

RETHINK.

RECLAIM.
REUSE.

Birch Group
Rethink · Reclaim · Reuse





Message from the Executive Director



Through our Birch Group Green Mission, we reimagine what it means to deconstruct by providing a cost-effective, environmentally friendly alternative to demolition which creates new jobs and decreases waste — keeps Minnesota a beautiful place to live.

A majority of the proceeds received go into funding our workforce development programs which aims to train individuals to be more productive and prosperous in the workplace, which ultimately benefits their communities.

Petrina M. Rhines

FOUNDER & EXECUTIVE DIRECTOR

A handwritten signature in black ink, appearing to read 'Petrina Rhines'.



OUR REUSE STORE

Located in the heart of Minneapolis, **Scrapbox Salvage Co.** is a reuse buildings material store. We partner with the Birch Group, a 501 (c)(3) non-profit development and deconstruction salvage company to reclaim and harvest everything from lights, flooring, windows, doors and more.

MARCH
01 GRAND
OPENING!

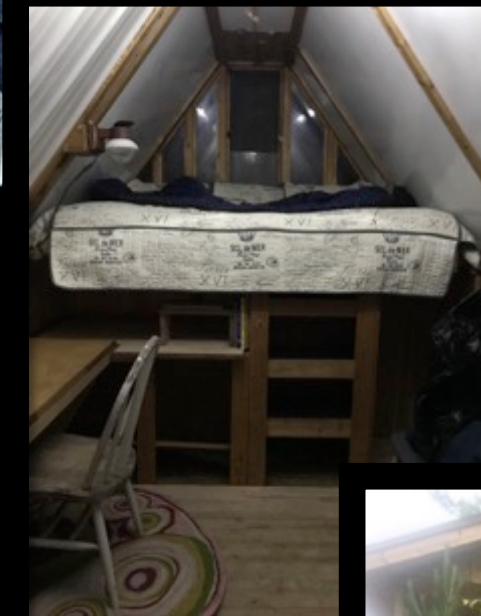


BEFORE



AFTER






**STEGER
CENTER**



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Introduction to Deconstruction



“Building **Green** Without Wasting A Thing”

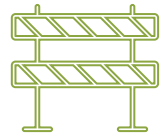


“The Zero Waste Place”



TABLE OF CONTENTS

TABLE OF CONTENTS



RETHINK

RECLAIM



REUSE



00

**WHAT IS
DECONSTRUCTION?**

01

**GOALS OF
DECONSTRUCTION
AND MATERIAL USE**

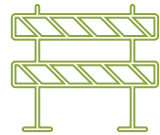
02

**TYPES OF
BUILDINGS/MATERIALS
APPROPRIATE FOR
DECONSTRUCTION**

03

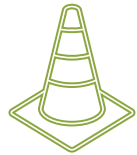
WHY DECONSTRUCT?

TABLE OF CONTENTS



RETHINK

RECLAIM



REUSE



04

STATISTICS

05

**3 TYPES OF
DECONSTRUCTION**

06

**DECONSTRUCTION
PROCESS**

07

IN CONCLUSION

QUESTIONS AND DISCUSSION



00

WHAT IS DECONSTRUCTION?

The background of the slide features a photograph of a brick wall with several arched openings. In the foreground, a stack of white doors is visible, including solid doors and a glass-paned door. A semi-transparent green banner is overlaid across the middle of the image, containing the title and introductory text.

00

WHAT IS DECONSTRUCTION?

Deconstruction is the **systematic dismantling** and removal of a structure or its parts to salvage and harvest the components, with the purpose of reusing and/or recycling these reclaimed materials and commodities for their maximum value

The background of the slide features a brick wall with several arched niches. In the foreground, a stack of white doors is leaning against the wall. The doors vary in style, including solid panel doors and a multi-paned glass door. The lighting is somewhat dim, creating a moody atmosphere.

00

WHAT IS DECONSTRUCTION?

In Layman terms ... Carefully and skillfully removing buildings and/or building materials to be harvested and reused for its original purpose.



