

# What is Deconstruction?

By Susan Kinsella, Susan Kinsella & Associates

Simply put, deconstruction is the reverse of construction. It carefully dismantles or removes materials from structures, as an alternative to demolition. It maximizes the recovery of valuable building resources for reuse and recycling and minimizes the amount of waste landfilled. Deconstruction options, starting with the most environmentally optimal, include:

- Reusing the building by remodeling, or moving the structure to a new location.
- Taking the building apart to reuse lumber, windows, doors, and other materials.
- Recycling or composting the non-reusable portions.
- Landfilling only those materials that are not reusable, recyclable or compostable.

## Why Deconstruct . . . Instead of Demolish?

- Capture, rather than waste, the embodied energy in the materials.
- Conserve natural resources by reducing demand for them.
- Sell salvage materials.
- Recover rare materials, such as old-growth lumber.
- Obtain older woods, which are stronger than currently-available lumber.
- Creates jobs and training opportunities.
- Meet government requirements.
- Reduce landfilled materials.
- Maintain a cleaner site, with less noise and dust.
- Save disposal fees.
- Preserve historical & cultural heritage - conduct archaeological studies.

## Frequently Asked Questions !

**Q: Do I need a special permit to deconstruct a building?**

**A:** Requirements are no different than for demolition: a demolition license and a demolition permit from the relevant local government.

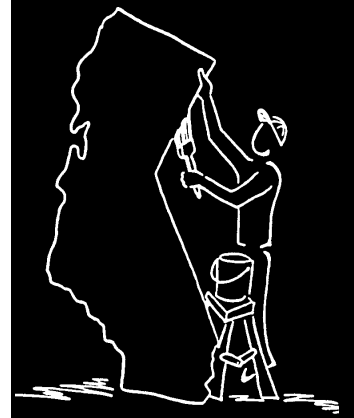
**Q: Isn't deconstruction more expensive than demolition?**

**A:** It is getting more cost competitive all the time. Costs can depend on the building, the materials available within it, and local salvage markets. Higher labor costs can be offset by the sale of materials and avoided disposal costs. In many cases, material sales have brought in enough income to make the net deconstruction cost lower than demolition bids. Also, offering deconstruction can provide a market edge, with more clients, particularly government agencies, wanting to or required to reduce waste and reuse materials.

**Q: How can I evaluate the potential for deconstruction on a particular project?**

**A:** Know your local salvage market. Talk to businesses such as wood salvage yards, concrete crushers, and businesses that sell reused doors, windows, light fixtures, plumbing and appliances. As demand grows, more salvage businesses are opening. Some contractors hold successful on-site materials sales. Evaluate the economics of potential levels of deconstruction in light of local markets. In some cases, only materials such as roofs, walls and cabinets will be cost-effective. In other cases, more materials will be economically salvageable. Even if deconstruction doesn't make sense for a particular project now, you can help create better markets for future projects by including reclaimed lumber, reused frames and fixtures in the new design.

*see other side . . .*



Repair, Resale, and  
Reuse Council

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and Reuse Industries

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# Frequently Asked Questions !

(continued)

**Q: How can I evaluate vintage lumber for reuse?**

**A:** Old wood is much harder and denser than virgin products on the market today. While drier, it is less prone to warping. Salvage wood can be regraded on-site, although current grading standards do not reflect that vintage wood is usually stronger for structural use than the wood available today. The U.S. Forest Products Laboratory in Wisconsin is currently testing vintage woods to develop new grading standards for future use.

**Q: How can material be valuable that has nail-holes or damage from deconstruction or previous use?**

**A:** Recovered structural timber may meet other uses, such as plank flooring, furniture, cabinets, and non-bearing walls. Many older buildings contain woods that are now rare and highly valuable, such as first-growth redwood, Douglas fir, oak, and cherry. Nail-holes or other wear may actually contribute to the antique beauty of floors and other products made from them.

**Q: How can I justify the extra time it takes to deconstruct? Nobody wants to allow that much time.**

**A:** Work with contractors to get enough time. Or minimize the time requirements by planning the project in an appropriately tight sequence. For example, use the time between land acquisition and granting of building permits to complete the deconstruction. Then the land will be ready for building when the permits are granted.

