



WORKFORCE DEVELOPMENT IN DECONSTRUCTION

**MASSDEP DECONSTRUCTION
WORKGROUP**

MEETING #7

JULY 11, 2024

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



Mike Elliott
MassDEP C&D Lead



Alison Frazee
Boston Preservation
Alliance



Kristen Fritsch
Elkus Manfredi Architects



Pam Howland
Old Window Workshop



Leah Kelleher
MassDEP



Abbey Massaro
Center for Ecotechnology



Tina McCarthy
Town of Brookline



Kathi Mirza
MassDEP



Michael Orbank
STO Building Group,
Carbon Leadership Forum



Janice Pare
MassDEP



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



Workforce Development in Deconstruction: Setting the Scene

Mass DEP Deconstruction and Reuse Working Group



Michael Orbank - Sustainability Manager, Structure Tone



STRUCTURE TONE

Setting the Stage - Useful Terminology

- ▶ Terms to be familiar with:
 - ▶ C&D Waste - waste generated through construction and demolition activities
 - ▶ Demolition - the process of tearing down buildings and other artificial structures
 - ▶ Deconstruction - the process of carefully disassembling, preserving, and reusing elements of buildings and artificial structures to extract the maximum value of materials for future use or recycling
 - ▶ Embodied Carbon - carbon impacts inherent to the extraction, manufacturing, transportation and end of life of a material
 - ▶ Workforce Development - the process in which a region's economic stability and prosperity is enhanced through focusing on people/workers instead of business

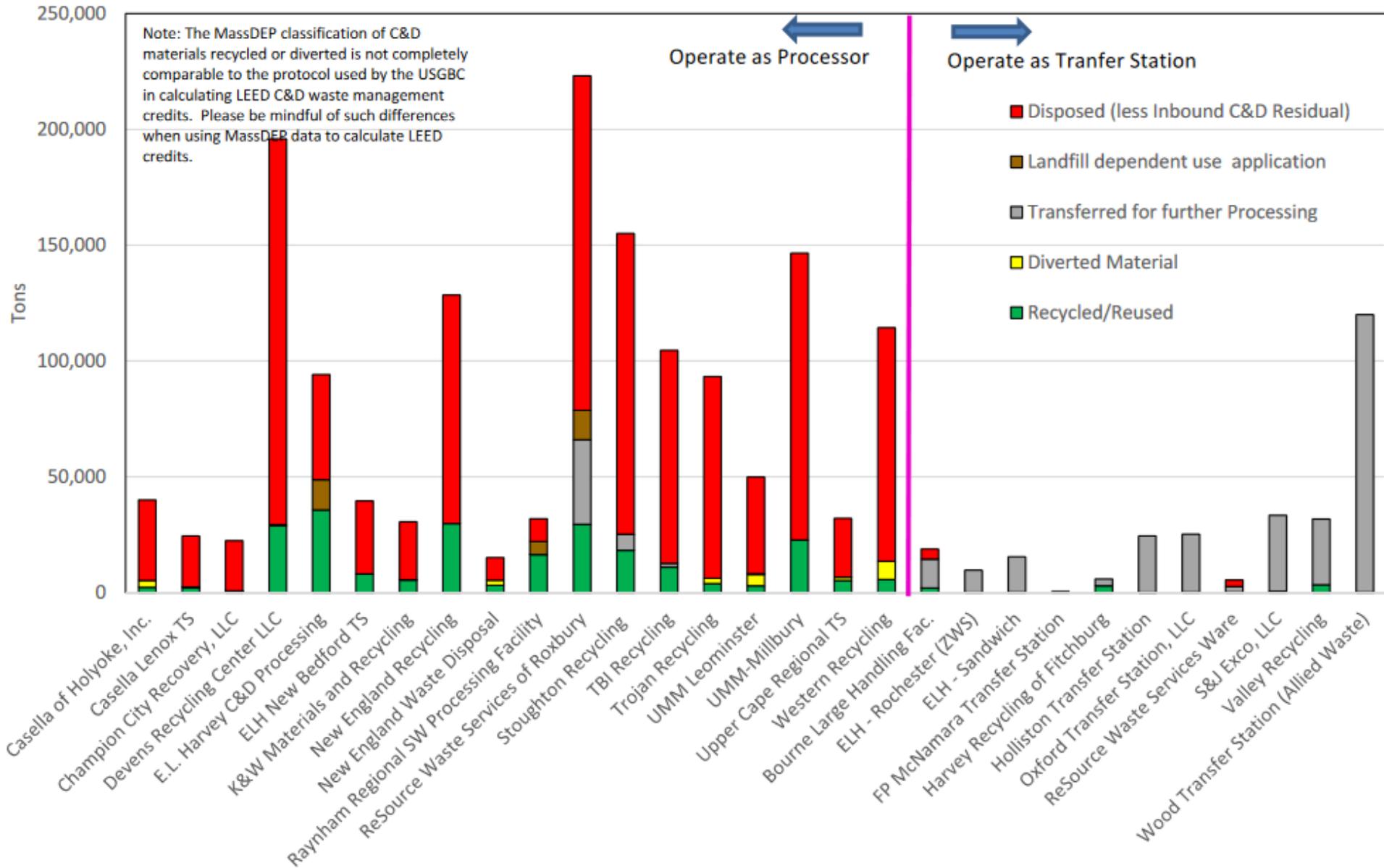
Setting the Stage - Deconstruction

- ▶ Why are we talking about this?
 - ▶ C&D waste is a (growing) problem
 - ▶ 40% of total US solid waste*
 - ▶ Demolition = 90% of C&D waste*
 - ▶ Dwindling landfill capacity
- ▶ Benefits of Deconstruction
 - ▶ Environmental
 - ▶ Economic
 - ▶ Social and Cultural
- ▶ Unrealized Value of Re-Use
 - ▶ Financial and carbon costs
 - ▶ Lead time
 - ▶ Material health



- Massachusetts C&D Handling Facilities - Disposition of C&D Materials Handled by Facility in 2023*

*Quantities are "as reported" to MassDEP in CY2022 C&D Annual Facility Reports



Setting the Stage - Deconstruction

- ▶ Current Landscape in MA

- ▶ Residential

- ▶ Sporadic + one-off, niched
 - ▶ Lacking defined training
 - ▶ Inconsistent requirements

- ▶ Commercial

- ▶ Not typical, industry dominated by demolition
 - ▶ Perceived risks + barriers
 - ▶ Lack of policy movement = why change?