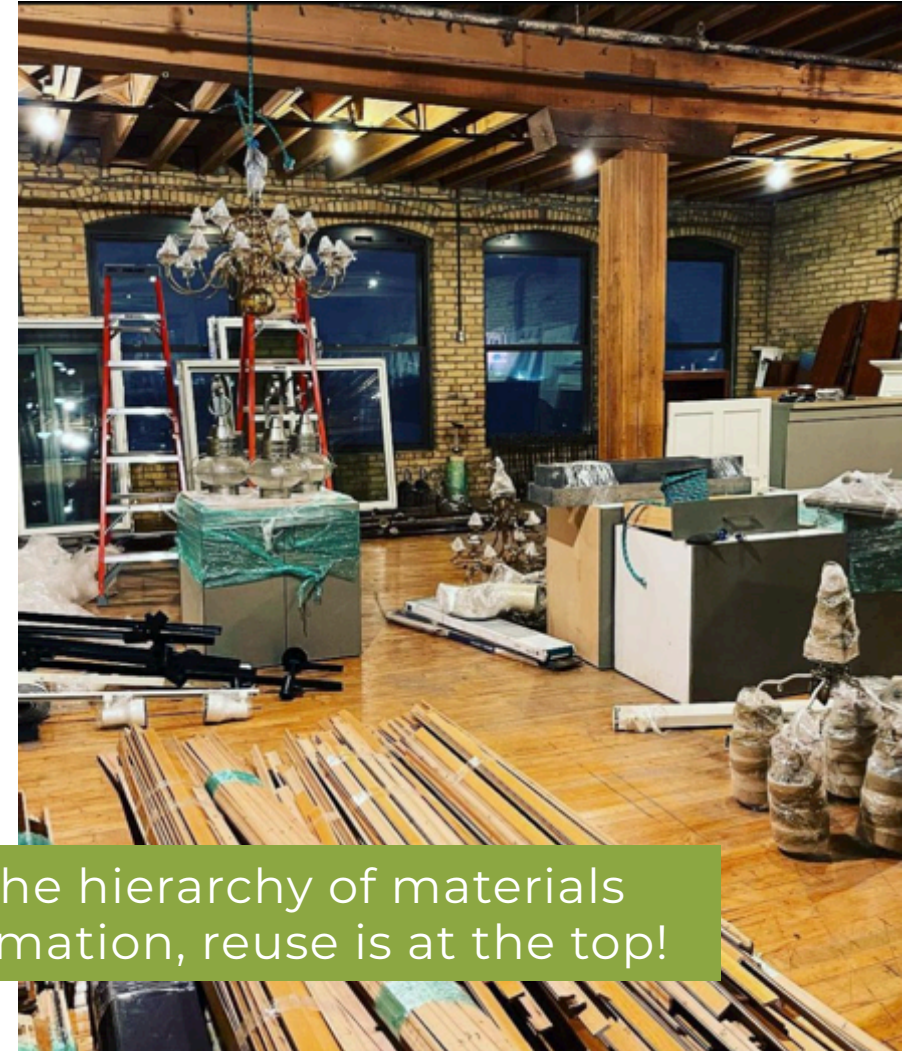
01

GOALS OF DECONSTRUCTION AND MATERIALS REUSE

01

GOALS OF DECONSTRUCTION

RECOVER MATERIALS THAT CAN BE USED FOR THEIR
ORIGINAL PURPOSE AND/OR RECYCLED FOR THEIR
MAXIMUM ECONOMIC VALUE



In the hierarchy of materials
reclamation, reuse is at the top!



