DECONSTRUCTION IS HAPPENING!

HOW MA PRACTITIONERS CAPTURE THE VALUE OF BUILDING MATERIALS BEFORE DEMOLITION

MASSDEP DECONSTRUCTION WORKGROUP

MEETING #5

OCTOBER 25, 2023

HOUSEKEEPING

- This meeting is being recorded
- Using zoom/chat
- Ground rules

HOW THIS GOT STARTED

2030 Solid Waste Master Plan

Reduce & Reuse Working Group

Reduce & Reuse **Action Plan**

December 2021

Deconstruction Working Group

September 2022 Kick-Off

MEET THE PLANNING TEAM

Christine Beling
US EPA Region 1

Susan Cascino
City of Boston

Mike Elliott
MassDEP C&D Lead

Alison Frazee
Boston Preservation Alliance

Kristen Fritsch
Elkus Manfredi Architects

Pam Howland
Old Window Workshop

Abbey Massaro
Center for Ecotechnology

Kathi Mirza
MassDEP

Michael Orbank:
STO Building Group, Carbon Leadership Forum

Randy Scott
Select Demo Services

GOALS FOR THIS DECONSTRUCTION WORKGROUP

- Increase awareness about our waste disposal crisis
- Grow the Reuse Industry in MA for valuable building materials
- Connect stakeholders and share ideas
- Align with MassDEP's R&R Action Plan
- Reduce climate impacts
- Enable Job Training and Workforce Development
- Support Diversity, Equity, and Inclusion

Basic Operating Principle:

Work for the greater good, collaborate, include all stakeholders

PREVIOUS MEETINGS

- September 2022 ***Demystifying Deconstruction***
- December 2022 ***Inspiration and Practice: Taking Buildings Apart***
- March 2023 ***Reuse Markets for Building Materials***
- June 2023 ***Climate, Culture & Community***: ***How Reusing Buildings Preserves Historic Spaces and Lowers Our Carbon Footprint***

Recordings and presentations for all meetings

can be found at this link.

Photo courtesy of The Building Deconstruction Institute/Dave Bennink

TODAY'S SPEAKERS

Peter Serafino
Home City Development, Inc.

Kristen Fritsch
Elkus-Manfredi Architects

Dan Costello
Costello Dismantling Co.

ELIAS BROOKINGS APARTMENTS

42 AFFORDABLE RENTAL APARTMENTS

367 Hancock Street

Springfield, MA

Home City Development, Inc.

261 Oak Grove Avenue
Springfield, MA 01109
www.homecitydevelopment.org

Company Overview

- Not-for-Profit developer of affordable housing founded in 1968
- Owns 462 apartments at 8 properties in Hampden and Hampshire Counties
- Completed $111.6 million of housing rehab/new construction in last 10 years

Project Structure

42 Rental Apartments

- 12 one-bedroom
- 25 two-bedroom
- 5 three bedroom

Affordability

- 15 apartments for households at/below 30% of Area Median Income
- 20 apartments for households at/below 60% of Area Median Income
- 7 apartments for households at/below 80% of Area Median Income