- ▶ Deconstruction as a key to unlock circularity

- ▶ Design
 - ▶ Construction
 - ▶ Reuse vendors
 - ▶ Policy development



Speakers + Considerations

- ▶ Questions to keep in mind:
 - ▶ What differences exist in training demolition vs. deconstruction?
 - ▶ What are the first steps in transitioning a workforce from demolition to deconstruction?
 - ▶ How does deconstruction relate to historic preservation?
 - ▶ How can deconstruction support climate action + decarbonization?
- ▶ Speakers:
 - ▶ Dave Bennink - Building Deconstruction Institute, Re-Use Consulting
 - ▶ Katie Fitzhugh - Re:Purpose Savannah
 - ▶ Brock Leiendecker - North Bennet Street School
 - ▶ Randy Scott - Select Demo, Hancock Academy



Deconstruction Dave



Circular Construction: Where the Built Environment and Circular Economy Intersect

I'm building UP an industry that takes DOWN buildings...

- Deconstruction Contractor – thousands of job sites including homes, restaurants, sheds, hospitals, garages, schools, etc....
- Store owner – 21,000 square foot retail space selling an array of residential and commercial materials
- Consultant – Helped out in 44 States, 5 Provinces and 12 Countries
- Workforce Development – 1000+ jobs created and 98 Circular Businesses



236 Circular Businesses/ 95 Start-ups

- What is working in workforce development?
- What is not working?
- What can be improved?
- How can we lower the 'entry fee' and involve all people groups?
- How can we grow the circular economy?
- What can we learn from the linear economy?

Reuse Innovation Center

Process:

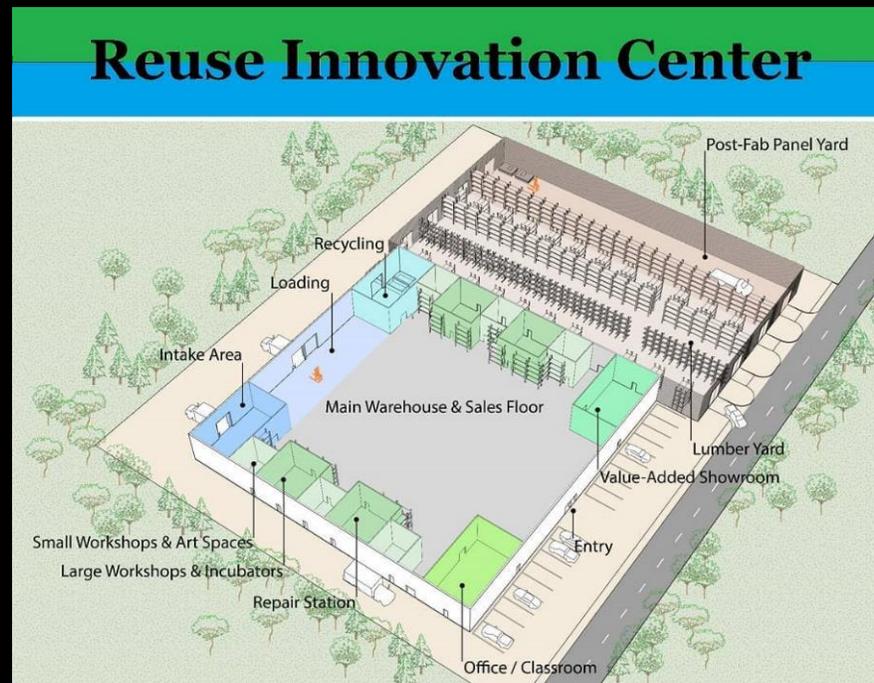
Collect used wood

Transport to RIC

Remanufactured

Placed in Showroom

Trainees involved in
every step



Benefits:

20x more jobs

**Job training—8 jobs in
1**

90% Landfill Diversion

Diversity Achieved

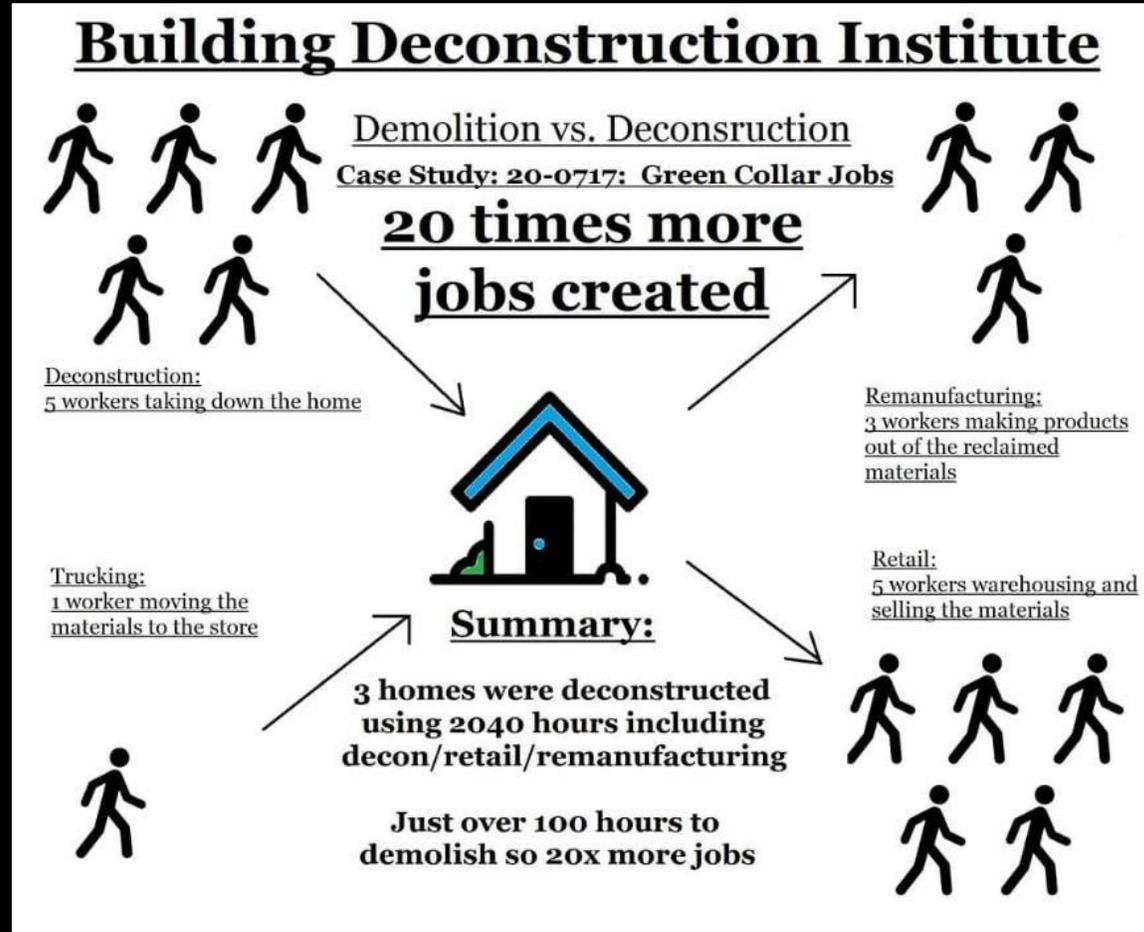
Affordable materials

Reuse Innovation Center

- Green collar jobs / job training
- Deconstruction/construction,
- Re-manufacturing businesses
- Logistics, warehousing, repair, marketing, sales
- Historic preservation, job training, cleaner building removal, environmental protection....



