

Demolition & Decon

The Flip Side

BY JASON SOEDA

There's a lot of talk about green building. Usually, the term conjures up images of contractors erecting environmentally friendly homes and buildings. But in this report, we focus on the people taking the structures apart. Read on and see why these demolition and deconstruction contractors are among the greenest in the business.

The First Step

"Picture all of this stuff in a mangled pile on a landfill," says Quinn Vittum of Re-use Hawaii as he surveys a towering stack of high-quality oak lumber that once served as church pews in the former First Presbyterian Church on Keeaumoku Street. "Can you imagine how much room this would take up?" Rather than ending up in a landfill, these salvaged pieces of hardwood lumber are now on display in the Re-use warehouse, waiting to be purchased at a fraction of their true value.

Vittum then inspects a stack of old growth Douglas fir tongue-and-

groove flooring. "This is neat old stuff," he says, letting his fingers trace its grain. This wood, he says, is no longer found in stores. "They call it clear vertical grain. See how there are no knots at all? This is the kind of wood we try to keep out of the landfill so that people can reuse it."

Welcome to Re-use Hawaii, a nonprofit organization dedicated to keeping building material out of the state's ever shrinking landfills. To accomplish this, the group recovers reusable material, brings it to the warehouse and makes it available to the community at economic prices.

The Re-use Hawaii warehouse

abounds with building materials salvaged from deconstructed homes and businesses. Like at The Home Depot, customers can find lumber, windows, doors, flooring and hardware.

There is also a vast selection of brand new items, some of which are donations left over from large residential and commercial projects. Do-it-yourselfers may find brand new travertine tiles on sale for a pittance, maybe not be enough for an entire house but more than enough to complete a new kitchen.

One of Vittum's favorite deconstruction projects occurred in May. It involved a 100-year-old,



Quinn Vittum (center) and Selina Tarantino (left), co-executive directors of Re-use Hawaii, with warehouse manager Jordan Hart



Right, Re-use Hawaii's Quinn Vittum marvels at the quantity of first-rate lumber his crew is about to recover from a 100-year-old, 4,000-square-foot home in Manoa.

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4,000-square-foot home on East Manoa Road. The amount of reusable material gathered from the home was staggering: 68 percent of the material was reusable; 5 percent was recyclable; and only 26 percent was sent out for disposal. Among the materials salvaged from the home were vintage hanging light fixtures, French doors, large ornate windows, old growth fir lumber and moss rock. Deconstructing and reusing the wood eliminates the need to harvest 59 trees. It reduces the volume of waste needing landfill space by up to 15,156 cubic feet. It also preserves 147 million BTUs of energy, equivalent to 1,294 gallons of gasoline. Furthermore, keeping lumber and panel products out of the landfill will avoid the generation of 900 pounds of greenhouse gases.

The group's warehouse itself is a testament to their passion for reuse. "We decided to build our offices entirely of reusable material," says Vittum.

Of all the waste in Hawaii, 35 percent is C&D waste. "It turns out

a good portion of that 35 percent is reusable," says Vittum. "You know, if you really look at a building slated for demolition, the only waste you see is maybe some asphalt roofing, drywall and carpet. Other than that, all the framing, all the fixtures, doors, windows and plumbing are reusable. And even metal items that aren't reusable, like old pipe, can be recycled through the metal recyclers."

The State Weighs In

So, how does the state feel about the way the Hawaii construction industry is handling C&D waste? Are most demolition companies following the rules?

"From my standpoint, it's vastly improved," says Gail Suzuki-Jones, energy analyst for the Strategic Industries Division of the Department of Business, Economic Development & Tourism. "More

material is being diverted from the waste stream, preserving valuable landfill space. I think part of this has to do with the increased interest and number of green building projects in the state."

In the past, obstacles to proper C&D handling included high disposal costs and lack of venues for recycling and reuse.

"I think most of those challenges have been addressed over the past few years in terms of more options for different types of C&D materials," says Suzuki-Jones, who points to nonprofit groups on Oahu such as Re-use Hawaii and Baseyard Hawaii as well as neighbor island nonprofits like Maui Habitat for Humanity, Kauai Habitat for Humanity and ARC of Hilo.