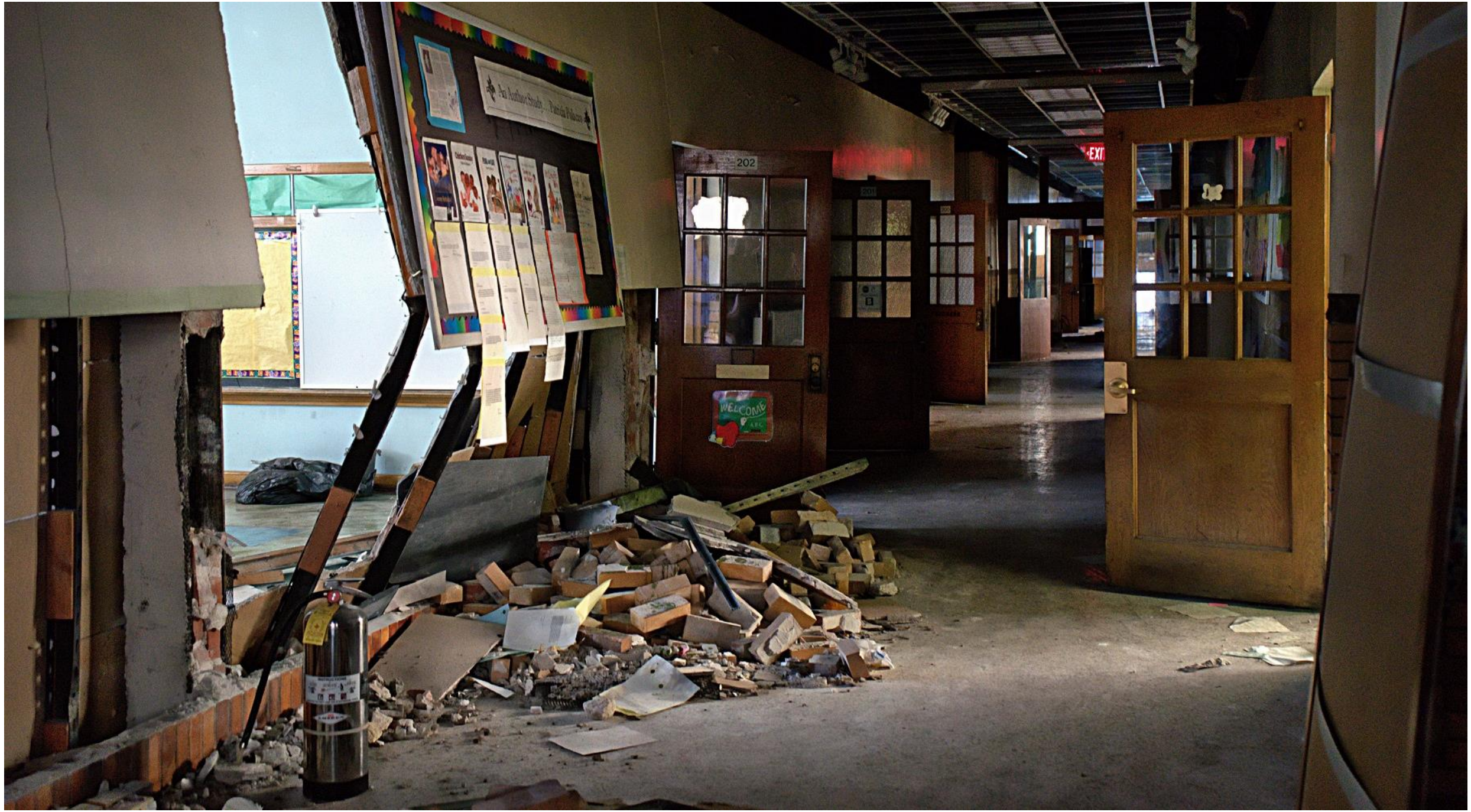
Project Structure

- 4 apartments accessible for persons with mobility impairments
- 2 apartments accessible for persons with sensory impairments
- 5 apartments for formerly homes households
- 3 apartments reserved for clients of MA Department of Mental Health

- Heat, hot water and parking included in rent
- In-unit central air conditioning paid by tenant
- Rooftop solar array helps defray owner electric costs

Building Information

- Built in 1925
- In service as a public school until June 2011
- Purchased by Home City Development in 2018
- In 2020 began the process of emptying the building of books, lockers, desks, chairs, cabinets, computer equipment, televisions, and miscellaneous school supplies in advance of renovation


202
WELCOME

Building Information

Home City Development donated furniture and educational materials and then recycled over 23 tons of material including:

- 9 tons of scrap metal
- 8 tons of books
- over 3 tons of cardboard and paper
- over 3 tons of televisions, computers, and other electronic equipment
- another 24.6 tons of waste materials was removed from the building.


School
is
over
2 = 3
THE UNITED STATES


Roca
Supervisor
MAIN Street
STAPLES copy paper 8½ x 11"
Disney

Building Information

With guidance from Leni Fried of Old Stone Mill Center and Abbey Massaro of Center for EcoTechnology, met people and organizations across Massachusetts that led to the re-use of materials, including:

- Springfield Rescue Mission, Springfield, MA
- The Springfield Renaissance School, Springfield, MA
- Old Stone Mill Center Zero Waste Maker Space, Adams, MA
- The Thrifty Crow, Cummington, MA
- Springfield Honors Academy, Springfield, MA
- Belchertown State School Friends Association, Belchertown, MA
- Greater Springfield Habitat for Humanity ReStore, Westfield, MA
- Black, Inc., Goshen, MA
- EcoBuilding Bargains, Springfield, MA
- Three Salamanders Design Studio, Cummington, MA
- Phineas Bates Elementary School, Roslindale, MA
- Camp Timber Trails, Tolland, MA
- Fromagerie Madeline, Leominster, MA
- Environmental Integrity LLC, South Hadley, MA
- Mike Minicucci, Buried By Time Photography, Westfield, MA
- David Manch, Silver Crescent Photography
- Center for EcoTechnology, Northampton, MA
- Springfield Boys & Girls Club, Springfield, MA
- Northstar Pulp & Paper, Springfield, MA
- Roca, Inc., Springfield, MA


EXIT


The Charles Brookings
School


INC.
orhoods

Home City
Development, Inc.