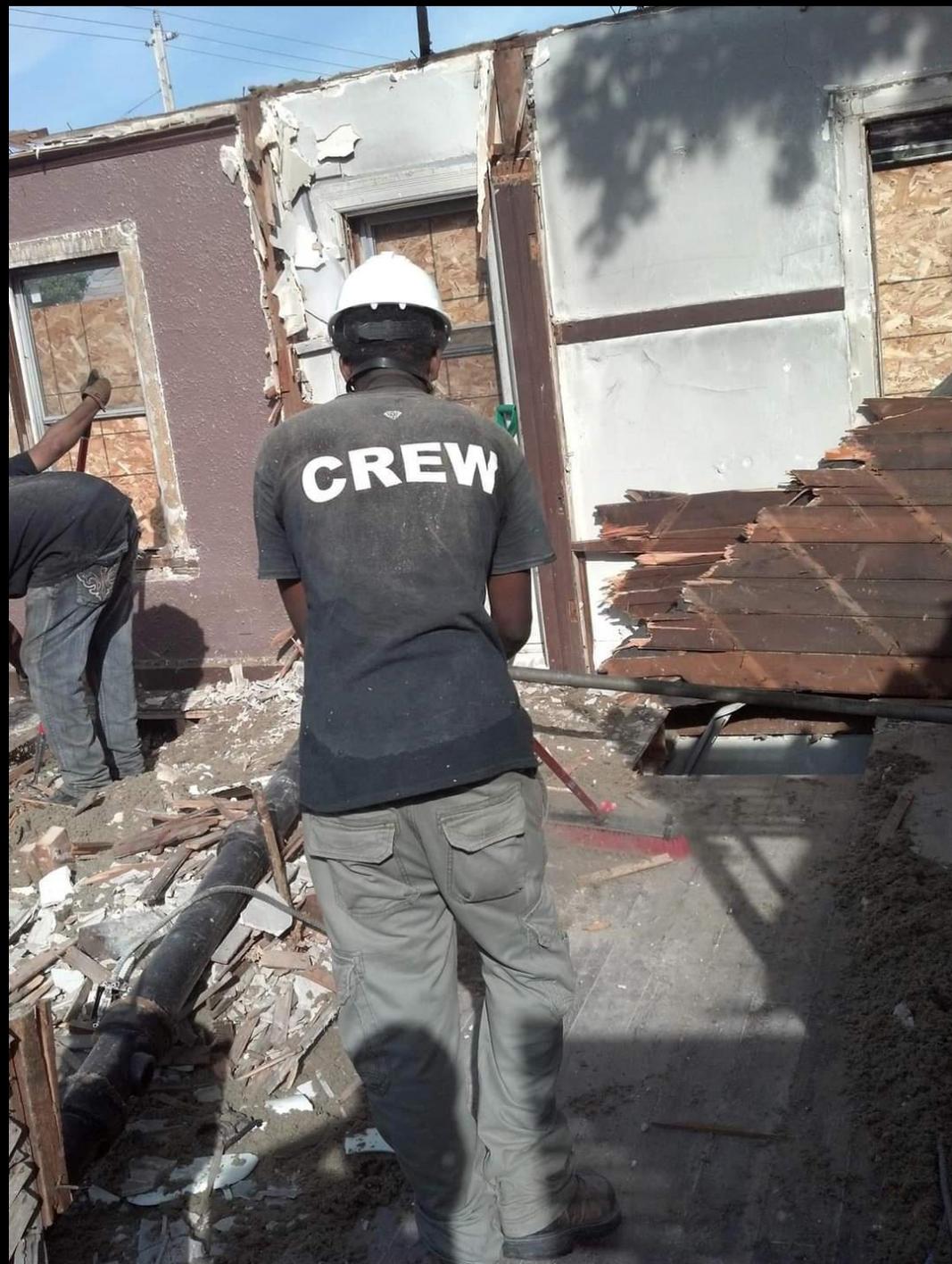
Summary - 20 x More Jobs



Getting lives back
on track

Spotlight:
Calvin

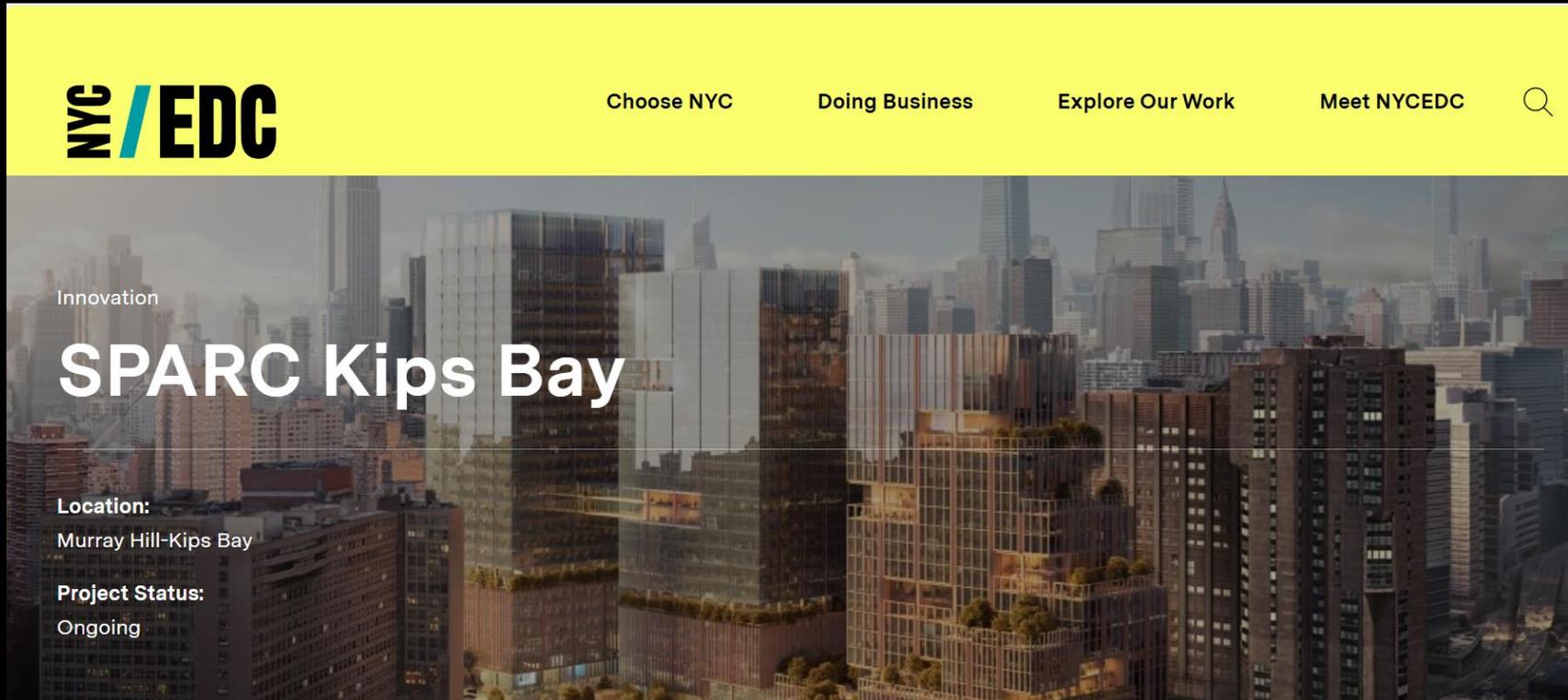
Question:
Why was he
wearing safety
gear home on the
bus?



Portland Decon Ordinance

- Historic preservation
- Health and safety
- Affordable materials
- Environmental benefits
- Training and public involvement in the process
- Lake Oswego

NYC's Flagship Circular Construction Project: \$2.1 billion SPARC Kip's Bay – historic preservation and more



This project will involve:

Hundreds of Green-Collar Jobs---Workforce development (400,000 job goal)

Reuse-Repair-Recycling-Remanufacturing

Owner-reuse (existing materials incorporated into new buildings)



RE: PURPOSE SAVANNAH



OUR MISSION

Re:Purpose Savannah is a women+ led 501(c)3 nonprofit establishing a sustainable future through the deconstruction, salvage, and reuse of historic buildings.

