

Wood Specification: Salvaged Materials

Terminology

Refurbished materials:

products that could have been disposed of as solid waste; refurbishing includes renovating, repairing, restoring, or generally improving the appearance, performance, quality, functionality, or value of a product.

Remanufactured materials:

items that are made into other products; e.g., framing off-cuts that are chipped and used as landscape mulch.

Salvaged materials or reused materials:

those recovered from existing buildings or construction sites and reused; e.g., structural beams and posts, flooring, doors, and cabinetry.

Resources

Old to New Design Guide, Salvaged Building Materials in New Construction (www.lifecyclebuilding.org) detailed reviews of the use of salvaged materials in real-life case studies in British Columbia.

Green Building Resource Guide (www.greenguide.com/about.html) and *Salvaged Building Materials Exchange* (www.greenguide.com/exchange/): a database of >600 green building materials and products selected for their usefulness to the design and building professions, and a searchable online database of green building products.

Building Materials Reuse Association (www.bmra.org): represents companies and organizations involved in the acquisition and/or redistribution of used building materials.

Used Building Materials Exchange (www.build.recycle.net): free online marketplace for buying and selling recyclables and salvaged materials.

Salvaging and reusing wood and wood-based products reduces demand for virgin materials and reduces waste, thereby lessening impacts associated with the extraction and processing of virgin resources.

A considerable portion of the wood used in construction (such as formwork, bracing, and temporary structures) and the wood in demolished buildings can be salvaged and reused. Reuse strategies divert material from the construction waste stream, thus reducing the need for landfill space and mitigating environmental impacts associated with water and air contamination.



Greater Texas Foundation, Bryan Texas
Photo courtesy of Page

Why Salvaged Materials Add Value

- Salvaged materials such as structural members and flooring add significant character to design. Frequently, salvaged wood products are sourced from old-growth timbers; these offer close grain finish and are extremely hard wearing.
- Some salvaged materials are more costly than new materials because of their “one of a kind” quality and because of the high cost of labour involved in the recovery and refurbishing processes.
- Reused materials refer to items that were “fixed” components on-site before construction began. To comply with most rating systems, these items must no longer be able to serve their original functions and must then be installed for a different use or in a different location.
- Demolished wood is considered salvaged wood. However most rating systems treat wood that continues to serve its original function (e.g., walls, ceilings, flooring) in a renovation project under a different category.

How to Include Salvaged and Reused Wood in Design

- The incorporation of salvaged materials as a design strategy affects cost estimates, the demolition phase (if salvaging from the project site), and the ultimate design development of the project.
- Coordination among the owner, design team, and contractor should begin early in the pre-design phase and continue through design development. Then knowledge of the site and building areas to be salvaged can be creatively and efficiently worked into the design, and opportunities to bring in salvaged materials from off-site can be incorporated into the project.
- Rating systems award credits for a prescribed percentage (by cost) of both on-site and off-site salvaged or reused materials.

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Procedure

- For rating system documentation purposes, maintain a list of reused and salvaged materials and corresponding costs.
- The percentage of salvaged and reused wood employed on a project is based on the cost of salvaged/reused materials divided by the total cost of materials. The cost will be the actual cost paid or, if the material came from on-site, the replacement value. The replacement value can be determined by pricing a comparable material in the local market (excluding labour and shipping). When the actual cost paid for the reused or salvage material (from either on-site or off-site) is below the cost of a comparable new item, use the higher value in the calculations.
- Furniture may be included if it is used consistently in the calculations of both salvaged materials and total materials used on a project.

percentage salvaged/reused materials =

$$\frac{\text{cost of reused materials (\$)}}{\text{total material cost (\$)}} \times 100$$

Pre-design: assess opportunities for reusing materials and the extent of site demolition involved and set goals accordingly.

Design: incorporate salvaged or reused materials into the design. Working with salvaged structural lumber requires the involvement of an experienced engineer. More than usual structural redundancy may need to be built into the design.

Contract documentation: identify resources and outline measures for the use of salvaged materials. Assemble a spreadsheet to track the proportion of salvaged materials in the project (as a function of materials cost, excluding labour).

Tender: work with the contractor to locate sources for these materials and document and track their cost and quantity during construction. This recordkeeping will aid the project team in the credit submission process.

Construction: advise the builder and trades of the scope and requirements of the salvaged products; alert them to specific responsibilities. Track materials and products that have been reclaimed, salvaged, or reused.



Wood Salvaged from Warehouse

Seattle District headquarters for the U.S. Army Corps of Engineers is a LEED Gold project which was partially funded through the U.S. GSA's Design Excellence Program. All of the wood used in the project was salvaged from a 1940s-era warehouse that previously occupied the site—a total of 200,000 board feet of heavy timber and 100,000 board feet of 2x6 tongue and groove roof decking.

Federal Center South – Building 1202 Seattle, WA Architect: ZGF Architects LLP
Photo: Benjamin Benschneider

What to Ask Suppliers

- Ensure that all costs are declared at the outset. Some salvaged materials are offered at prices that appear to be cost effective, but some costs may be hidden, such as the need for reprocessing.
- When dealing with salvaged wood products, clarify the presence of any toxic substances such as lead or asbestos, and ensure all costs and responsibilities for decontamination are taken into account.
- Confirm that documentation is available for the product's provenance and history.