Thank you For Participating In This Forum!

ZERO WASTE PILOT PROJECT

Simmons University

Waste Prevention in Design Projects

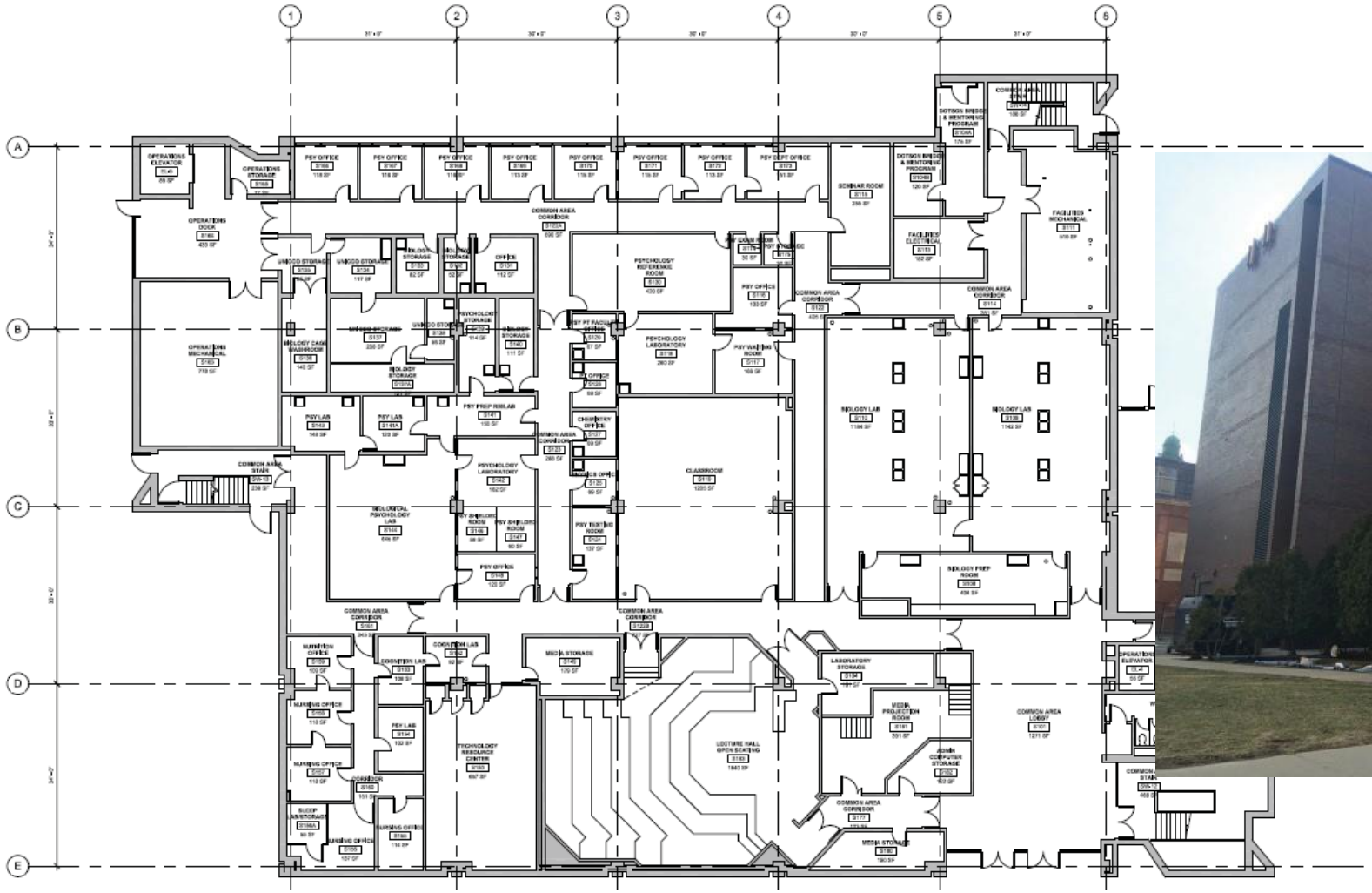
- New spaces - resilient, flexible, durable, and timeless designs will last the test of time, be easily adaptable and accomodate the changing use of the space.
- New construction - design and detail for deconstruction and reuse
- Existing spaces - maximize reuse and repurpose
- Minimize finish materials and select low-carbon products
- Encourage building owner to divert as much as possible from the landfill

Waste Prevention in Design Projects

Encourage owner to divert as much as possible from the landfill

- Who organizes this effort?
- Short timelines
- Surplus of items in the used marketplace

