

Deconstruction and Building Materials Salvage

Kathy Robinson, Austin Area Manager
The ReUse People of America



TRP
Salvaging the built environment™

Our Mission

The ReUse People of America reduces the solid waste stream and changes the way the built environment is renewed by salvaging building materials and distributing them for reuse.



Why Salvage Building Materials?



TRP
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Improves the Environment



Provides Green Jobs Training



TRP
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Improves the Standard of Living



Preserves Embodied Energy

Embodied energy = total amount of energy
used in extracting, transporting and
manufacturing raw materials to produce the
building materials



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



What Materials Can Be Salvaged?

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



Summary of Environmental & Economic Benefits

- Saving landfill space
- Retaining embodied energy
- Providing green jobs and green job training
- Improving the standard of living
- 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
- Reduces disposal costs
- Improves the local standard of living
- Extends the life of local landfills
- Knowing you have done the right thing



Actual Donation Values

City	Sq. Ft.	Donation Value
San Diego (remodel)	2,100	\$ 57,000
Los Angeles	2,800	\$ 97,321
Oakland	1,650	\$ 63,690
Seattle	1,400	\$ 41,000
Boulder	5,800	\$232,000
Kansas City	3,000	\$121,300
Chicago	2,100	\$102,900
Dallas	2,810	\$158,000



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



Deconstruction

Demolition

Lowering of house	\$21,738	\$ 6,000
Disposal	4,100	4,100
Appraisal cost	<u>2,500</u>	<u>0</u>
Total costs	28,338 =====	10,100 =====
Donation value	84,000	0
Cash Value (after tax value of donation at 35%)	29,400	0
Total cost (from above)	<u>28,338</u>	<u>10,100</u>
After Tax Benefit (Cost)	\$ 1,062 =====	\$(10,100) =====



Types of Projects



Residential Deconstruction & Salvage



Commercial

The Clock Tower at North Star



Clock Tower Details

- Largest resort development in the U.S. in 2004
- 25,000 s.f. to deconstruct in 5 weeks
- 4 crews of 5 workers, 2 project supervisors
- Equipment
 - 1-40 ton crane
 - 2-skidsteers
 - 1 Wood Miser
 - 1 roll-off truck
 - two semi-trailers
- 87% salvage
- LEED Silver project



How to Incentivize Deconstruction?

Or how to discourage demolition....



Approaches Adopted by Other Cities

- Boulder, CO
- Seattle, WA
- Cook County, IL.
- Los Altos Hills, CA
- Park City, UT



Boulder

- Requires a Deconstruction Plan and Construction Waste Recycling Form with the Demolition Permit or Green Points/building permit applications.
- If applicant is going to demolish more than 50% of exterior walls, at least 65% of material by weight from the existing structure, including concrete and asphalt, must be diverted from landfill.



Seattle

- Requires a Deconstruction and Salvage Assessment (DSA) for all projects greater than 750 square feet involving demolition
- The DSA identifies which of the potential materials listed on the waste diversion plan might be salvageable. The DSA must be submitted at application intake
- If a whole building is being deconstructed or demolished the DSA must be completed by a salvage verifier



Cook County

- Requires demolition debris diversion (DDD) plan at beginning of demolition project as a condition of receiving a demolition or renovation permit.
- Requires at least 70% of all debris (excluding sheds and garages) generated in the demolition, dismantling or renovation of single-family, commercial and industrial structures be diverted from the waste stream.
- Mandates reuse of at least 5% of the materials in residential structures of 4 units or less.



Cook County (cont'd.)

- Contractor must issue a report using the Green Halo system to show where the materials went either for recycling or reuse (verified by the County)



Los Altos Hills

- Waives the demolition permitting fee for projects when a deconstruction contract is attached to the permit application
- Demolition permit applicants who agree to deconstruct rather than demolish will have their building plans for new construction go to the top of the queue for priority review instead of in the order received.



Park City (Draft)

- Applicants for C&D permits involving full or partial demolition shall deconstruct, to the maximum extent feasible, and make the reclaimed materials available for salvage.
- No structural demolition will be allowed for 10 working days after the issuance of a demolition permit to provide enough time for material salvage.



Park City (cont'd.)

- Demolition permit applicants must submit a refundable deposit with the CWMP unless they choose deconstruction. The deposit requirement is entirely waived provided they have contracted with a certified deconstruction facilitator and copy of contract is attached to the CWMP.
- The city is also “testing” a fast-tracking arrangement where owners who choose to deconstruct their existing building will have their new construction plans moved to the head of the queue for immediate review instead of in the order received.



Recommendations

Better to reward deconstruction than penalize demolition (initially):

- Fast track building plan review for those who agree to deconstruct existing structure
- Expedite “demolition” permit for deconstruction
- Reduce or waive fee for deconstruction permit



Recommendations

- Require permit applicants to obtain a deconstruction assessment and/or cost estimate
- Increase fee for permit if demolition



Thank You

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