90%



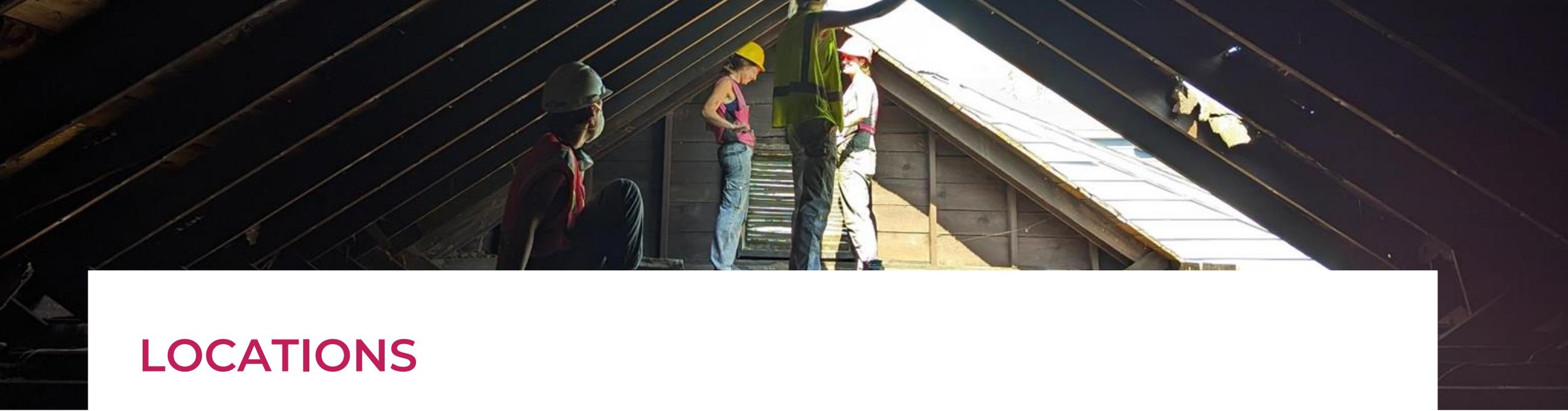
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DECONSTRUCTION TRAINING



LOCATIONS

SAN ANTONIO, TX
ATLANTA, GA
CONWAY, SC
SAVANNAH, GA
ONTARIO, CANADA

HOW WE DO THINGS

INSPECT & ASSESS	DETERMINE HOW BUILDING CAN BE BEST UNBUILT
SALVAGE AUDIT	TAX DEDUCTION ESTIMATE FROM CERTIFIED APPRAISAL
DOCUMENTATION & RESEARCH	3D SCANNING + EXTENSIVE HISTORICAL RESEARCH
DECONSTRUCTION	PERMITTING AND DECON TO CLIENTS PARAMETERS
PROCESS & SALVAGE	FOR REUSE BY CLIENT OR FOR RESALE
REPORT	DATA OF TONNAGE DIVERTED

HOW THEY ARE NORMALLY DONE

INSPECT & ASSESS	PROVIDE DEMO ESTIMATE (MAYBE INCLUDES PERMITTING)
DEMOLITION	CRUSH AND LANDFILL

Historic Preservation Education

Brock Leiendecker

Instructor of Carpentry - North Bennet Street School

Preservation Carpenter

Timber Framers Guild Member

Deconstruction in Historic Preservation



















Deconstruction vs Demolition

- What standard is being applied to the project - Secretary of the Interior's Standards for Treatment of Historic Properties.
 - Preservation, Rehabilitation, Restoration, or Reconstruction
- Selective Demolition is still an option

Skills for Deconstruction

- Understanding how to read historic fabrics or building materials.
 - What do the materials in the structure tell us about the methods, tools, and process used in construction?
- Knowledge of the building process affords preservation carpenters the ability to deconstruct in a manner that preserves historic fabrics and prepares materials for future use.
 - Process for reverse engineering structures.

Deconstruction in Historic Preservation

Material Salvage

- Building materials salvaged for future use when similar materials are needed due to species
- Materials will be repurposed for use on another structure - repairing framing members, sheathing, masonry, etc

Structural Preservation

- Entire structure deconstructed and stored for future restoration
- Private client projects where structures are dismantled and restored in a new location.

Training Opportunities in Historic Preservation

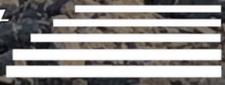
1. North Bennet Street School
2. Massachusetts Student Conservation Association - Student Conservation Corps
3. National Park Service Historic Preservation Training Center (Frederick, MD)
4. HistoriCorps - volunteer based preservation work on NPC, USFS land (Denver, CO)
5. Timber Framers Guild
6. Carpenter's Without Borders
7. Preservation Trades Network
8. Historic Deerfield
9. American College of the Building Arts



Select 
— *Demo* SERVICES LLC.

NEW ENGLAND'S PREMIER
SPECIALTY CONTRACTING
COMPANY

A PROUD MEMBER OF THE SELECT GROUP OF COMPANIES

Select 
— *Demo* SERVICES LLC.

Select
PAINT
AND FINISHES

K-TOWN
DISPOSAL

Select — TILE —
MARBLE & FLOORING

Select 
— **SPRAY** SYSTEMS LLC.

THE SELECT GROUP OF COMPANIES OVERVIEW



2023 Annual revenue of all Select companies - \$225 Million; \$150 million Select Demo

Offices in Salem, NH, Plymouth, MA, Hartford & Milford, CT & Boston, MA
Perform work on a national basis

\$75 million single/\$200 million aggregate bonding

Exceptional insurance coverage:

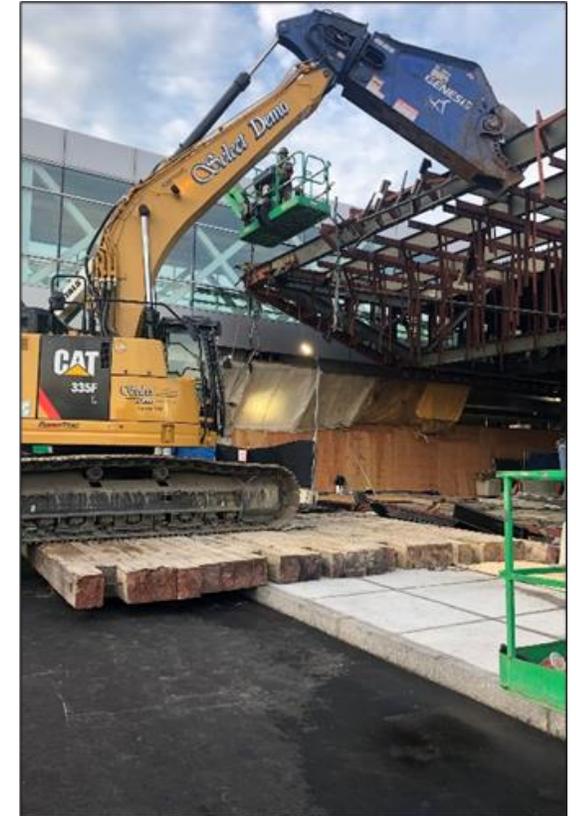
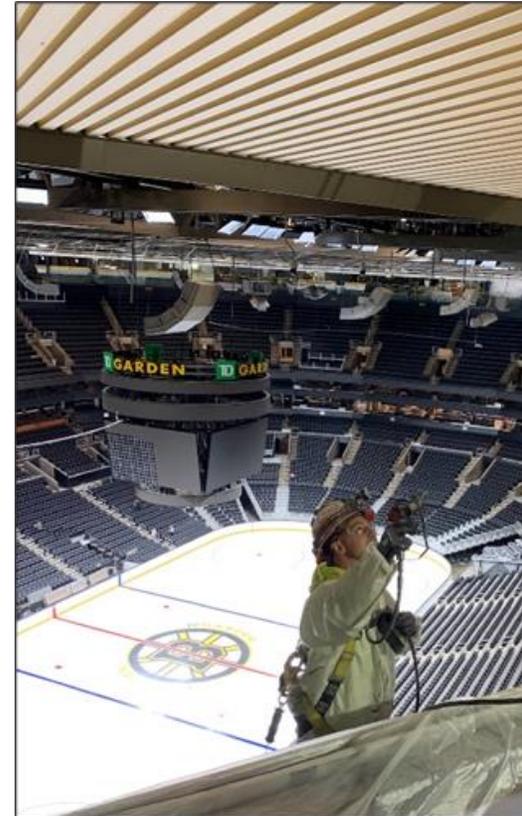
- \$15 million in Pollution
- \$25 million in Excess/Umbrella

Maintains experienced, local, diverse workforce. Runs up to 500+ field employees per day

Turnkey Contractor – One Stop Shopping

Deep commitment to health & safety:

- EMR 0.69
- 1 million hours in 2023



DECONSTRUCTION, REPURPOSE, RECYCLE



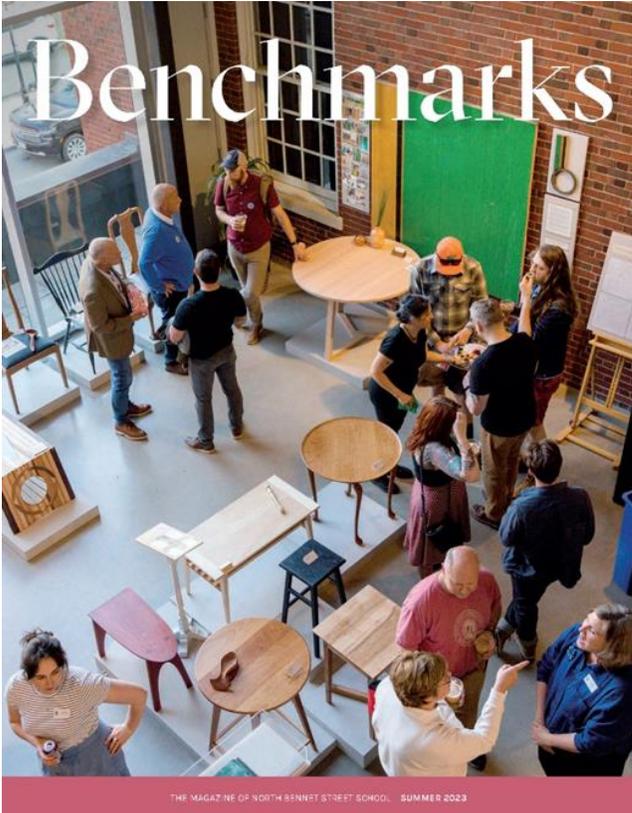
Why Deconstruction?

Deconstruction is the practice of dismantling buildings to salvage usable components for reuse in other building projects. Deconstruction happens before recycling, enabling usable materials such as lumber, windows, doors, fixtures and cabinets to be re-deployed thus reducing end-of-pipe recycling and disposal costs at C&D handling facilities. Deconstruction also supports workforce and job training opportunities, local economic development, historic preservation work, reduces greenhouse gas emissions, and preserves valuable resources as outlined by EPA.

- Select Demo is part of the **Mass DEP Deconstruction Work Group** with its release of the 2021 Reduce & Reuse Action Plan, which has developed a 2020 – 2030 Solid Waste Master Plan (2030 Plan) establishing the Commonwealth of Massachusetts' policy framework for reducing and managing solid waste generated by MA residents and businesses.
- This program, along with Select Demo, is committed to reducing waste and advancing reduction and reuse and focuses on reducing upstream waste generation.
- Committed to:
 - Assessing the best opportunities to increase reuse and extend product lifetimes
 - Identifies related barriers and capacity needs
 - Identifies and provides data needed to support and inform these efforts
 - Creates a network and open dialogue to advance progress
- Select is also a member of the **Carbon Leadership Forum** that accelerates the transformation of the building sector to radically reduce the greenhouse gas emissions attributed to materials (also known as embodied carbon) used in buildings and infrastructure. They research, educate, and foster cross-collaboration to bring embodied carbon of buildings and infrastructure down to zero.