02

TYPES OF BUILDINGS

APPROPRIATE FOR DECONSTRUCTION

TYPES OF BUILDINGS APPROPRIATE TO DECONSTRUCT

HOW TO EVALUATE BUILDINGS FOR DECONSTRUCTION

2 MAIN PRINCIPLES TO CONSIDER WHEN EVALUATING BUILDINGS ARE:

- ① Salvage potential
- ② Salvage Value



TYPES OF BUILDINGS APPROPRIATE TO DECONSTRUCT

HOW TO EVALUATE BUILDINGS FOR DECONSTRUCTION

① Salvage potential

- ✓ Likelihood that material can be harvested
- ✓ How quickly the material can be reclaimed for reuse
- ✓ Minimal damage or need for repair

High Salvage Potential

Windows, Floors, Doors, Cabinets, Casework, and Lighting

Low Salvage Potential

Brick, CMU, concrete walls and gypsum board

TYPES OF BUILDINGS APPROPRIATE TO DECONSTRUCT

HOW TO EVALUATE BUILDINGS FOR DECONSTRUCTION

EVALUATING BUILDINGS FOR DECONSTRUCTION

① Salvage Value

- ✓ Financial value in recovered material
- ✓ Not necessarily has to be resale value



If deconstruction is being carried out as OJT or on the job training, , then the value as a training example may be sufficient to justify deconstruction, Even if economic value does not.

TYPES OF BUILDINGS APPROPRIATE TO DECONSTRUCT

HOW TO EVALUATE BUILDINGS FOR DECONSTRUCTION

EVALUATING BUILDINGS FOR DECONSTRUCTION

- ① Salvage Potential and Salvage Value together to help evaluate and determine any potential deconstruction project being pursued



Sometimes you may have to walk away from a project.

TYPES OF MATERIALS APPROPRIATE DECONSTRUCT

WINDOWS

YES	NO
<input checked="" type="checkbox"/> Double pane vinyl, wood and aluminum	<input checked="" type="checkbox"/> Single pane, single light sashes without casing,
<input checked="" type="checkbox"/> Vintage wood frame divided light windows	<input checked="" type="checkbox"/> Most wood frame windows
<input checked="" type="checkbox"/> Fixed and picture windows	



Windows with crumbling glazing or excessive peeling paint

TYPES OF MATERIALS APPROPRIATE DECONSTRUCT

FLOORS

YES	NO
<input checked="" type="checkbox"/> Laminate/Pergo full pieces in good condition	<input checked="" type="checkbox"/> Vinyl with cracking, excessive tread wear or stains
<input checked="" type="checkbox"/> Hard and Softwood flooring that is reusable	<input checked="" type="checkbox"/> Laminate/Pergo with excessive tread wear
<input checked="" type="checkbox"/> Vinyl larger than 6'x6' pieces	<input checked="" type="checkbox"/> damaged tongue and groove



TYPES OF MATERIALS APPROPRIATE DECONSTRUCT

DOORS

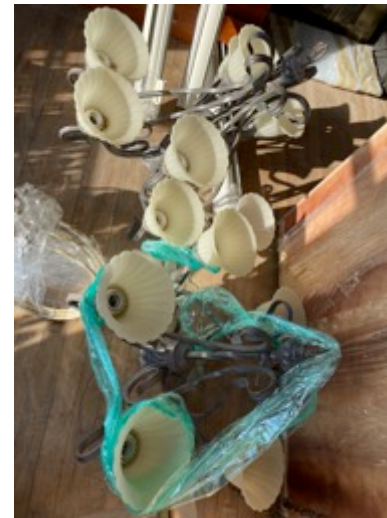
YES	NO
<ul style="list-style-type: none">✓ Panel doors, vintage styles and hollow core in good condition✓ Solid core commercial doors✓ Aluminum/steel screen/storm doors with the complete frame and hardware✓ Security doors	<ul style="list-style-type: none">✗ Most sliding glass doors✗ Garage doors✗ Old, bronze/gold framed, hard water stained shower doors✗ Doors that are warped, have excessively peeling paint, pet damage, holes, fogged glass, stains, broken glass or are in major need of repair



