014, Patridge et al., 2004, Rabito et al., 2007). While much of the literature looked at demolition of multiple housing units at once, lead dust was also found to be generated and dispersed from individual single-family demolitions (Jacobs et al., 2013). Limited data suggests that deconstruction (the systematic dismantling of a structure, typically in the opposite order it was constructed and without the use of heavy machinery) results in much lower levels of dust dispersion than demolition, however this practice was still a contributor to lead dustfall close to the worksite (Ayodele, 2014). <https://www.oregon.gov/oha/PH/HEALTHYENVIRONMENTS/HEALTHYNEIGHBORHOODS/LEADPOISONING/Documents/Best-Practices-Demolition-of-Residences.pdf> [Citation links at the end of the document]

**Oregon Legislation Information:** <http://healthoregon.org/lead>

**Portland Lead-Based Paint Demo Ordinance with Full Deconstruction Exemption:** <https://www.portlandoregon.gov/bds/article/672159>

Public radio story provides context about the lead hazard risks associated with traditional demolition:

**Reveal Radio Episode: Poisoned, ignored and evicted: The perils of living with lead,** March 2018<https://radiopublic.com/Reveal/ep/s1!d0e70a927b5364300dd28770d94d63ae19daf382>

Thanks to all of our presenters and participants!