

REDUCE, REUSE, RECYCLE

Construction of a typical single family residence consumes more than one acre of forest and generates three to seven tons of waste during construction, so the process of building more than 550 new rental housing units could actually generate a quantity of waste that would more than offset the amount of material salvaged from the Columbia Villa buildings.

Walsh Construction Company developed a waste minimization plan for all phases of construction—including demolition—that all contractors working at New Columbia adopted. The plan established a goal of 80% total waste reuse and recycling by weight and included on-site storage for all materials to be recycled: wood, drywall, metal, plastic, glass, cardboard, and organic debris.

Salvage and recycling efforts were particularly important because the site was not a greenfield—more than 200 existing buildings were taken down before construction of New Columbia began. Demolition contractors salvaged and recycled 82% of the building materials on site and diverted more than 28,500 tons of “waste” from the landfill!

100% of the concrete and asphalt rubble generated by the demolition of Columbia Villa—all 22,000 tons of it—was ground into gravel-sized pieces and reused on site as road base and structural fill around building foundations. The rubble made a road base so strong that contractors could drive heavy construction equipment on it during the winter months before final paving was completed.

The Rebuilding Center deconstructed two four unit buildings and salvaged every component of the buildings—with the exception of plaster and insulation—for resale.

23 of Columbia Villa’s duplex buildings were purchased by local house moving companies, unbolted from their foundations, and removed from the site intact.

3,200 tons of wood debris were ground into chips and reused on site for erosion control or sold to farmers and ranchers as hog fuel (a mulch-like bedding used in animal pens).

A storage building was purchased and disassembled on site by a landscape contractor. The building was reassembled in Vancouver, Washington.

Salvaged materials from Columbia Villa have been reused locally and all over the world: Heavy timbers were resawn for use as architectural finish material in Japan; a Tongan man living in Portland purchased enough lumber, roofing, windows, appliances and plumbing fixtures to build three houses for his family in Tonga; 1,200 square feet of roofing material was donated to reroof an elderly woman’s home in Salem; enough windows and siding were donated to the Amity school district to refurbish an entire school and gymnasium.

WHAT HAPPENED TO COLUMBIA VILLA’S WINDOWS?

Columbia Villa’s windows were replaced in the 1990s in an effort to eradicate lead paint on the property and they were still in good condition when the buildings were taken down. However, the windows couldn’t be reused at New Columbia because the manufacturer’s warranty was voided when they were removed from the buildings. But, not a single window from Columbia Villa went to the landfill! Windows were sold to other housing developers, to neighboring homeowners who wanted to upgrade their own windows, and were donated to the Habitat for Humanity ReStore and the Rebuilding Center.

MINIMIZING MOLD AND MILDEW

Buildings are filled with potentially toxic chemicals that impact our health, and mold and mildew have become chronic problems in recent years. The architects and contractors of New Columbia’s rental housing worked together to develop construction methods that minimize the risk of mold and mildew.

- Front and rear doors are protected by porches and deep overhangs, eliminating the introduction of wind-driven rain into the structure at these vulnerable areas.
- At all exterior walls, joints between sheets of sheathing (on the exterior) and drywall (on the interior) are sealed with draft sealants.
- Mechanical fans installed in all kitchens, bathrooms and utility rooms are quiet, vented to the outside, and run at low speed around the clock to reduce the risk of mold in these rooms and to insure indoor chemicals are quickly evacuated.
- Fresh make-up air is brought into units through operable window vents.
- Radiant heaters are located below windows to prevent condensation and mold growth on glass and nearby surfaces.
- Blower door tests were performed on a random sample of rental units. Such tests measure how air moves in and out of penetrations in the building envelope and let the contractor make adjustments to the construction.



Photos from top:

Salvaged metal roofing ready to be removed from the site.

A building on blocks is prepped to move.

A large pile of concrete rubble waits to be ground up and reused.

WASTE NOT, WANT NOT

Many salvaged building materials were returned to HAP for use at other public and affordable housing sites. Contractors and private parties purchased the remaining items. Salvaged materials include:

windows • metal roofing
siding • structural timber
plywood • cabinetry • doors
door hardware • appliances
furnaces • water heaters
toilets • sinks • bath tubs