NORTH BENNET STREET SCHOOL FLOOR TO TABLE



- Select Demo was spotlighted in Benchmarks – a magazine for the North Bennet Street School, a private vocational school in Boston. To continue with our commitment to Deconstruction, Repurpose, Recycle, Select Demo teamed with NBSS as part of their 2023 Continual Craft Exhibition that explores how NBSS students and graduates are contributing to a more lasting future by crafting objects with care, using materials considerably and repairing the world around us.
- Select donated the flooring of the former Boston Celtics practice facility in Waltham, MA, which was part of a demolition project Select was involved in. Select felt the basketball court's oak flooring much historical significance to end up in a landfill.
- After careful dismantling and salvaging of the flooring, they shared the wood with a number of local vocational schools, including NBSS, to highlight both sustainable practices and the ingenuity of tradespeople.
- After receiving the flooring, NBSS reached out to a former student, Sandy Weymouth, owner of Sawtimber, a crafts furniture company, to update and elevate the reclaimed wood flooring into a breakfast table.
- Flooring was detached from subfloor, hundreds of staples removed by hand and the wood was milled, jointed, glued, milled and jointed again.
- He transformed the reclaimed wood into a Scandinavian-style, 3-legged kitchen table with intricate joinery and modern aesthetic, which is unrecognizable from its previous purpose.
- With the right skills, energy and time, Sandy and NBSS transformed the landfill bound material



DIVERSITY STRATEGY PROGRAM



A more diverse project = a more profitable and productive project!

- Partners with Disadvantaged Business Entities (DBEs) and utilize them on many our projects that have DBE or other participation goals for subcontracting and workforce participation.
- Believe that by maximizing opportunities for DBE participation, we establish long-lasting, successful trade partnerships, while helping underdeveloped local small businesses.
- Recognizes the importance of fulfilling minority and residence workforce goals. Always meet minority and women goals on projects. Majority of our abatement workforce is Asian and Hispanic.

- Highrise Consilidate – WBE (Painting)
- Mill City – MBE (Labor)
- Excell Construction – MBE (General Conditions)
- Jerez – M/WBE (Labor)
- IAT Logistics – WBE (Asbestos & Hazardous Waste Hauling)
- PC Trucking – WBE (C&D Hauling)
- Aaxiom Concrete Sawing – WBE (Sawcutting)
- Buckley Elevator – WBE (Elevator Decommissioning)
- O’Mahoney Electrical Services – WBE (Electrical Services)
- DAV – Veteran Owned (Labor)
- Choice – Veteran Owned & MBE (safety & Labor)



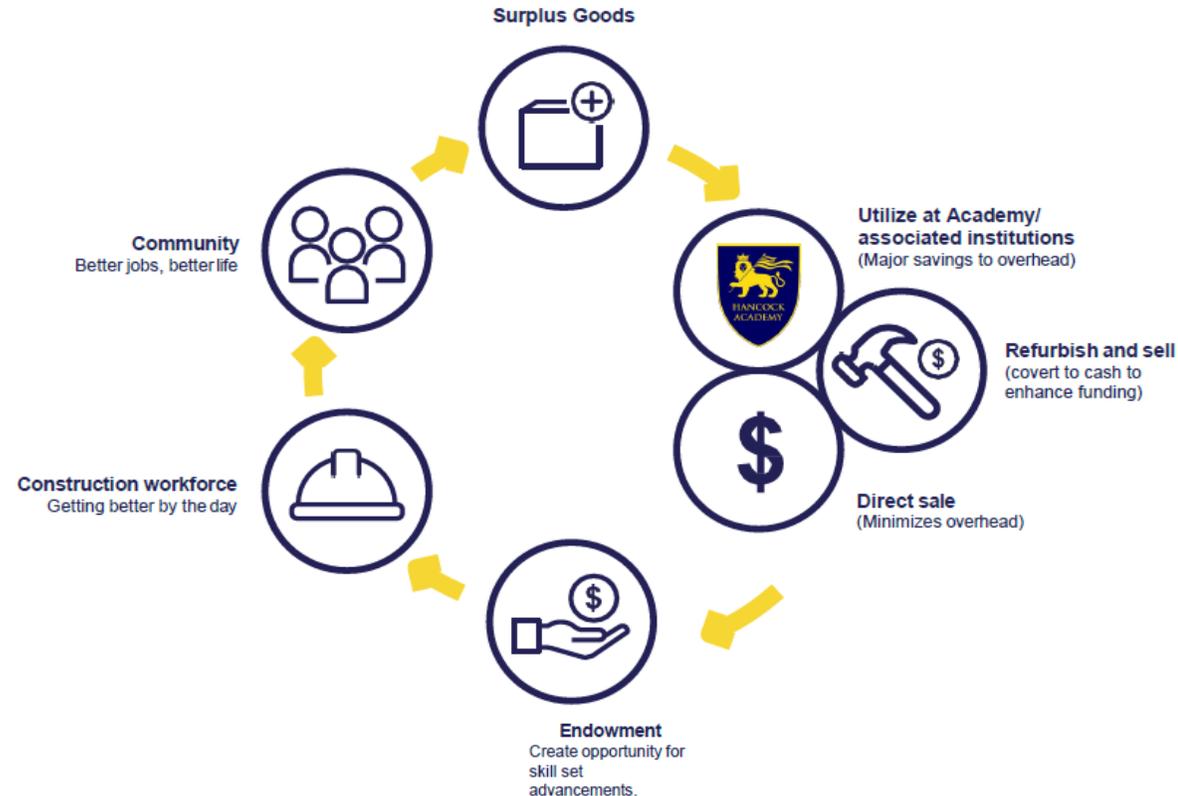
DETAILED WASTE MANAGEMENT PLAN

Material	Quantity- Weight cubic yards	Disposal Method	Facility	Recycled	Repurposed	% Not Diverted
concrete						
Bricks						
Metals						
Furniture						
Cabinetry						
Drywall						
Acoustical ceiling tile						
Carpet squares only						
Broadloom carpet						
Utilities- Electrical, HVAC, Plumbing						
Windows						
lighting						
Dimensional wood						
Wood flooring Finished Goods						
Paper						
Ink Cartridges						
Roofing						
Green waste						
Mixed						

CIRCULAR ECONOMY INITIATIVE



Empowering the future for skilled Tradespeople Circular Economy Initiative



Solves

- Diverts waste from landfills.
- Creates many opportunities for employment.
- Enhances local communities.
- Substantially reduces carbon footprint.