Perhaps the challenge now, Suzuki-Jones says, is changing standard practices to incorporate reuse



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The chimney of the Alexander Young Hotel topples down in this frame-by-frame photo dated 1959. Tajiri Lumber was careful not to disturb a nearby live transformer vault, which if damaged, would knock out power all over Honolulu.



Tajiri Lumber handled the demolition of this structure at Kuakini Hospital in April 2009.

Photo credit: Michelle Oriani/Kuakini Health Systems

and recycling. “Fortunately, many companies see the economic viability of it and it just makes more sense,” she says.

While the contractors appear to understand what they need to do to comply with state law, illegal dumping of C&D waste is still an ongoing concern, says John Valera of the Office of Solid Waste Management, Department of Health (DOH).

Valera says inspectors currently are following up and responding to complaints of alleged illegal dumping, and in a few cases, warning letters are issued.

As an example, Valera says, “Occasionally we get a few who are trying to ‘recycle’ gypsum wallboard into what some call ‘soil amendment.’ It is better to dispose of the waste gypsum and plaster because currently, no recycling facility in Hawaii is permitted by our department to accept gypsum board from development projects. Gypsum recycling is also problematic because of Hawaii’s remote location, distance to end users like gypsum wallboard factories on the mainland, and the presence of contaminants, such as glass fibers, paint, nails and glue, in the material.”

The state also receives complaints about alleged “recycling” of waste concrete pillars and concrete slabs as backfill, which may become a potential issue if the concrete is not processed to meet the state definition of inert fill material — earth, soil, rocks, rock-like material such as cured asphalt, brick and clean concrete less

than 8 inches in diameter.

“We encourage landowners, general contractors or those not directly involved in the transport of waste from construction or demolition project sites to obtain disposal receipts from subcontractors and transporters,” says Valera. “Also, the construction industry should continue to recycle C&D waste in ways that are protective of human health and the environment, follow state laws for the proper disposal of both hazardous and nonhazardous wastes and report illegal dumping activity as it occurs.”

Three Generations of Demo

“Loud excavators gnawing and chomping at a building. The rush of adrenaline and stress that runs through the body as you are knocking the building down. The sight of the building falling just right. A puff of dust as the building drops. The satisfaction of having brought down the building safely.” These are the classic sights and sounds of a large-scale demolition project, says Raymond Tajiri, chairman of Tajiri Lumber, which has handled total and large-scale demolitions at historic Hawaii locations such as the Hilton Hawaiian Village, Kuhio Theatres and the Waikiki Biltmore Hotel.

One of the company’s most challenging projects was the demolition of the chimney at the Alexander Young Hotel on South King, Alakea and Hotel streets, between the Pacific

and Pauahi towers in 1959. There was a live transformer vault approximately 40 feet away from the demolition zone. A HECO representative warned the company not to damage the vault, saying it would knock out the electricity for the whole town.

More recently, a demolition project completed in April 2009 at Kuakini Hospital presented another unique challenge for Tajiri Lumber. The company’s work was located next to the surgery building therefore work was limited to the days that no delicate eye and heart surgeries were scheduled.

Over the decades, the company has acknowledged the importance of green building.

“In the past we used to salvage material from the buildings prior to demolition,” says Tajiri. His father, Kiyota Tajiri, actually started out selling salvaged lumber. It later transitioned to the demolition business when Bishop Estate asked the firm to demolish some houses. At the time, demolition was done by hand. Kiyota salvaged roofing material, lumber, windows, and electrical and plumbing fixtures, helping to minimize debris going into the landfills.

“Currently, we recycle on site when feasible,” says Tajiri. “Debris is separated and clean concrete is recycled at our facility. It is processed and used at various construction projects. Also, green waste and metals are separated and hauled for recycling.”

Tajiri adds, “In the construction industry, it is good practice to minimize construction debris



Demolition supervisor Koa Kawaa joined Island Demo in 1994. He has been committed to reusing and recycling building materials ever since.

In May, Island Demo performed demo work on a section of the Waikiki Shopping Plaza. Pictured here are the C&D materials the contractor separated into neat piles, making them ready for reuse and recycling.



being dumped into the landfill because of the limited space. In addition, recycling helps reduce the cost of demolition projects with less disposal fees and proceeds are recovered through recycling.”

