

Harbor Island Fisher Mill

The deconstruction of this warehouse diverted a total of more than 1.7 million pounds of materials from the landfill. An estimated 93% of the materials were recycled or salvaged, resulting in disposal cost savings in the range of \$40,000 - \$60,000 in disposal costs.

Deconstruction Case Study

Dismantling the past for a more valuable future.



"Deconstruction projects like the Harbor Island effort can help extend the life of landfills, benefiting the environment and ratepayers."

- Francis Gaspay, project manager King County Solid Waste Division

About the project

Project Background

- In 2003, King County Solid Waste Division acquired the historic Fisher Mill site on Harbor Island to serve as a potential location for an intermodal facility for solid waste.
- The county Solid Waste Division decided to deconstruct and remove two dilapidated wooden warehouses (built around 1910) and associated structures, totaling over 40,000 square feet.
- King County Solid Waste Division put the effort out to bid as a straight deconstruction project, and Grayhawk Construction's \$234,000 bid came in nearly \$14,000 under the county engineer's estimate - much lower than the average bid.
- In 2005, Grayhawk Construction deconstructed the two-story warehouses using a combination of both manual labor and machines.

Resources Saved

- Deconstruction of the warehouses generated nearly 360,000 pounds (more than 179 tons) of used building materials and another 1.3 million pounds of debris was kept out of the landfill through recycling.
- 178 tons of wood, including beams, rafters, and posts, were salvaged for reuse; an additional 11 tons of wood was recycled.
- Two tons of glass windows were salvaged from the Fisher Mill warehouses.
- Concrete was the most abundant material, by weight, recovered from the site, mainly from foundations and floors. More than 620 tons of concrete was recycled off-site.
- More than 60 tons of primarily ferrous metals was also recycled.
- All the recovered old growth wood is being sold on-line on Craigslist. The old growth wood is popular in high-end homes as accent beams, flooring, trim, and cove base. The wood is also popular for timber frame construction.



King County

Department of
Natural Resources and Parks
Solid Waste Division

For a piece of the old Fisher Mill contact Terry Marcell (Grayhawk Construction) at (206) 296-8445.

Beams, decking, hand hammered rebar, and other materials are currently available.

For more information, contact

Kinley Deller, Waste Reduction Specialist
King County Green Building Program
King County Solid Waste Division
206-296-4434
Toll Free 1-800-325-6165, ext. 6-4434
TTY Relay: 711

*This material will be provided in
alternate formats upon request.*

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Challenges

- Safety concerns prevented initial salvage assessment of some structures. Contractors seeking to estimate quantities and values of potential material salvage were unable to enter some structures due to safety concerns.
- The deconstruction team had to be careful of asbestos-containing materials. Grayhawk removed and properly disposed of six cubic yards of asbestos materials from the deconstructed buildings.
- Structural issues. Grayhawk had some challenges disconnecting the old wood structure from the brick wall that was badly damaged by the 2001 Nisqually earthquake.
- Labor costs. Salvaging in a manner that protected all the old growth wood drove up the cost of labor. Nails were removed from flooring and beams & columns were removed individually with nylon straps. Grayhawk is optimistic that the extra labor on this project will pay off through the sale of the 300-year-old wood salvaged from this project.

Pre-Contract Steps Taken

- A deconstruction specialist from the County was involved throughout the process, from bid development and contracting through the deconstruction phase.
- Prior to the bid, the Solid Waste Division had two separate consultants assess the warehouses to determine the materials worth salvaging, estimate dollar values of the potential salvage materials, and make recommendations on deconstruction techniques.
- The specialist helped develop initial bid documents, participated in the pre-bid meeting as a member of the project management team, and provided information to the winning bidder on salvage and recycling options. Deconstruction/salvage reports were not included in invitations to bid because the county did not want to be held liable for changes in market prices of salvaged items.
- The deconstruction contract specified that at least 75 percent of the used building materials must be diverted from the landfill through recycling or salvage for reuse.

Lessons Learned & Recommendations

- Specifying diversion rates in the bid request can yield high levels of recovery for recycling and reuse. With the right contractor, projects can achieve their diversion goals and save money too.
- Having a deconstruction specialist from the County involved in the process from start to finish - including bid development, contracting, and team meetings - can make deconstruction more efficient and effective, keeping tons of waste out of the landfill.
- Documenting the deconstruction process with ongoing photos provides a valuable record to help promote and guide future deconstruction efforts. To obtain such photos, the county needs to clearly specify the request in its bid and contract documents.

The King County Construction Works web site also provides helpful information:

<http://www.metrokc.gov/dnrp/swd/construction-recycling/constructionworks.asp>