Simmons Park Science Building



Collaboration

- City of Boston Zero Waste Pilot - Susan Cascino
- RecyclingWorks - Abbey Massaro
- Boston Society of Architects/Carbon Leadership Forum Boston - Reuse Subgroup - Michael Orbank/Kristen Fritsch

Goals:

- Understanding of project type and hurdles
- Cost data and impact of waste diversion for commercial construction waste
- Reuse vendors and material streams

Timeline:

- Spring 2022 - Skanska applied for RecyclingWorks Technical Assistance through City of Boston's Deconstruction Initiative
- Spring 2022 - Demolition Bidders Walk thru
- Fall 2022 - Walk thru with Reuse Organizations and research of material take-back programs
- Winter 2023 - Volunteer event for Household Goods and Boston Building Resources
- Spring 2023 - Continued removal of reusable items by various organizations
- Summer 2023 -Abatement started

Opportunities:

- Reuse
  - Furniture/Desks
  - Doors and Hardware
- Green Goat and IRN
- Seeding Labs
- Takeback Programs for carpet and ceiling tiles
- Tracking for LEED

Opportunities:

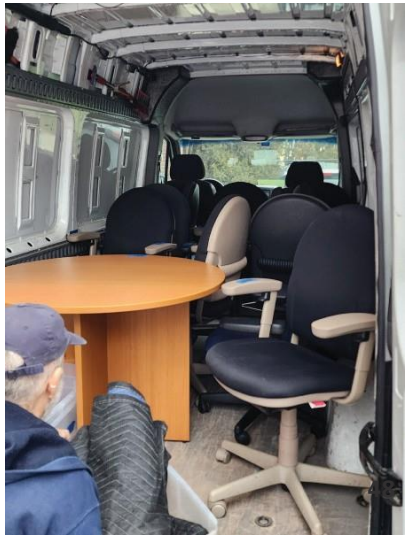
Volunteer Event

Items Reused:

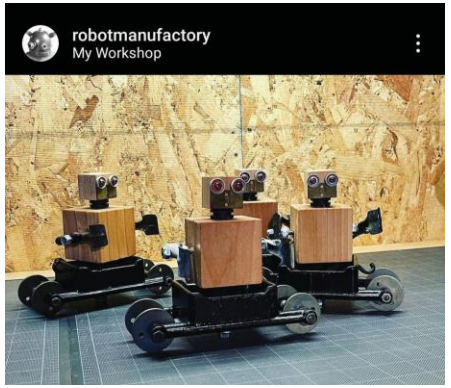




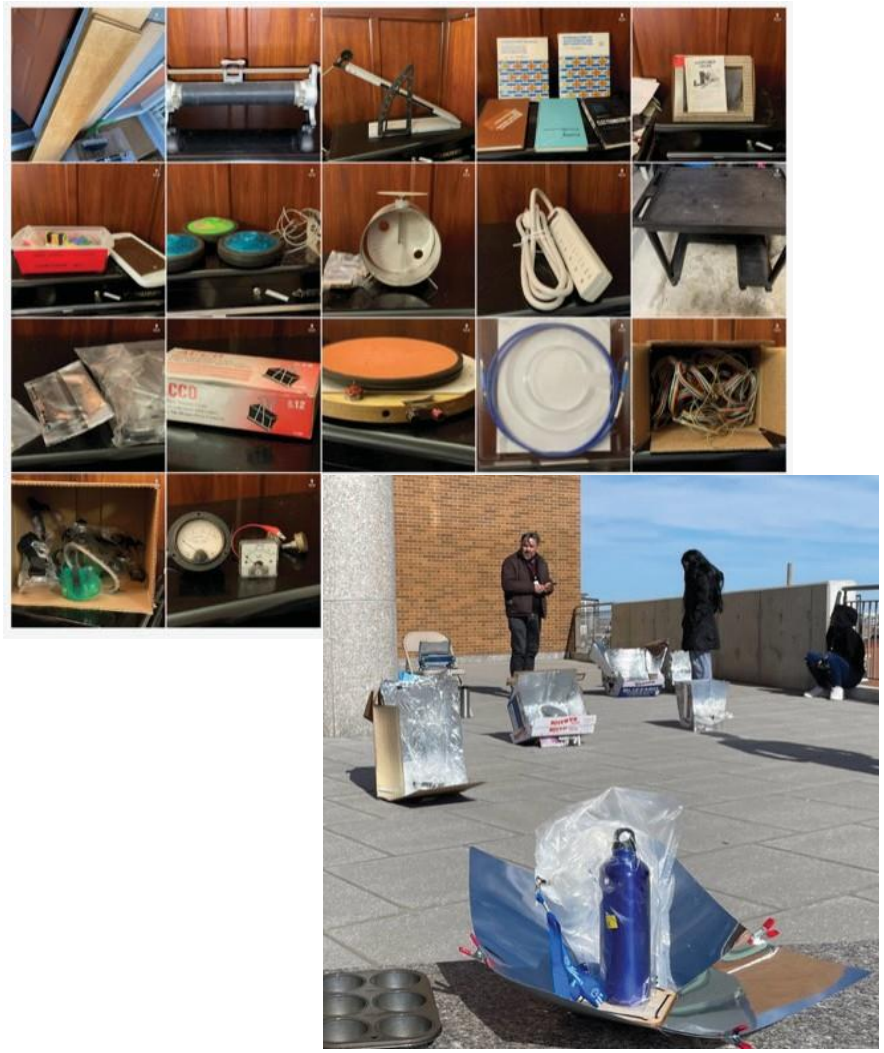





Items Reused:



Items Reused:



ORGANIZATION	EST # ITEMS	EST WEIGHT
Simmons		
Boston Public Schools	153	2947
Energy Teachers	12	230
Baystate Learning Center	15	515
The Great Exchange	510	559
Einstein's Workshop	362	178
More Than Words -boxes of books	15	400
Boston Building Resources	182	3118
Household Goods	83	3120
Dorchester Food Coop	159	3575
2Life Communities	47	2097
ReStore	70	2204
Green Goat	106	1110
EMA volunteers	29	927
Stonybrook Artists	41	2985
Robot Manufactory	16	335
Robotorium		
Goodwill Donation Center	9	170
TOTAL	1809	24470

Statistics/Data:

17

ORGANIZATIONS

Non-profit organizations, schools, and artists removed reusable items for use in their offices, to supply their clients, use for teaching, or art projects

12.2

TONS

Over 22,000 lbs of items were diverted from the landfill.

125+

FURNITURE PIECES

Desks, chairs, stools, lab tables, computer tables were removed for use to refresh offices and furnish apartments for newly housed citizens.

