AGENDA

- C&D WASTE / REUSE CENTER CONTEXT
- DECONSTRUCTION INCENTIVES / RESOURCES
- PERKINS+WILL CASE STUDY
- LIFECYCLE BUILDING CENTER INTRODUCTION
- LBC PROJECTS
- LBC IMPACT
170 MILLION TONS OF C&D WASTE IS GENERATED ACROSS U.S. EACH YEAR (3 MILLION TONS IN GEORGIA), 25% OF WHICH IS REUSABLE
BUILDING MATERIAL REUSE CENTERS ARE COMMON THROUGHOUT NORTHEAST / WEST COAST; SOUTHEAST IS LAGGING DUE TO LOW DISPOSAL FEES ($17-25/TON IN GA COMPARED TO $125-150/TON)

SOURCE: BUILDING MATERIALS REUSE ASSOCIATION; www.bmra.org
300 DAILY VISITORS; 7,000,000 POUNDS DIVERTED FROM LANDFILLS ANNUALLY (8 TONS PER DAY)
4,000,000 POUNDS DIVERTED FROM LANDFILLS IN 2013 ALONE

CEC EFFICIENCY RETROFITS HAVE COLLECTIVELY:
- SAVED NY STATE $180 MILLION IN ENERGY COSTS
- REDUCED ANNUAL ENERGY USE BY 675 BILLION BTUS
OVER 10,000,000 POUNDS DIVERTED & $2 MILLION IN COMMUNITY SAVINGS SINCE 2009
DECONSTRUCTION / MATERIAL REUSE POLICY INCENTIVES


  Provides early site access for deconstruction projects
  Demo permit issued independently from construction permit
  Minimum reuse = 20% building materials (excludes asphalt / brick / concrete)
  Requires Waste Diversion Plan & Waste Diversion Report


  Provides access to reduced disposal costs for non-diverted items

Boulder  [www.bouldercolorado.gov/files/PDS/green_points/attachment_c__decon_plan_const_waste_recycling_edits1_09.pdf](http://www.bouldercolorado.gov/files/PDS/green_points/attachment_c__decon_plan_const_waste_recycling_edits1_09.pdf)

  City offers free Deconstruction Assessment
    Material inventory
    List of deconstruction professionals
  Points awarded to projects exceeding 65% material diversion

DECONSTRUCTION / MATERIAL REUSE POLICY INCENTIVES

Construction & Demolition (C&D) Diversion Ordinance Guide
www.calrecycle.ca.gov/LGCentral/Library/CandDModel/Default.htm

Requirements for all ‘Covered Demolition’ projects (exceeding size threshold):

Waste Management Plan / WMP Compliance Official
Minimum 50% diversion (CA Green Building Standards Code), 75% preferred
Refundable deposit based upon project size
All C&D waste must be weighed
Optional fine structure for code violations
On-site sale of recovered materials permitted


Deconstruction consultation on all renovation / demo projects
Exceptions: Unsafe structures
Low quantity/quality of recoverable materials
Recovered material report required
Construction Waste Management Plan

www.calrecycle.ca.gov/ConDemo/Specs/SampleSpec.doc

Submittals include:

- List of reuse centers receiving material
- Description of material donation/sale process
- List of materials not to be diverted with explanation
- Total material reuse estimate by weight
- Time estimate for removal of reusable materials

Lump sum bonus for every 5% diverted above 75%

Allows for on-site sales auctions / material pickup

Quality Assurance:
- C&D Quality Manager
- Waste Management Meeting
- Orientation / Training
- Recovered material protection (including theft)

C&D Site Management Plan indicating:

- Material processing areas
- Material storage / disposal areas

Requires material cleaning
PROJECT SPECIFICATIONS

Building Deconstruction Specification

Submittals include:
- Deconstruction Plan (materials to be salvaged, removal methods & destination)
- Deconstruction Schedule / Sequencing
- Existing Conditions Survey (document material conditions prior to removal)
- Salvaged Material Inventory (document recovered materials)