TYPES OF MATERIALS TO DECONSTRUCT

LIGHTING

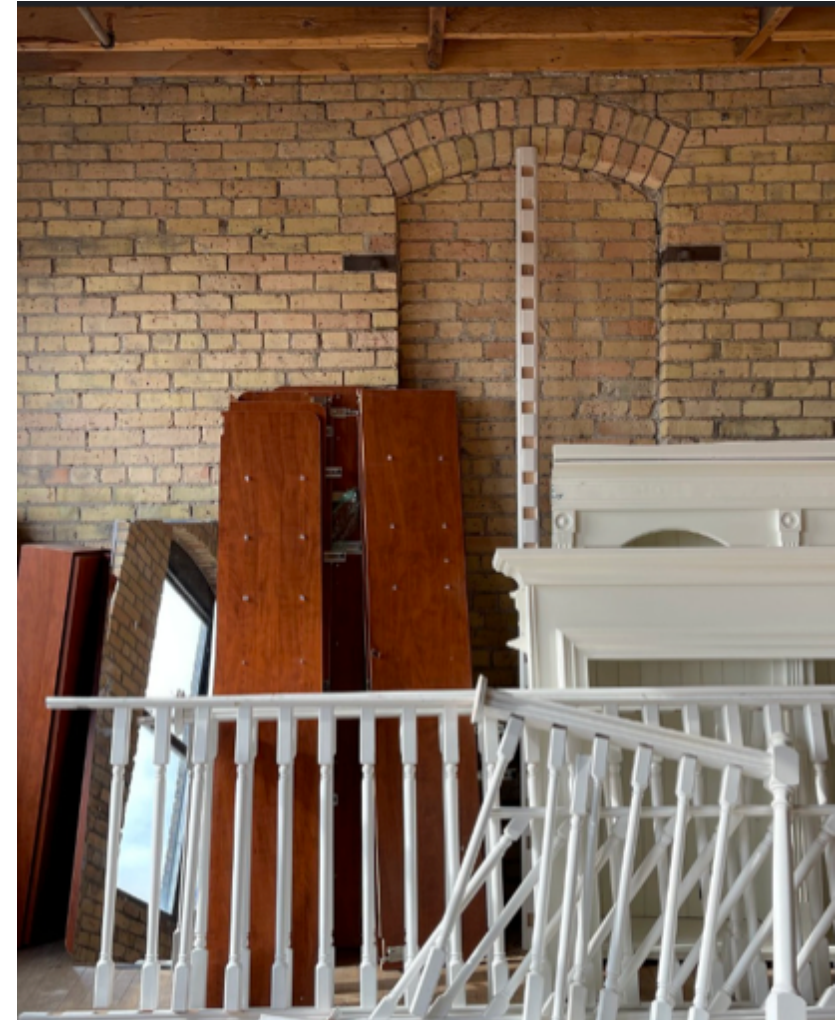
YES	NO
<ul style="list-style-type: none"> ✓ Clean and complete fixtures with all hardware ✓ Vintage, ornate and antique lighting ✓ Glass globes/lamp shades <p>Track, utility or motion lights Most light bulbs (excluding fluorescents and CFLs!) Bathroom fans Some lighting parts</p>	<ul style="list-style-type: none"> ✓ Single pane, single light sashes without casing, ✓ Windows with crumbling glazing or excessive peeling paint ✓ Most wood frame windows



TYPES OF MATERIALS TO DECONSTRUCT

OTHER SALVAGEABLE BUILDING MATERIALS

- ✓ Bathtubs
- ✓ Bricks and Pavers
- ✓ Cabinets
- ✓ Carpet
- ✓ Countertop/Granite/Corian
- ✓ Faucets
- ✓ Fencing
- ✓ Flooring/Vinyl/Wood/Laminate
- ✓ Gutters
- ✓ HVAC
- ✓ Hardware
- ✓ Lumber
- ✓ Mirrors and Glass
- ✓ Plumbing Parts
- ✓ Plywood/OSB
- ✓ Roofing
- ✓ Siding
- ✓ Sinks
- ✓ Tile
- ✓ Toilets
- ✓ Trim





03

WHY DECONSTRUCT?