300+

LBS GLASSWARE

Beakers, test tubes, flasks, specimen containers and petri dishes were reused

Waste Prevention in Design Projects

Encourage owner to divert as much as possible from the landfill

+

Encourage designers to specify reclaimed materials

COSTELLO
DISMANTLING

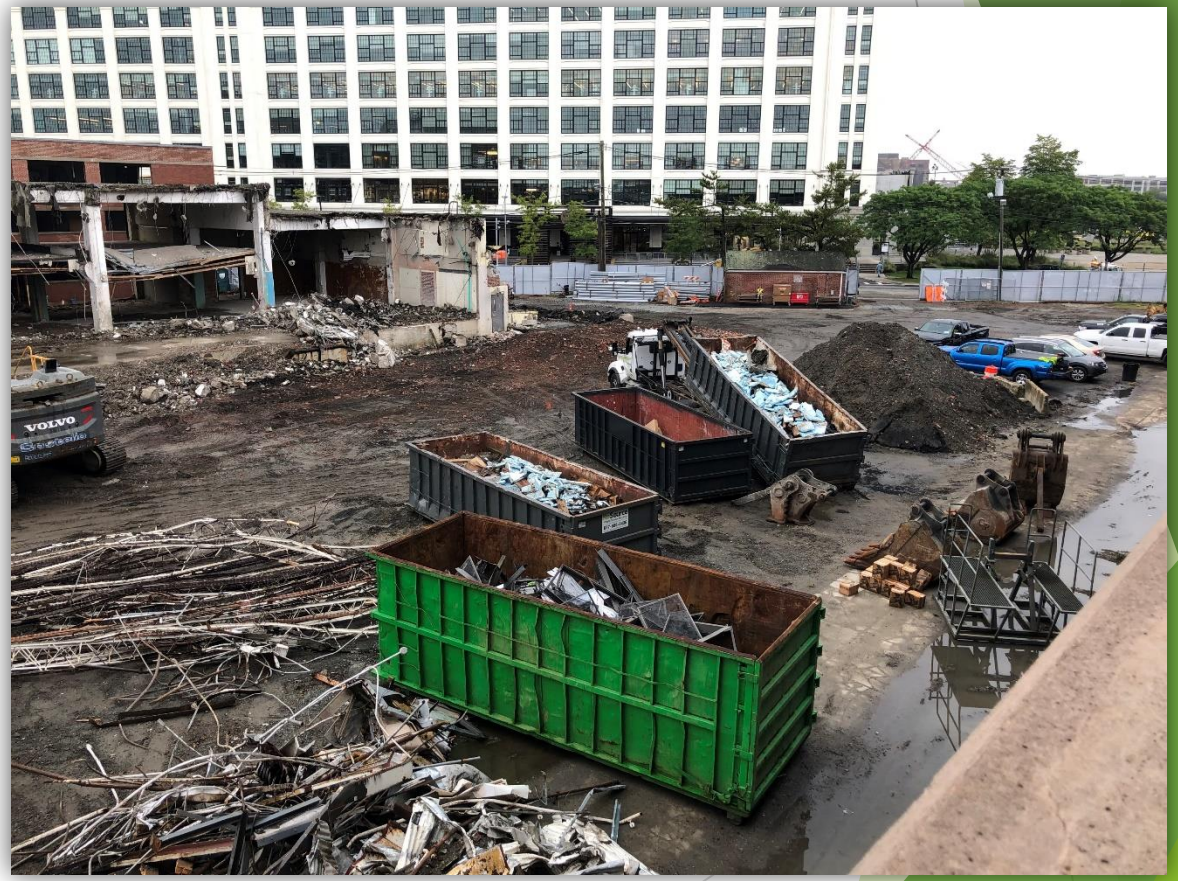
DECONSTRUCTING 22 DRYDOCK AVENUE

For our case study today, we will examine a recent project at 22 Drydock Ave in the Boston seaport area.

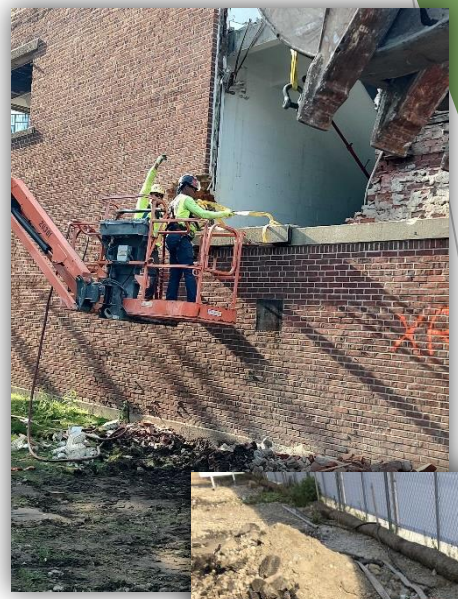
DECONSTRUCTION IS ONE OF THE MOST VALUABLE TOOLS IN THE DEMOLITION OR DISMANTLING CONTRACTOR'S ARSENAL

There are several necessities for a successful deconstruction phase of a demolition project:

- Salvageable building components
- Being able to select a safe and efficient work practice to recover the selected building components
- Having the contractual time to enact a deconstruction operation
- Having sufficient space for processing salvaged material for economic shipment from the site



This is a **LEED PLATINUM** project, and we are actively participating in our material recycling protocols, but also in salvage of architectural artifacts that will be reincorporated in the new building being developed for the site.

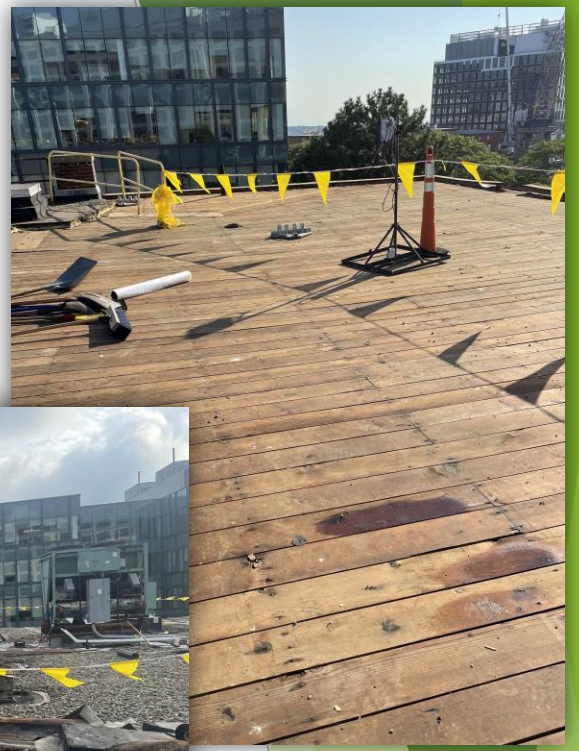


We recognized the potential for good salvage from the 22 Drydock building early in our introduction to the project.

The structural make up of the building was heavy timber framing. We know from similar building types, that we have well honed mechanical capabilities to dismantle this structure safely, with minimal labor exposure and high recovery of delicate timbers, by using one of our high reach excavators equipped with a rotating grapple.

A great deal of planning, sequencing work and site preparation must occur to allow the planned salvage to occur.

First of all, asbestos abatement and haz mat recovery must take place. Only then can any of the dismantling process begin.



