Removal of Abandoned Properties

Deconstruction vs. Demolition: Process, Cost and Time

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Overview

- 245,000 residential structures and 44,000 commercial structures are demolished each year in the US
- US-EPA estimates that 136 million tons of Construction & Demolition (C&D) waste is generated annually and over 90% is due to renovation and demolition
- Construction-related waste constitutes one- fourth of landfill waste in the US

*References: Bradely. et al., 2003, US EPA, PPRE (*http://www.p2rx.org/*)*

DEMOLITION vs. DECONSTRUCTION

- Knocking down of a building and hauling materials to landfills or to be recycled – generally equipment intensive and quick

- Deconstruction is a process of selective /careful building disassembly in order to recover the maximum amount of materials for re-use – generally labor intensive and takes much longer

Cost Comparison: 1,476 SF House

Cost Element	Average Demolition Costs	Average Deconstruction Costs
Size (SF)	**1476**	**1476**
Labor/Equipment ($/SF)	1.74	3.64
Testing for Asbestos & Lead ($/SF)	0.97	0.97
Disposal ($/SF)	2.17	0.97
Other Costs: permit, etc. ($/SF)	0.48	0.89
Gross Cost ($/SF)	**5.36**	**6.47**
Salvage ($/SF)	0.00	3.28
Net Cost ($/SF)	5.36	3.19
Net Cost ($/SF) 50% Salvage	**5.36**	**4.83**

(Guy & McLendon 2000; Dantata *et al.* 2004)

Research Questions

- Obstacles to Deconstruction despite equal or lower costs and environmental benefits
- Time required for deconstruction vs. demolition
- Training and skill of workers
- Design for Deconstruction (DFD) - Design, material selection, and construction in a way so the buildings are conducive to Deconstruction
- Supply Chain of deconstructed material including facilities and transportation
- Others: Regulations, Incentives, etc.

Thank You!