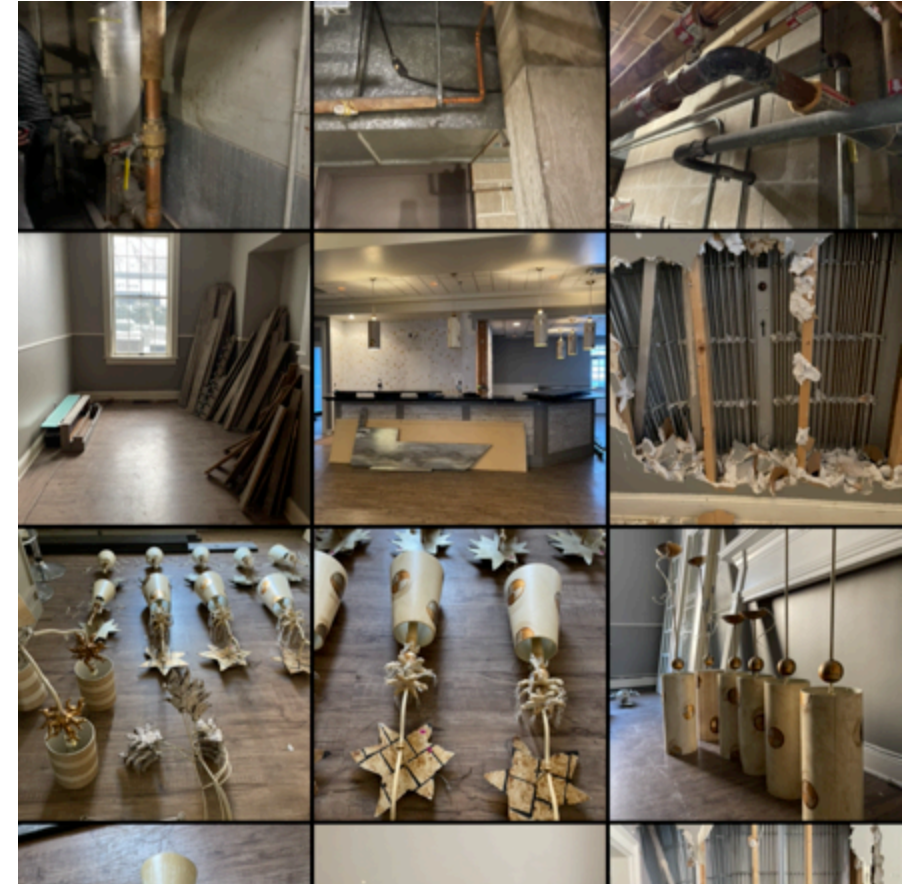
THE BENEFITS OF DECONSTRUCTION

WHY DECONSTRUCT?

THE BENEFITS OF DECONSTRUCTION

THE VALUE PROPOSITION FOR DECONSTRUCTION

- ① Economic Benefits
- ② Social Benefits
- ③ Environmental Benefits
- ④ Resource conservation benefits
- ⑤ Other Reasons



Because deconstruction is still not yet the mainstream method for removing buildings, practitioners need to make a strong case for why a potential client should choose deconstruction over demolition.

WHY DECONSTRUCT?

THE BENEFITS OF DECONSTRUCTION

THE VALUE PROPOSITION FOR DECONSTRUCTION

- ① Economic Benefits
 - For the building owner and/or contractor
 - Deconstructor
 - Reuse and recycling businesses



WHY DECONSTRUCT?

THE BENEFITS OF DECONSTRUCTION

THE VALUE PROPOSITION FOR DECONSTRUCTION

② Social Benefits

- Job skills training program/workforce development
- Preserving local building materials
- Affordable building materials resource




WHY DECONSTRUCT?

THE BENEFITS OF DECONSTRUCTION

THE VALUE PROPOSITION FOR DECONSTRUCTION

③ Environmental Benefits

- Less material in the waste stream
- Retaining embodied energy
- Avoiding production of new materials



About a quarter of all construction and demolition debris goes into unlined landfills around the state

SOURCE: FERGUS FALLS LANDFILL

WHY DECONSTRUCT?