We had sequenced our work so that all asbestos abatement and an adjacent concrete structure had been demolished, leaving a clean slab for processing and stockpiling the 22 Drydock building material components.

In a very systematic manner, we separate and remove building components to reveal the timbers to be harvested.

This results in a deliberate, careful source separation of:

- painted and unpainted bricks
- painted and unpainted concrete
- high wood content C&D debris
- mixed unsorted debris
- mixed grades of ferrous scrap metal
- mixed grades of nonferrous scrap metal

We utilize a variation of the source separation theme on every project which we undertake.

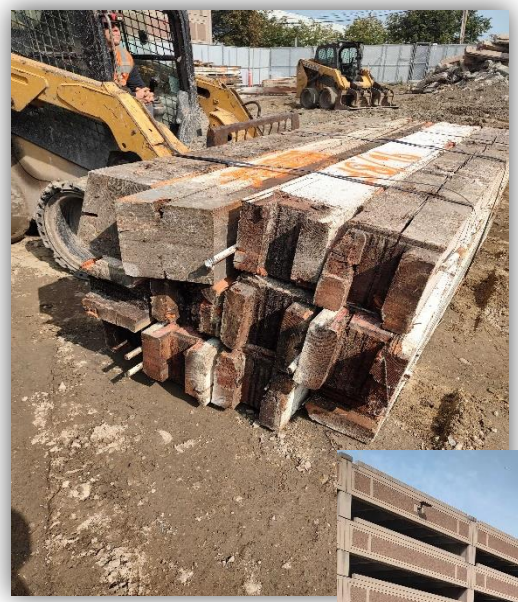
Not only is disposal pricing controlled, but we maintain the site in a neat and organized manner which greatly improves site safety and appearance during a demolition project.

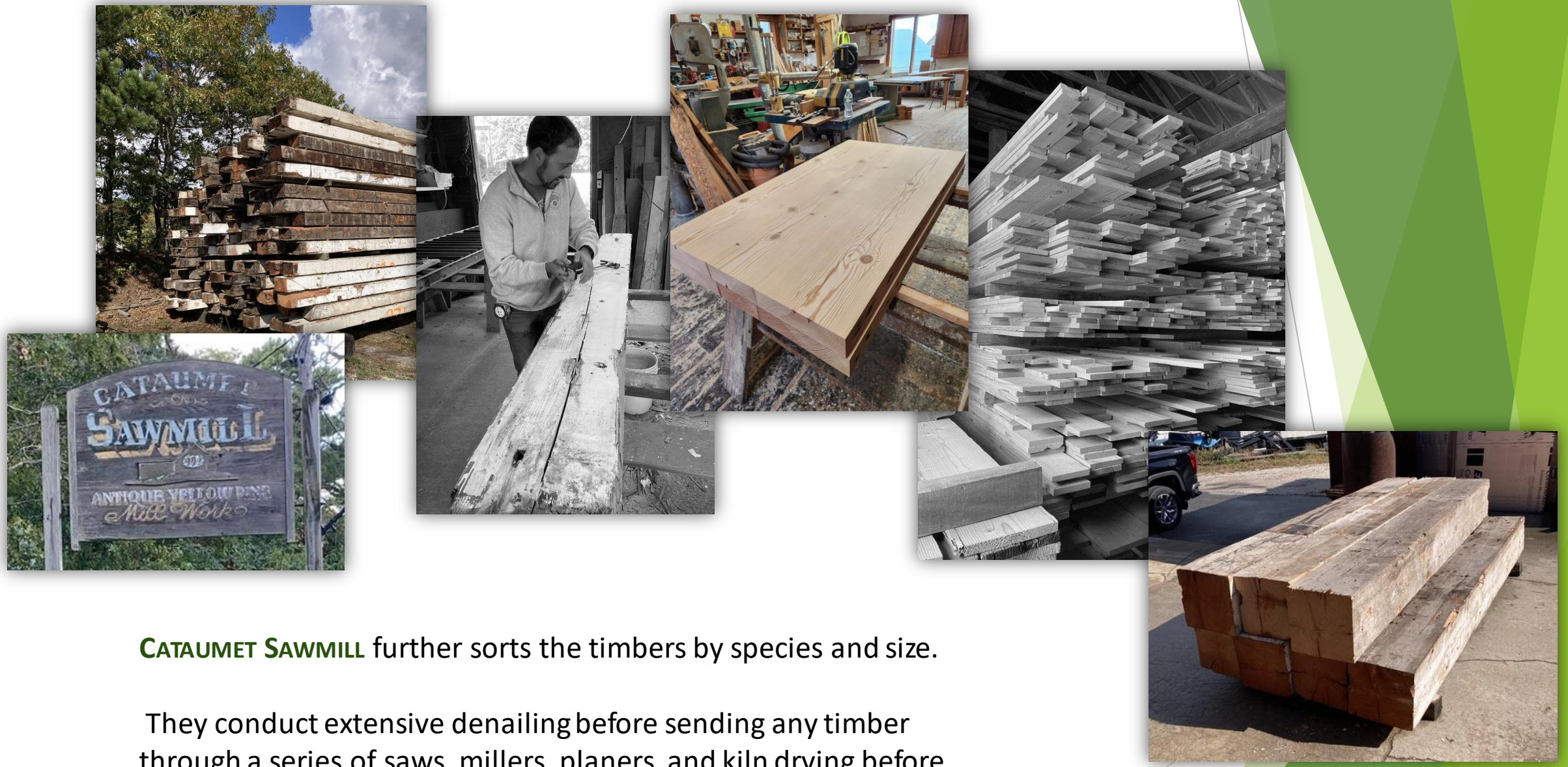
In a continuous effort of sorting and packaging all salvaged materials, as demolition proceeds, timbers were bundled and loaded for delivery to a local sawmill with whom we have a long-standing relationship.

