Deconstruction
and
Building Material Reuse

Austin Sustainable Building Materials Forum
June 30, 2017
Why Salvage Building Materials?
Implements the Environment
Saves Embodied Energy
Provides Green Jobs Training
Improves the Standard of Living
Why Buy New
How Much Can Be Diverted?

• Average house is 2,000 sq. ft. & weighs 80 tons*

• 250,000 single family residences are demolished each year*

• That represents 20,000,000 tons

• Between concrete recycling and materials reuse we can divert from our landfills about 90 to 95%

• Only 5 to 10% (5 to 8 tons) need to be landfilled

*USEPA statistics
What Materials Can Be Salvaged?

- Appliances
- Bricks
- Cabinets
- Doors
- Flooring
- Hardware
- Heating & Cooling
- Lighting fixtures
- Lumber
- Plumbing fixtures
- Roof tiles
- Sinks
- Trim
- Windows
- Vanities
Appliances
Bricks and Pavers
Cabinets
Doors
Flooring
Hardware
Heating and Cooling
Lighting

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Bulk Lumber
Self-Service Lumber Rack
Roof Tile
Windows
Vanities
Summary of Environmental & Economic Benefits

• Reusing
  – In new project
  – Available to the community
• Providing training & jobs
• Retaining embodied energy
• Saving landfill space
• Knowing that you are doing the right thing
Benefits to Owner
The Benefits to a Private Owner (residential, commercial/industrial, developer)

• Eligible for tax-deductible donations

• Reduces overall project costs
  – Through donation and reuse elsewhere
  – Reuse on the existing project

• Reduces disposal costs

• Improves the local standard of living

• Extends the life of local landfills
Cost-Benefit Analysis

- A 2000 square foot home
- 3 Bedrooms & 2 ½ baths
- Raised foundation
- Composite (asphalt) shingles
- Single paned wood windows with divided lights
- Wood siding
- Carpeting & 5/8” hardwood flooring
- 12 x 20 wood deck
- The following does not include removal of concrete or asphalt
Full Deconstruction
# Salvaging the built environment

<table>
<thead>
<tr>
<th></th>
<th>Deconstruction</th>
<th>Demolition</th>
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</thead>
<tbody>
<tr>
<td>Lowering of house</td>
<td>$26,000</td>
<td>$ 7,000</td>
</tr>
<tr>
<td>Disposal</td>
<td>4,000</td>
<td>4,000</td>
</tr>
<tr>
<td>Appraisal cost</td>
<td>2,500</td>
<td>0</td>
</tr>
<tr>
<td>Total costs</td>
<td>32,500</td>
<td>11,000</td>
</tr>
</tbody>
</table>

| Donation value      | 90,000         | 0          |
| Cash Value (after tax value of donation at 35%) | 31,500         | 0          |
| Total cost (from above) | 32,500         | 10,100     |
| After Tax Benefit (Cost) | $( 1,000)      | $(11,100)  |

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### Full Deconstruction Donation Values

<table>
<thead>
<tr>
<th>City</th>
<th>Sq. Ft.</th>
<th>Donation Value</th>
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</thead>
<tbody>
<tr>
<td>San Diego (remodel)</td>
<td>2,100</td>
<td>$57,000</td>
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<tr>
<td>Los Angeles</td>
<td>2,800</td>
<td>$97,321</td>
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<tr>
<td>Oakland</td>
<td>1,650</td>
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<td>Kansas City</td>
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<tr>
<td>Chicago</td>
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<td>$102,900</td>
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<td>Dallas</td>
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<td>$158,000</td>
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<tr>
<td>Sq Ft</td>
<td>Demolition</td>
<td>Deconstruction</td>
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<tr>
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<tr>
<td>1349</td>
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<td>1614</td>
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<tr>
<td>989</td>
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<tr>
<td>1272</td>
<td>$ 9,800</td>
<td>$17,400</td>
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Full Remodel & Soft-Strip

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# Full Remodel & Soft-Strip Donation Values

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<tr>
<th>City</th>
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<th>Donation Value</th>
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</thead>
<tbody>
<tr>
<td>San Diego</td>
<td>2,100</td>
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<tr>
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<td>Durham</td>
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<td>Houston</td>
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</table>
Small Soft-Strip Donation Values

• Standard Kitchen
  – 10 cabinets
  – Refrigerator, Oven, cooktop, microwave & dishwasher
  – Light fixture
  – 2 interior doors

• Costs of demolishing and disposal _______?

• Cost to deconstruct and salvage
  – 2 to 3 workers and a box truck for 1 day & no disposal
  – _________?

• Up to $4,999 tax deductible donation
90 % Reuse
For More Reuse Examples

For 9 years of reuse projects see

http://thereusepeople.org/reusecontest

A National Reuse Contests sponsored by
The ReUse People.
Thank You