THE BENEFITS OF DECONSTRUCTION

THE VALUE PROPOSITION FOR DECONSTRUCTION

- ③ Other reasons
 - Sensitive environmental area
 - Hard to access location



SOURCE: BENNER HOSPITAL DECONSTRUCTION



BUILDING DECONSTRUCTION EPA STATISTICS


04

- Continued use of virgin materials for construction consumes enormous amounts of materials and energy,
- Continued disposal of building materials uses landfill space and buries potential resources rather than extracting their value for productive reuse.

Both the upstream and downstream impacts of these practices increase the emissions of greenhouse gases

**BUILDING
RELATED
PROJECTS IN
THE U.S. ALONE
GENERATED AN
ESTIMATED**
600M
**TONS OF
CONSTRUCTION
& DEMOLITION
MATERIALS
EVERY YEAR**

**OUT OF THE
BUILDING
RELATED
PROJECTS IN
THE UNITED
STATES**
40%
**OF MATERIAL
WAS REUSED OR
SENT TO WASTE-
TO-ENERGY
FACILITIES**


WHILE
60%
**WAS SENT TO
C&D LANDFILLS**


05

3 TYPES OF DECONSTRUCTION

3 TYPES OF DECONSTRUCTION

FULL DECONSTRUCTION

- ✓ 100% of the building
- ✓ Disassembly is done by hand



100% of the building is deconstructed including loose assets, finishes, core, shell, frame, meps, and foundation which are all systematically dismantled

FULL DECONSTRUCTION



CASE STUDY: CHARITABLE CHAMPLIN CHARM

- ✓ Client required deconstruction of domicile before they sold the property to developer for demolition.



LOCATION: CHAMPLIN PARK

2,500 SQ FT

10 days / 4 Crew Members

FULL DECONSTRUCTION



BENEFITS

ECONOMIC: Tax write-off for owner for donating materials to non-profit.

SOCIAL: Provided OJT, and retained lumber and other materials to be reused

ENVIRONMENTAL: Diverted 98,000 lbs. from landfill



3 TYPES OF DECONSTRUCTION

SELECTIVE DECONSTRUCTION

There are two types of selective deconstruction:

Structural

- ✓ Disassembly of part of a building or attached structure which leaves part of the building standing

Non-structural

- ✓ Disassembly of targeted materials, finishes or systems



SELECTIVE DECONSTRUCTION



CASE STUDY: REVIVAL OF CRAFTSMAN HOME

- ✓ Client wanted to remove kitchen, hardwood floors, bathtubs and demo wall



LOCATION: ST LOUIS PARK

3,000 SQ FT

2 days / 3 Crew members

SELECTIVE DECONSTRUCTION

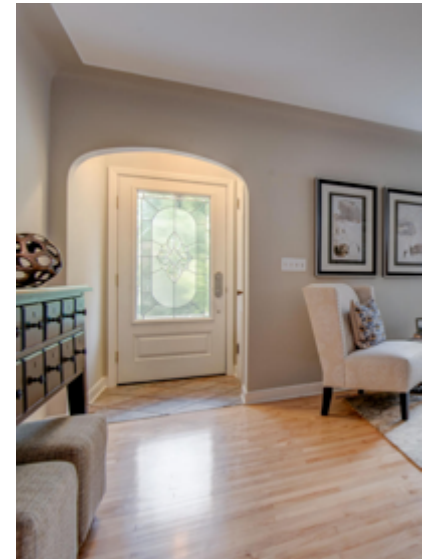


BENEFITS

ECONOMIC: Tax write-off for homeowner for donating materials to non-profit.

SOCIAL: Provided OJT, and reclaimed materials for local community to reuse.

ENVIRONMENTAL: Diverted 8,000 lbs. from landfill



3 TYPES OF DECONSTRUCTION

STRIP-OUT/SALVAGE WORK DECONSTRUCTION

- ✓ Involves harvesting a buildings most valuable and easily removable components
- ✓ Typically limited to finished materials



STRIP-OUT/SALVAGE WORK DECONSTRUCTION



CASE STUDY: 18TH CIRCA MANSION ON THE HILL

- ✓ Preservation of this historic mansion had become expensive and the residents decided to demolish and build a 4 unit condo.

