

# Building Materials Salvage

Environmental and business development opportunity



## About the project

**Building type:** commercial building (church)

**Square feet:** 4200

**Construction:** single story, concrete exterior walls, heavy timber, torch-down roof

**Location:** Ballard neighborhood, Seattle

**Project completed:** February 2008

**Diversion method:** partial deconstruction

Greenleaf Construction is a leading green homebuilder in the Seattle area, working mostly on single family residences and townhouses that use the Master Builders Association of King and Snohomish Counties' Built Green environmental home rating program. A signature Greenleaf strategy is salvaging materials from buildings slated for demolition and incorporating them into new projects.

## Approach

Cedar Sound Homes, a regional homebuilder, purchased a former church building in Ballard with the aim of developing a cottage home community. The structure piqued the interest of Greenleaf. A site visit determined that the building could yield large-dimension timbers. Partial deconstruction was determined the best route for accessing the materials. Cedar Sound Construction agreed to pay for the labor to perform the partial deconstruction, in exchange for a report listing the materials salvaged.

Crews first removed a "cricket roof" (2x4 and shiplap structure held 30" above the main shiplap roof deck) with crowbars and hammers and the main shiplap to expose 2x12 roof beams, along with the lath and plaster ceiling. Then the roof members were removed, lowered

## Project participants

### Owner:

Cedar Sound Construction

### Salvage contractor:

Greenleaf Construction  
[www.greenleafconst.net](http://www.greenleafconst.net)

### Hauler:

5th Avenue Excavation  
(recycling/disposal)  
[5thaveexcavation.com](http://5thaveexcavation.com)  
Greenleaf Construction  
(salvage)

### Recycling facility:

United Recycling  
[unitedrecyclingco.com](http://unitedrecyclingco.com)

## Ballard Church Salvage

This building in Seattle's Ballard neighborhood becomes a source of high-quality materials for a green homebuilder, which has added deconstruction and salvage to its business model. The 24 tons of wood salvaged from this project become source materials for the builder's current and future projects.

## Resources

**City Green Building**, in Seattle's Department of Planning and Development, provides resources, education and technical assistance towards improving the environmental performance of buildings in Seattle. Materials salvage resources include a Green Home Remodel guide on Salvage & Reuse, sample deconstruction specifications and how to information on salvaging windows, doors and flooring. [www.seattle.gov/dpd/GreenBuilding](http://www.seattle.gov/dpd/GreenBuilding)

**King County GreenTools** provides an online directory of recycling and salvage services for construction materials, lists recycling rates for local companies handling construction and demolition materials, and has additional deconstruction case studies. [www.greentools.us](http://www.greentools.us)

### Seattle Dept. of Planning + Development Client Assistance Memos (CAMs)

CAM 336: Reuse of Building Materials  
CAM 337: Demolition Permits  
CAM 1302: Building Material Salvage + Recycling  
[www.seattle.gov/dpd/publications/](http://www.seattle.gov/dpd/publications/)

### WA Dept. of Ecology: Demolition Debris

Describes the solid waste and hazardous waste elements of demolition debris. [www.ecy.wa.gov/programs/hwtr/demodebris/](http://www.ecy.wa.gov/programs/hwtr/demodebris/)

### For more information

Seattle Public Utilities  
Joel Banslaben  
[joel.banslaben@seattle.gov](mailto:joel.banslaben@seattle.gov)  
(206) 684-3936



[www.seattle.gov/util](http://www.seattle.gov/util)

This information available in other formats upon request.

# Building Materials Salvage

## Ballard Church Salvage Case Study

to the ground and the nails were removed by hand on sawhorses. They were then stacked and loaded into 5-ton flatbed truck for hauling to storage. This process revealed the structural 10x12 beams, which were carefully removed by track hoe. Finally, the materials were weighed and information documented.

### Schedule

Early February 2008: Greenleaf initiates communications with Cedar Sound Homes  
Week 1: Remove cricket roof; ceiling. Remove roof members.  
Week 2: Remove beams. Weigh and document materials.

### Lessons learned

The two-week window was the primary challenge on this project, compounded by several surprises. In this case, the building's roof was stripped off as part of the asbestos abatement process two weeks prior to the salvage team arriving, resulting in five inches of water in the building. Additionally, since Greenleaf's construction crew doubles as its salvage crew, existing construction projects were vying with the salvage project for time and attention.

Storage and transport of materials is an ongoing challenge; moving materials more than once or twice can create a losing economic proposition for materials reuse. Also entering into to the economic equation is the fact that carpenters often charge extra to work with salvaged materials, due to unfamiliarity and that stiff, brittle and warped wood can make for difficult work.

Greenleaf's diligent data tracking also allowed them to estimate the transportation savings from the project (35 gallons of diesel for avoided hauling), and economic development (184 labor hours and the value add of post-salvage milling services).

A major consideration for builders interested in adding salvage operations and salvaged materials use to their business models is storage of those materials for future use. Greenleaf recently started leasing space in the SoDo district of Seattle, thus allowing them to accumulate sufficient quantities of specific materials on to use projects.

Tenting and covering the salvaged materials at the final destination helped safeguard Greenleaf's salvage investment. Salvage operations are still unusual enough to garner attention by passers by: many people remarked positively about the reuse of materials—making the project a public education and marketing opportunity as well as a resource conservation effort.

### Materials diverted

Material	Tons
Wood (salvaged)	24.0
Wood (recycled)	164.2
Commingled materials (recycled)	12.8
<b>Total</b>	<b>201.0</b>

### Project cost

Labor cost to remove materials	\$6356.00
Payment from developer	-\$4682.00
Wood recycling	\$11166.00
Commingled recycling	\$924.00
Materials storage (monthly)	\$1268.00
Post-salvage milling costs	\$2640.00
Avoided cost of disposal*	\$24120.00

\*Assumes disposal costs of \$120 per ton