Pre-Deconstruction Conference:
- Building Inspection / Structural Load Limitations (engineering survey)
- Verify availability of materials / personnel / equipment / facilities
- Protection of existing construction to remain (if applicable)
- Review methods of material removal & staging areas

During Deconstruction:
- Fire protection facilities remain throughout deconstruction
- Weather protection required for salvaged materials
- Temporary shoring / bracing to prevent uncontrolled movement / collapse
- Material removal techniques to optimize worker / material / building protection
DECONSTRUCTION TRAINING RESOURCES

National Training Programs

The ReUse Institute (Oakland, CA)  http://deconstructiontraining.org/
ReUse Consulting (Bellingham, WA)  www.reuseconsulting.com/

Deconstruction Training Manual  www.calrecycle.ca.gov/Publications/ConDemo/43301027.pdf
WARM Deconstruction Training Videos  www.youtube.com/user/willyindahizzy
Building a Deconstruction Company  www.ilsr.org/recycling/decon/BuildingACompany.pdf
**DECONSTRUCTION / MATERIAL REUSE BENEFITS**

**LEED v4: MATERIALS & RESOURCES**

<table>
<thead>
<tr>
<th>Required</th>
<th>MRp2 - Construction &amp; Demo Waste Mgmt.</th>
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<tbody>
<tr>
<td></td>
<td>- Report waste streams</td>
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<tr>
<td>4 points</td>
<td>MRc1 - Building Life Cycle Impact</td>
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<td>- Option 3: Reuse 25-75% surface area</td>
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<tr>
<td>1 points</td>
<td>MRc3 - Building Product Disclosure &amp; Sourcing</td>
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<td>- Option 2: 25% of cost of installed products</td>
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<td>2 points</td>
<td>MRc5 - Construction &amp; Demo Waste Mgmt.</td>
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<tr>
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<td>- 1 pt: 50% min. diversion</td>
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<tr>
<td></td>
<td>- 2 pts: 75% min. diversion</td>
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</tbody>
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Potential tax benefits
(for owner if materials donated)

Community benefit
(non profits need low-cost materials)
PERKINS+WILL CASE STUDY
CAN WE DONATE THIS TO NONPROFITS?
Exit Lights
Available: 32 +/-

3.1.3
Work Counter
Donated: Georgia Organics

Hinges
Brass
4-1/2"
Quantity: 600

2x2 Light Fixtures
Fluorescent
Parabolic
Available: 124 +/-

Carpet Tile 1
Quantity: 8,700 sf
75% Recuce 6,500 sf
25% Spots
7 Pallets

0.0
Lavatory/Faucet
@ Handicap Restrooms 5th & 4th Floors
(2) Total

1.0
Large Bowl Pendant
@ 5th Floor

5.1
Base and Wall Cabinets
8'-2-1/2" Long

2.7.2
Open Wall Cabinets
10' Long
Available

Mahogany Doors
3'-0" x 6'-0" x 1-3/4"
Solid Core
Mahogany Veneer
Machine Mitered
Quantity: 150

Carpet 2
Broadloom
Quantity: 1,400 sf
TOTAL: 3,045 LBS. / $23,689

CABINETS / LIGHTING / CARPET

GEORGIA ORGANICS
FILING CABINETS / MAILROOM CABINET

TOTAL: 1,860 LBS. / $4,252

ATLANTA BALLET
CAMP TWIN LAKES

TOTAL: 13,630 LBS. / $75,090

CASEWORK / PLUMBING FIXTURES / RUGS

CAMP TWIN LAKES
TOTAL: 15,626 LBS. / $133,944  
CARPET TILE (2400 SY, AS-NEW: $72,000)
TOTAL: 15,626 LBS. / $133,944

CASEWORK (5,500 LBS., AS NEW: $16,000)