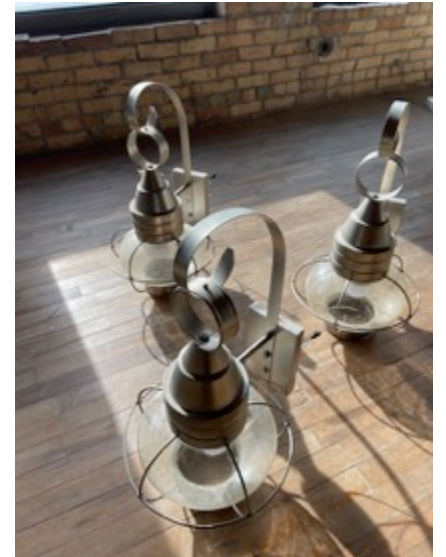


LOCATION: LOWRY HILL

13,000 SQ FT

1 DAY

STRIP-OUT/SALVAGE WORK DECONSTRUCTION



BENEFITS

ECONOMIC: Tax write-off for owner for donating materials to non-profit.

SOCIAL: Provided OJT, and retained lumber and other materials to be reused

ENVIRONMENTAL: Diverted 5,000 lbs. from landfill



06

THE DECONSTRUCTION PROCESS

THE BASIC STEPS

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THE DECONSTRUCTION PROCESS

BASIC STEPS OF DECONSTRUCTION

- ① Site Visit
- ② Create Budget/Bidding
- ③ Detailed Project Plan
- ④ Implementation
- ⑤ Close out

THE DECONSTRUCTION PROCESS

5 BASIC STEPS OF DECONSTRUCTION

① Site Visit

- ✓ meeting with owner or owners representative to determine project goals, scope, schedule, etc.
- ✓ assess reuse and recycling potential and value for materials
- ✓ identify appropriate deconstruction methods, sequence of operations, and interaction with other onsite activities



THE DECONSTRUCTION PROCESS

5 BASIC STEPS OF DECONSTRUCTION

② Budget/Bidding

- ✓ Determine SOW (Scope of Work)
- ✓ Manpower needed
- ✓ Equipment and tool requirements

