



Deconstruction Works: A Study of Programs in Action

Case Study #4: Joint Venture

Published by the Materials for the Future Foundation

September 2001

What is Deconstruction?

Deconstruction is the process of carefully dismantling a building in order to salvage components for reuse and recycling. This labor intensive, low-tech, and environmentally sound process has emerged as an alternative to traditional demolition methods. Demolition places high priority on removing structures as quickly and cheaply as possible, and in the process, minimizes employment and maximizes waste.

Deconstruction has many benefits, including: maximizing the recovery of materials, conserving finite old growth forest resources, and providing many employment and job training opportunities. By coupling deconstruction activities with traditional demolition methods, communities can create local economic activities around remanufacturing or reprocessing salvaged materials while diverting demolition debris bound for landfills and preserving resources through reuse.

San Francisco Community Recyclers and Beyond Waste, Inc. Joint Venture

Project Goals

San Francisco Community Recyclers (SFCR) is a San Francisco-based 501(c)3 nonprofit organization dedicated to providing recycling services and resource conservation education to city residents. The organization has 19 years of experience in recycling operations and materials marketing. SFCR operates Building ReSources, a used building materials business, and also manages several drop-off recycling centers throughout San Francisco.

SFCR formed a joint venture with Beyond Waste, Inc. (BWI), a Sonoma County-based for-profit venture with four years experience in deconstruction. BWI operates a warehouse and sells salvaged building materials. BWI also makes flooring, wainscoting, baseboard and tables from some of its reclaimed lumber. This organization is active in providing qualified individuals with the skills necessary to work in the reclaimed materials industry. BWI also helps communities plan for and implement deconstruction.

The purpose of the SFCR/BWI joint venture was to provide Building ReSources with a more consistent stream of higher-grade salvaged building materials, and to allow BWI to benefit from SFCR's long-standing presence as a recycling organization in San Francisco.

The venture partners hoped to transform traditional "smash and dash" demolition methods into practices that support community development with environmental, economic and social benefits, including:

- Reducing pollution, greenhouse gas emissions, and the need for landfilling and incineration of demolition debris.
- Conserving energy and natural resources.
- Creating job training and employment opportunities, including self-employment and small business development.
- Providing materials to used building materials stores and value-added manufacturing enterprises.
- Retaining the historical significance of buildings.

The Materials for the Future Foundation (MFF)/US Environmental Protection Agency (US EPA) Deconstruction Grant Program provided the SFCR/BWI joint venture with a \$10,000 development grant to expand of the capacity of BWI from one part-time crew to three full-time crews of four people each over two years. BWI planned to deconstruct eight to twelve buildings in the first year, reusing approximately 150,000 board

Grant funds were used as follows:

Tools & supplies	\$2,289.18
Equipment rental	\$6,179.82
Safety equipment and materials	\$1,531.00
Total	\$10,000.00

feet of lumber that would otherwise have been chipped for hog fuel or landfilled. In addition, by the end of the second year, BWI expected to create eight new deconstruction jobs.

Employment/Training

The crew hired at the outset of the joint venture consisted of two former BWI employees and three new hires. The new-hires, who were low-income and eligible for assistance under the Temporary Assistance for Needy Families (TANF) Program, were retained for most of the year. Three more positions were added for a short period. The SFCR/BWI joint venture also partnered with a local homeless support service organization for the Mather Air Base project. Deconstruction lasted approximately a month, during which time 30 homeless individuals were trained in basic deconstruction and safety and given one week of paid on-the-job training.

Waste Diversion

This project completely deconstructed 22 buildings and partially dismantled one more, diverting a total of 177,000 board feet of wood. Deconstruction began on June 7, 1999, with a contract in Newark, California. The job took one week and yielded 10,000 board feet of redwood siding. The rest of June and all of July were spent on a job in Chester, California, deconstructing a portion of the Collins Pine Lumber Mill. The project presented serious challenges to the joint venture due to the building type and the distance from administrative offices and yards to the job site. SFCR and BWI spent almost \$46,000 on rental equipment and labor costs. The 20,000-30,000 board feet salvaged from the job went directly to Jefferson Millworks (SFCR & BWI's employer for the job). In August, 1999 the crew worked on a residential house in Bodega. Five thousand board feet of wood and flooring were salvaged.