HABITAT FOR HUMANITY RESTORE
MATERIAL PROCEEDS FUNDED NEW HABITAT HOUSE

TOTAL: 15,626 LBS. / $133,944

HABITAT FOR HUMANITY RESTORE
TOTAL: 3,261 LBS. / $15,983

CASEWORK / SOUND ABSORPTION PANELS

ATLANTA CHARTER MIDDLE SCHOOL
TOTAL: 1,984 LBS. / $8,200

WALL / BASE CABINETS

HORIZON THEATRE
COUNTERTOPS

TOTAL: 1,984 LBS. / $8,200

HORIZON THEATRE
TOTAL: 1,984 LBS. / $8,200
TOTAL: 11,466 LBS. / $64,975
TOTAL: 4,508 LBS. / $24,000
WOOD REUSE

TOTAL: 2,200 LBS.

SALVAGED CHERRY WOOD TRIM

WOOD REUSE
TOTAL: 2,200 LBS.

WOOD REUSE
TOTAL TIME (DEMO TO LAST DONATION) = 4 MONTHS

MATERIAL STAGING
TOTAL REPURPOSED MATERIAL BY WEIGHT

125,521 LBS.

Total amount to nonprofits: 73,400 lbs.
Total donation to nonprofits: $384,696
The mission of the Lifecycle Building Center is to make the life cycle use of the built environment increasingly efficient and sustainable.

This mission is enacted in three ways:

- Through the operation of a retail building material reuse center as a workable and self-sufficient alternative to material disposal.

- By using proceeds from material sales to fund grassroots community outreach programs that enhance resource efficiency in the built environment.

- By empowering the community through improved access to the educational resources needed to effectively raise market demand for green building goods and services.
LIFECYCLE USE OF BUILT ENVIRONMENT (SIMPLIFIED)

Design & Build

Use & Adapt

Demolish & Remove
Proposed **LBC community outreach programs**

- Free material to nonprofits and schools (*Online Material Database*)
- Home Performance Loan Program
- Access to green building educational resources / training
- Connect consumers with green building products and services
- Urban Forestry Collaborative to benefit CoA Tree Fund
- Community Shop Space
- Solar Retrofit Funding
- Collaborative Construction Training (trade skills)
- Water Saving Initiatives
Reclaimed building materials – supply/demand sources

General Public
- Homeowners / do-it-yourselfers
- Landlords / Facility Managers
- Businesses
- Municipalities

Design/Build Community
- Architects
- Builders
- Remodelers
- General Contractors
- Other Trades

Nonprofit Community (free)
- Civic Groups
- Church Groups
- Arts Community
- Schools
- Home Repair programs
Direct **job creation** through LBC Operations

- Mature reuse centers provide between **20-30 direct jobs** in the communities they serve
- Large scale **partnerships** with waste haulers, demolition contractors, landfill owners and related professionals would **provide an additional 1-3 full time and 1-3 part-time positions** as well as peripheral jobs within partner organizations

**Additional job creation opportunities**

- Deconstruction of a house creates **three to seven jobs for every one job created during residential demolition** (Source: The Rebuilding Center in Portland, Oregon)
- For-profit **deconstruction ventures** will become more prevalent as consumer demand for reclaimed material increases and demolition businesses subsidize labor costs by donating lower value materials captured while harvesting higher value materials which sell readily
- Non-violent **community service placements** within the reuse operation will gain skills such as customer service, time management, problem solving, safety, teamwork, material handling, organizational and other relevant skills/references needed for future job hunting
- Community Shop Space will provide for the development of **rudimentary woodworking skills** including shop safety, design concepts, maintenance and management.
- Outreach Programs encouraging do-it-yourself **home maintenance / performance improvements** will expose participants to rudimentary construction skills and building science concepts that could assist with future employment
TRIPLE BOTTOM LINE APPROACH

- CONSUMERS SAVE 50-75% ON BUILDING MATERIALS
- AVOID RESOURCE DEPLETION
- REDUCE LANDFILL EMISSIONS / AIR POLLUTANTS
- IMPROVED HOME PERFORMANCE AVOIDS ENERGY CONSUMPTION