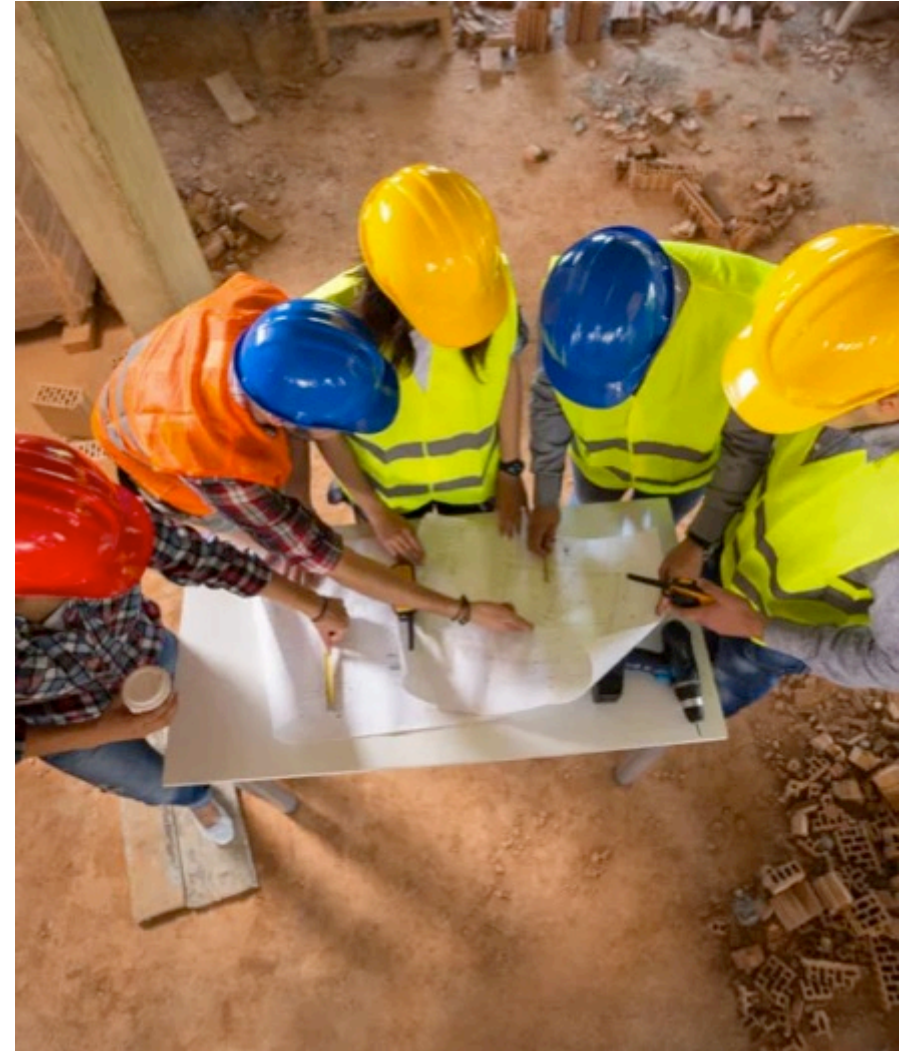


THE DECONSTRUCTION PROCESS

5 BASIC STEPS OF DECONSTRUCTION

③ Detailed Project Plan: how everyone will work together

- ✓ Permitting
- ✓ Safety Plan
- ✓ Work Plan
- ✓ Schedule
- ✓ Materials Management Plan
- ✓ Logistics Plan



THE DECONSTRUCTION PROCESS

5 BASIC STEPS OF DECONSTRUCTION

④ Implementation

- ✓ Secure tools and equipment
- ✓ Prepare the site
- ✓ Carry out project according to plan
- ✓ Materials management and disposition
- ✓ Issue identification and troubleshooting
- ✓ Tracking and recordkeeping



THE DECONSTRUCTION PROCESS

5 BASIC STEPS OF DECONSTRUCTION

⑤ Close-out

- ✓ Project completion and walkthrough with owner
- ✓ Create Punch List
- ✓ BG Green Mission Reporting
- ✓ Budget close out



07

IN CONCLUSION...

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DEMOLITION

vs.

DECONSTRUCTION



DEMOLITION

Typical mechanical demolition is dirty, wasteful, and poses potential health risks.

VS.

DECONSTRUCTION

A safer, more sustainable building removal and preparation of the site for redevelopment.

HEALTH & SAFETY

Mechanically crunching a building to pieces can create unnecessary waste which can disperse lead laden toxic dust 400 feet from the site



HEALTH & SAFETY

Deconstruction reduces material disturbances and ensures protection of local watersheds



WASTE

Demolition discards the entire building which fills landfills with valuable materials including old growth wood.



WASTE

Deconstruction minimizes material and energy waste and maximizes reuse and recycling.



COMMUNITIES

Demolition causes community concern surrounding the community health and environmental risk.



COMMUNITIES

Deconstruction supports community health, and creates more jobs than a typical demolition.



To further support the community, Certified sites provide effective communication throughout the project with a representative on site to directly address community questions and concerns.



DEMOLITION

- ✓ Focuses on speed: Get the structure down and off site as quickly as possible
- ✓ Economics is based on speed and bulk material handling
- ✓ Leaves behind materials that are suitable only for disposal or recycling



VS.



DECONSTRUCTION

- ✓ Can take longer than demolition
- ✓ Involves hand demolition, salvage and asset removal
- ✓ Maximizes the economic value in materials recovered
- ✓ Focuses on recovery of materials that can be reused





BIRCH GROUP

THANK YOU!