HANCOCK ACADEMY



MISSION & VISION

Hancock Academy is a nonprofit organization that addresses the growing shortage of skilled workers and the aging workforce in the trades. Our mission is to entice new tradespeople by providing financial, technical, or living expenses for training and ongoing development opportunities, including for growth and leadership roles, as well as creating connections between trainees and potential employers.



WHO WE ARE

We are a team of experienced professionals with more than 300 years of combined experience in various trades and expertise in banking, finance, nonprofit management, education, law, and business. By combining our knowledge and expertise, we are tackling shortages in skilled labor through scholarships, mentorship, and education, contributing to the economy by inspiring, engaging, and supporting people entering the trades, and implementing sustainable environmental solutions through incubators and in the community.



GOALS

- Inspire and engage youth to enter and build a career in the trades.
- Develop a diverse, equitable, and inclusive workforce with the necessary training support to be successful.
- Implement sustainable practices using reused and repurposed materials to protect the environment.

OBJECTIVES

Establish a circular economy with sustainable practices by utilizing excess capital. Expand the trading industry, provide higher-paying job opportunities, enrich the community, and promote environmental sustainability.

OUR SOLUTION

Focused on the needs of local communities, Hancock Academy plans to open and operate Interactive Innovation Centers across New England. These centers will house ample warehouse space for experts to work with students and disadvantaged business owners to repurpose and reuse materials in community projects. We will sell products or donate repurposed materials to other businesses and nonprofit organizations to fund scholarships. The academy will provide mentorships and a live opportunity network to support disadvantaged businesses as well as students. The centers will also serve as a hub for educational classes and sustainability projects by housing an incubator or "Think Tank" where architects, general contractors, and sustainability companies can collaborate on various projects.



HANCOCK ACADEMY



THE PROBLEM

We have all seen the impact of the labor shortage on the economy, our communities, businesses, access to goods and services, and quality of life. Today, the United States faces the most significant shortage of tradespeople the industry has ever seen, affecting many of us. If you've tried to hire a plumber, electrician, or builder in the past few years, you often wait months for them to complete non-emergency work. There's a reason for this: the labor pool of qualified skilled tradespeople is shrinking. According to the US Census Bureau's "Job-to-Job Flow Data Report," in 2022, an estimated 1.2 million construction workers left their jobs to work in other industries.

Other factors impacting the trades' employment:

- ❑ Over the past decade, the number of construction workers ages 25-54 fell 8 percent.
- ❑ The average retirement age of construction workers is 52, with one in five over 55.
- ❑ Eighty-nine percent of national and independent contractors report difficulties finding trained employees.

OUR CELTICS STORY

From Flooring to Flourishing

Initially, we set out to open one innovation center in Maine out of our pockets. We have also secured a facility in New Bedford, Massachusetts, and space at the New Balance facility in Lawrence. We are now in discussions to add other facilities in Western Massachusetts, New Hampshire and Rhode Island. One of our first successful, sustainable projects was a collaboration between Hancock Academy's Special Projects Director Ron Corl, United Technology Center, Sumner Memorial High School and the Boston Celtics to reuse the Celtics Training Facility's flooring at Sumner Memorial High School. Recently, Ron was featured as a guest on a New England-based podcast, Port Broadcast, where he discussed his participation in this project.

CALL TO ACTION

Imagine sustainability practices that reduce the estimated 600 tons of construction waste that ends up in US landfills each year. Developing viable training and educational programs that close the 500,000 skilled labor gap. And inspiring and supporting youth to enter the workforce and skilled workers to stay in the trades. We at Hancock Academy believe it takes a like-minded community to create this change. With your financial support, we can fill the much-needed gap in the number of skilled tradespeople in a sustainable and environmentally conscious way. By providing no-cost education and mentoring to youth and disadvantaged business owners, as well as ongoing career development and higher-paying job opportunities for established tradespeople, together we can transform the skilled labor workforce in local communities.

As a Hancock Academy investment partner, you can help shape the future of the trades workforce in New England while taking part in trying to solve environmental issues. Each contribution will be connected to the communities you care about and your philanthropic endeavors. All

contributions will specifically support underwriting startup costs, financing building purchases and upfitting the Innovation Centers. As a founding partner of Hancock Academy, your company would be included in our print and digital media, participate in speaker series, and even have naming opportunities. Overall, by providing financial support to the trades industry, you are essentially investing in the sector's growth, sustainability, and positive impact, leading to more vibrant economies, stronger communities, and greener places.



CONTACT US

RANDY SCOTT, SENIOR VICE

RESIDENT

(603)401-3092

RSCOTT@SELECTDEMOSERVICES.COM



Select
Demo SERVICES LLC.

Select
PAINT
AND FINISHES

K-TOWN
DISPOSAL

Select
TILE
MARBLE & FLOORING

Select
SPRAY SYSTEMS LLC.

QUESTIONS FOR THE PANEL



NEXT STEPS

- Virtual meeting in September to set the stage for an in-person workshop this fall.
- Discuss step by step process with municipalities ready to take the next step.
- Include all who need to be at the table.
- Gather feedback by sector:
 - What is needed to move the needle?
 - Key language for policies/ordinances
 - Resource bank



Stay tuned for our fall meeting dates.



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

Kathi Mirza

Branch Chief, Municipal Waste Reduction Programs
Kathi.Mirza@mass.gov

Mike Elliott

Asbestos/C&D Program Coordinator
Michael.Elliott@mass.gov

Janice Pare

Environmental Analyst, Municipal Waste Reduction Programs
Janice.Pare@mass.gov

Leah Kelleher

Environmental Analyst, Municipal Waste Reduction Programs
Leah.Kelleher@mass.gov

Reduce and Reuse Working Group

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