Upon delivery, another life begins for the timbers.

Before that can happen, we realize that if we do not extract, handle, and package these timbers without substantial damage, they are useless and will carry a great cost for disposal rather than producing a stream of revenue, and producing the new life for the timbers as previously mentioned.

This building dated to 1923, so these timbers are 100 years old in the building. They are delicate.





CATAUMET SAWMILL further sorts the timbers by species and size.

They conduct extensive denailing before sending any timber through a series of saws, millers, planers, and kiln drying before producing a market ready product.

Early one morning last week we see a view as the building site is ready for a new life through the demolition process.

The owner/developer of the site is **Related Beal Properties**.
They will now be able to begin building a new life sciences facility for an existing adjacent client on the new space created.

Costello Dismantling Company, Inc.

Date of Report: 10/24/2023

CONSTRUCTION & DEMOLITION WASTE MANAGEMENT PLAN

Innovation Square - PHASE 3 (20 Drydck 16,805 SF; 22 Drydock 45,000 SF = 61,805 SF)

Contractor	Material	Tons Non-Haz LEEDS	% total	Collection Method	Sent to	% Diversion	Tons Diverted	End Use
Costello	Non-Friable ACM-NTWP	51	1%	Abatement	Minerva	**0%**	NA	NA
Costello	Friable/Non-Friable Traditional ACM	32	1%	Abatement	Minerva	**0%**	NA	NA
Costello	HAZMAT	10	0%	Abatement	Republic Svcs.	**0%**	NA	NA
Costello	Metal	260	5%	Separated	*Spiegel-Middleboro Recycle*	**100.0%**	260	Feedstock
Costello	Concrete/Masonry	92	2%	Separated	*RSK*	**100.0%**	92	Road Base
Costello	Wood/Timbers	99	2%	Deconstruct	*Cataumet*	**100.0%**	99	Reclaimed
Costello	High Wood	532	10%	Source Separated	*Epping*	**96.0%**	511	Fuel
Costello	Mixed C&D	196	4%	Source Separated	*Roxbury*	**75.0%**	147	Facility Byproduct
Costello	C&D Special Waste	218	4%	Comingled	*SA Dunns, NY*	**0.0%**	0	DTM
Costello	Clean Concrete	3,650	71%	Source Separated Downsized	*Remain Onsite*	**100.0%**	3,650	Temporary Onsite Use
	TOTALS	**5,141**	**100%**	**5,048**	**tons**	**94.3%**	**4,759**	
				Recycled Total				
	Floor Area	**61,805**	SF			**94.3%**	Check	
						75.0%	**LEEDS**	
	Average Weight	**166**	PSF		NOTE: LOWEST C&D Recycling Rate Shown.			

QUESTIONS

DECONSTRUCTION IS HAPPENING!

MATERIAL SEPARATION LEADS TO SUCCESS

Save the Date
Next Deconstruction Workgroup Meeting
January 17, 2024

REGISTER HERE

Announcements:

- Biden-Harris Administration Announces $100 Million in Grants to Support Manufacturers of Cleaner Construction Materials
- Build Reuse Webinar TODAY!

THANK YOU!

DECONSTRUCTION & BUILDING MATERIALS REUSE

Increase Material Supply
Create Jobs
Reduce Waste
Lower Costs
Save Energy
Preserve Value
Conserve Resources

Let's Do This... Together!

MASSDEP CONTACTS

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Reduce and Reuse Working Group

https://www.mass.gov/service-details/massdep-reduce-reuse-rr-working-group