- DECONSTRUCTION CREATES MORE JOBS THAN DEMOLITION

- TAX WRITE-OFFS TO MATERIAL DONORS
- FREE MATERIALS TO NONPROFITS
- JOB SKILLS GAINED BY VOLUNTEERS & TRAINEES
- REUSE FACILITY DRAWS RESOURCES TO LOW-INCOME COMMUNITY

- PROFIT REINVESTED IN HOME PERFORMANCE / ENERGY SAVINGS

TRIPLE BOTTOM LINE APPROACH
Taking it FULL CIRCLE: the LIFECYCLE of an LBC PROJECT
During **first 2 years** of LBC Operations:

- Donated over $500,000 of salvaged materials to numerous nonprofits and schools, including Atlanta Community Food Bank, MedShare, Habitat for Humanity, MODA, WonderRoot, Sustainable Atlanta, Truly Living Well Urban Farm, and Perkerson Elementary

- Over **400,000 pounds of material diverted** from landfills

**VOLUME OF MATERIAL DIVERTED FROM LANDFILLS**

**A MOUNTAIN OF MATERIAL!**

*DURING THE FIRST 21 MONTHS OF OPERATIONS, THE LBC DIVERTED OVER 28,929 CUBIC FEET (375,000 lbs) OF MATERIAL FROM LANDFILLS ENOUGH TO FILL 54 DUMPTRUCKS*

approx weight conversion based on 350 lbs = 1 cubic yard
source: www.wastediversion.org
During **first 2 years** of LBC Operations:

- Over **$130K in material sales** ($85K in 2013 alone)
- Completed **55 deconstruction projects** and provided over **75 waste audits** to organizations and homeowners within the Metro Atlanta region
- Recruited a corps of **over 600 volunteers**
- Hired **2 full-time staff members, 2 part-time staff members, and 3 interns**
- Provided reclaimed materials to several renovation and construction projects, including the **Nature Conservancy, North Decatur Presbyterian** and **Pallookaville Fine Foods**
- Diverted reusable materials from projects with **Emory University, Georgia Power, Fort McPherson, Georgia Tech, Woodward Academy, IHG, Tyler Perry Studios, City of Decatur, and several residential demolition projects**
- Gathered over **900 Facebook followers** and a **newsletter readership of 1,500 people**
LIFECYCLE BUILDING CENTER
OF GREATER ATLANTA

LBC WAREHOUSE
1116 MURPHY AVE SW
ATLANTA, GA 30310
Parking & Entrance @ REAR

OPEN
TUESDAY 10am-6pm
FRIDAY 10am-6pm
SATURDAY 10am-4pm

Off I-75/85:
- EXIT 244: University Ave
- LEFT on Metropolitan Ave
- RIGHT on Dill Ave
- RIGHT on Murphy Ave

Off I-20:
- EXIT 55B: Lee St
- LEFT on R.D.A. Blvd
- RIGHT on Murphy Ave

MAP DIRECTIONS:
1. Exit I-75/85 at University Ave
2. Take 2nd left on Metropolitan Ave
3. Turn right onto Dill Ave
4. Take 3rd right on Murphy Ave

ATLANTA UNIVERSITY CENTER
RALPH DAVID ABERNATHY BLVD
LBC WAREHOUSE
1116 MURPHY AVE
SYLVAN RD
UNIVERSITY AVE
DILL AVE
SOUTH END
ATLANTA BELTLINE
CENTENNIAL OLYMPIC PARK
FIVE POINTS
FORT McPHERSON
MIDTOWN
OAKLAND CITY
WEST END
N

ATLANTA

75/85
20
85
75

Learn more at www.lifecyclebuildingcenter.org

Adam Deck:  
adam@lifecyclebuildingcenter.org  404.997.3873

Shannon Goodman:  
shannon@lifecyclebuildingcenter.org  678.592.0417