

Building Materials Salvage

Environmental and business development opportunity



About the project

Building type: two single family homes

Square feet: 1200 + 1500 (2700 total)

Construction: wood frame, 1-story and 2-story homes with below-grade basements and detached garages

Year built: 1950s

Location: Madison Valley, Seattle

Project completed: May 2008

Diversion method: non-structural salvage, recycle demolition debris

Seattle Public Utilities purchased two adjacent Madison Valley homes that had been damaged due to recurring floods in the neighborhood.

Approach

The houses were initially examined for full deconstruction (completely dismantling the structures) to maximize the potential for salvaging and recycling. However, an analysis revealed above normal levels of asbestos in the houses a common occurrence in older homes.

Making the house safe for the deconstruction crew would require expensive abatement of the hazardous materials. The diversion strategy shifted from full deconstruction to a salvage and recycling model.

First, the Northwest Building Salvage Network removed all high-value, non-structural materials from the house. Salvaged items included: interior and exterior doors, door hardware, iron railings, and plumbing and light fixtures. These items were donated to local salvaged material retailers to be re-sold. Neighborhood residents also salvaged vegetation from the two properties during this time.

Once the salvaged items were removed, a crew of three from Seattle Conservation Corps, a City service that trains youth in trade skills, performed a conventional demolition of the two houses using an excavator and loader. The demolition debris was placed in commingled recycling containers onsite and hauled to two

Project participants

Owner:

Seattle Public Utilities

www.seattle.gov/util

Salvage contractor:

Northwest Building

Salvage Network

Earthwise Salvage

www.earthwise-salvage.com

RE Store

www.re-store.org

Second Use

www.seconduse.com

Hauler:

Allied Waste

www.rabanco.com

Recycling facilities:

Recovery 1

www.recovery1.com

CDL Recycle

www.cdlrecycle.com

Renton Concrete Recyclers

rentonconcreterecyclers.com

Madison Valley Salvage

Two Madison Valley homes located in flood-prone areas are torn down and recycled as part of Seattle Public Utilities' Flood Control Program. Salvage and recycling the water-damaged homes avoided the generation of more than 96 tons of demolition waste.

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

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

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/

WA Dept. of Ecology: Demolition Debris

Describes the solid waste and hazardous waste elements of demolition debris. www.ecy.wa.gov/programs/hwtr/demodebris/

For more information

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www.seattle.gov/util

This information available in other formats upon request.

Building Materials Salvage

Madison Valley Salvage Case Study

different material recovery facilities (CDL Recycling in Seattle and Recovery 1 in Tacoma). Both facilities sort demolition debris and separate out materials for recycling.

Concrete foundations from the houses were crushed onsite and used to backfill the basements prior to installing topsoil and grass seed. Extra concrete that was not used for backfill was hauled to Renton for recycling.

Schedule

Week 1: Salvage of interior non-structural high-value items and plantings.

Week 2 & 3: Demolition of structures.

Week 4: Demolition completed and material recycled. Site prepared with topsoil and seed.

Lessons learned

Older homes containing asbestos, lead paint and other hazardous materials can make efforts to deconstruct and salvage large portions of existing structures financially challenging. Choosing to selectively salvage high-value items and recycle as much as the demolition debris as possible is a good alternative to full deconstruction in these instances. Hauling demolition debris to material recovery facilities that sort materials and achieve a high rate of recycling will yield the best diversion rates for a project.

For the Madison Valley homes, the demolition costs to use the Seattle Conservation Corps (SCC) were slightly higher than utilizing a standard demolition contractor based on level of experience and costs to rent equipment. However, utilizing SCC's services provided greater flexibility for Seattle Public Utilities in terms of scheduling and payment. Overall, the project's high diversion rate coupled with the creation of over 320 labor hours to salvage and recycle the houses resulted in a successful effort by Seattle Public Utilities to save valuable materials from the landfill and provide new job opportunities within the community.

Project costs

Salvage (labor)*	\$0.00
Demolition (labor + equipment)	\$16500.00
Hauling	\$7500.00
Recycling (CDL Recycle)	\$4088.50
Recycling (Recovery 1)	\$4000.00
Total project cost	\$32,088.50
Cost savings over conventional disposal**	\$4000.00
Projected market value of salvaged materials (tax deductible)	\$740.00

* Salvage labor costs offset by value of materials.

** Assumes a disposal cost of \$120 per ton.

Materials analysis

Material	Amount (tons)
Salvaged items	0.8
Commingled recycling	94.0
Disposed	2.0
Total tons generated	96.8
Total tons diverted from landfill	94.8

Diversion rate*: 98%

* Diversion rate = total tons diverted / total tons generated