In early September BWI secured a contract at Mather Air Base in Sacramento. The Mather project aligned the joint venture with Kaufmann and Broad Builders, the California Integrated Waste Management Board, and Swords to Plowshares of Sacramento County (a homeless support service organization). The Mather project lasted through most of October, 1999. Thirty thousand board feet of lumber were salvaged from the project. Additional projects are detailed in the table.

1999 Employment & Diversion Results			
PROJECT LOCATION	DATE	CREW SIZE	BOARD FEET RECOVERED
Geyserville	March	5	1,000
Olema	March	5	1,000
St. Helena	April	8	10,000
Healdsburg	May	10	10,000
Sonoma Mountain	May	10	10,000
Newark	June	N/A	10,000
Anguin	June	10	5,000
Richmond	June	5	N/A
Chester	June/July	N/A	25,000
Santa Rosa	July	5	N/A
Emeryville	July	N/A	N/A
San Francisco	July	5	N/A
Portola Valley	July	6	20,000
Cotati	August	6	10,000
Bodega	August	N/A	5,000
Mather Air Base	Sept/Oct	N/A	30,000
Irving Street	October	6	40,000
Total Board Feet Recovered			177,000
*N/A: Not available.			

Greenhouse Gas Emissions

Source reduction of wood through deconstruction directly reduces greenhouse gas emissions by keeping the material out of the landfill and increasing forest carbon sequestration. By reusing 221 tons of lumber, this project reduced greenhouse gas emissions by 96 Metric Tons of Carbon Equivalent (MTCE) -- roughly the amount emitted annually by 70 cars. To estimate your greenhouse gas reduction benefits from source reduction or recycling, use EPA's online calculator - Waste Reduction Model (WARM) at <http://www.epa.gov/globalwarming/actions/waste/w-online.htm>, and for additional information on climate change and waste visit

<http://www.epa.gov/globalwarming/actions/waste/index.html>.

Lessons Learned

In the first six months of deconstruction, the SFCR/BWI joint venture partners made considerable progress toward their goals. Through this initial phase, the partners mastered significant business skills, such as job logistics management and business operations efficiency. The partners also acquired a first-hand understanding of market-induced contractual slumps that occur regardless of intensive promotional efforts or other legwork. The joint venture recovered 60,000 total board feet of lumber for reuse that was remanufacturing into flooring by BWI. Some doors, windows, and built-in cabinets were also sold through Building ReSources.

BWI currently employs five permanent crew members, and the organization has the capacity to expand through casual labor or collaborations with homeless programs.

This is the fourth in a series of five case studies on deconstruction projects produced by the Materials for the Future Foundation. Funding provided by the United States Environmental Protection Agency, Region IX, under the Source Reduction and Recycling Initiative of the US Climate Change Action Plan. Project managed by Lisa Geller. Written by Joanna Galuszka. Designed by Simon Walker. Materials for the Future Foundation has compiled this information as a resource guide only and does not, by inclusion, endorse any of the organizations listed, nor, by omission, imply any negative opinion. Copyright 2001. The Materials for the Future Foundation. All rights reserved. Permission to use, copy, and/or distribute this document in whole or part for non-commercial purposes is hereby granted, provided that this notice and appropriate credit to MFF and US EPA are included. Commercial use requires prior written consent from MFF. If you have questions or comments about this material, please contact

Materials for the Future Foundation
P.O. Box 29091
San Francisco, CA 94129
tel: 415.561.6530 fax: 415.561.6474
email: mff@best.com
<http://www.materials4future.org>