**Q: How can deconstruction meet government requirements?**

**A:** California legislation (A.B. 939) requires local governments to cut landfilled waste in half by 2000. Increasingly, environmental impact report (EIR) requirements may include recycling and landfill considerations. Deconstruction may be necessary to achieve a negative declaration. Several local governments are considering deconstruction ordinances. Cotati requires public notice of salvage opportunities for demolition materials. Berkeley bans the use of virgin redwood. Some government agencies such as the Navy and the National Park Service are increasingly interested in deconstruction. The Park Service requested deconstruction at San Francisco's Presidio in 1996, then in Yosemite in 1997. A new deconstruction project is slated for Sequoia National Park in 1998.

**Q: How can I account for deconstructed materials, to fulfill environmental auditing responsibilities?**

**A:** Require contractors to include disposition information in bids and final reports.

**Q: If deconstruction is so worthwhile, why don't more people do it?**

**A:** Deconstruction is not new. Some wrecking companies have long recognized its economic value by operating their own salvage yards. In fact, deconstruction was more common in the past, until heavy equipment encouraged ever-quicker project timelines. However, as the cost of equipment, lumber, gas and landfill tipping fees increases, deconstruction becomes a more economically attractive option. In addition, the public and builders increasingly recognize the importance of preserving resources and protecting the environment.

## Successful Examples!

About 75% of the demolition materials were reused in REI's new \$30 million flagship store in Seattle, or recycled or sold for salvage. (Architectural Records, March 1997).

Beyond Waste and San Francisco Community Recyclers deconstructed Building 901 at San Francisco's Presidio. The structure came down in one month, yielding 66,000 board feet of old growth Douglas fir and Port Orford cedar for salvage. The total deconstructing expense, including labor, equipment, and administrative costs, was \$53,000. With income from the salvaged wood of \$43,660, at a net cost of \$9,340. The demolition bid was \$16,800.

Beyond Waste also teamed with the Youth Employment Partnership to dismantle the Port of Oakland's Building 733 and to train at-risk youth. The large warehouse yielded 450,000 board feet of mainly old-growth douglas fir. The total expense to deconstruct was \$330,000; the income from salvaged lumber was \$280,000; The net cost was \$50,000. Demolition bid: \$150,000. (Urban Ecologist, Number 2, 1997). Beyond Waste Web site is at: <http://www.beyondwaste.com>

## Further Information . . .

- California Integrated Waste Management Board, C&D Construction & Demolition: (916) 255-2200, or Web site: [www.ciwmb.ca.gov/mrt/cnstdemo/default.htm](http://www.ciwmb.ca.gov/mrt/cnstdemo/default.htm)
- Center for Economic Conversion, (650) 968-8798
- Construction Materials Recycling Association, (630) 548-4510; (or) Email: [turley@cdrecycling.org](mailto:turley@cdrecycling.org)
- Materials for the Future Foundation, (415) 561-6530
- The Reuse Development Organization (317) 631-5395; (or) [www.redo.org](http://www.redo.org)
- Repair, Resale and Reuse Council, Website: [CRRA@aol.com](mailto:CRRA@aol.com)
- Used Building Materials Assn., Website: [www.ubma.org](http://www.ubma.org)
- U.S. EPA Region IX, (415) 744-1113; (or) email to the attention of Timonie Hood at: [hood.timonie@epa.gov](mailto:hood.timonie@epa.gov)

Visit the RRaRC Web site, for more information:  
[www.crra.com/rarcbro](http://www.crra.com/rarcbro)

## Resale Businesses . . .

- Berkeley Architectural Salvage, Berkeley ● (510)849-2025
- Beyond Waste, ● (707)792-2555
- Building Resources, San Francisco ● (415)285-7814
- C&K Salvage, Oakland ● (510)569-2070
- Caldwell Building Wreckers, San Francisco ● (415)550-6777
- Delta Scrap & Salvage, Oakley ● (510)754-1474
- Eco-Timber, Berkeley ● (510)549-3000
- Last Chance Mercantile, Marina ● (408)384-5313
- Natural Resources, Petrolia ● (707)629-3679
- Ohmega Salvage, Berkeley ● (510)843-7368
- Recycle Construction, Santa Cruz ● (408)462-4491
- Recycled Lumber Works, Ukiah ● (707)462-2567
- Recycletown, Petaluma ● (707)795-3660
- The Sink Factory, Berkeley ● (510)653-4926
- Stockton Recycling, Stockton ● (209)942-2267
- Whole House Building Supply, E. Palo Alto ● (650)328-8731
- Urban Ore, Berkeley ● 510/559-4450