Good to be Green

Mike Leary is president and CEO of Island Demo, a full service demolition and hazardous materials abatement company. Part demo man, part environmentalist, he has been salvaging C&D material since the company began in 1988.

“A long time ago, I came to the conclusion that three quarters of everything we’re throwing away can be reutilized,” says Leary, who found venues for the reusable and recyclable materials recovered from his jobsites. Hawaii’s landfills, he adds, should be completely waste to energy.

“It should be a crime to bury anything that can be reused or burned for energy,” says Leary. “You should never put metal in a landfill. You should never put concrete in a

landfill. It should be recycled.”

Currently, Island Demo’s base yard in Mapunapuna is Hawaii’s only licensed construction & demolition transfer station. The location of the facility offers contractors a cost effective alternative to hauling their waste to the landfills located on the west side of the island. C&D disposed of at the transfer station undergoes, on an average, approximately 27 percent reduction by weight through segregation techniques and recycling methods, reducing both the volume and the weight of materials destined for the landfill. Since the transfer station opened in 1996, Island Demo has kept more than 200,000 tons of materials out of the landfill.

One of the company’s most recent noteworthy projects is the demolition of a portion of the Waikiki Shopping Plaza. In order to add 30,000 square feet of retail space, Island Demo was hired to demolish a structure at the corner of Kalakaua Avenue and Royal Hawaiian. The owner’s goal is to recycle at least 75 percent of demolition debris. When


complete in the summer of 2010, the Plaza’s addition will be the first LEED certified building in Waikiki.

mga Architecture, which handled the design for the Waikiki Shopping Plaza addition, works only with contractors they trust implicitly, says mga Architecture principal Matt Gilbertson. For the retail addition, mga was involved in the selection a demolition contractor that could help the project achieve LEED certification. “This is a small community,” says Gilbertson. “If you do good work, you’ll get recommended. Island Demo is a good company. They follow the rules. It’s a good working relationship all around.


“LEED has set up some pretty rigid standards,” adds Gilbertson, “so when we sit down and talk with a demolition contractor, we go over them step by step.”

Beyond the Veil

“Demolition is a very challenging but exciting field to be in,” says Alex Cates, division manager for



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Nuprecon handled the demolition phase of the Royal Hawaiian Center's multimillion-dollar transformation project.

Nuprecon. "While the glitz and excitement of full-building implosions is what immediately comes to mind, it isn't what demolition projects usually entail."

Cates says Nuprecon's 23-year history actually centers on a more surgical approach. "You can categorize demolition projects into many types based upon the project scopes," he says, "but generally they fall into full-building, select demolition and structural demolition. Some projects involve all three categories and some involve various combinations of the three."

Cates adds, "Nuprecon has been involved with most of the downtown Waikiki revitalization projects. One we call the Beachwalk Project is a great representation of full-building demolition. We surgically brought down several hotel towers along the Lewers and Beachwalk corridor, which is now home to wonderful boutique stores and restaurants."

"When thinking about demolishing tall hotel towers you might ask yourself, 'Why wouldn't you just implode it?'" says Cates.

Implosions are very cost prohibitive and do not offer any sort of recycling abilities for the building debris, says Cates. Recycling is all about material sorting and segregation. Concrete, wood, drywall and metals all need to be separated while the work is performed. Concrete is kept sepa-

rate from wood; wood from drywall, etc. Without that, it all goes to the landfill as nonrenewable rubbish.

Finding True North

Demolition work isn't always hot and strenuous work, says David Williams, project manager for Northwest Demolition & Dismantling. "Most of Northwest Demolition's employees are equipment operators," says Williams. "We have chosen a business model that primarily focuses on complete structural demolition and recycling projects that are not labor intensive. The result is a project that consists of almost every employee



Northwest Demolition & Dismantling crews work with surgical precision to remove a tank at Sand Island.

on a jobsite operating a piece of equipment with specialized attachments in a guarded, air-conditioned cab. This equates to better productivity for the company and a better working environment and experience for the employee."

Williams says Northwest Demolition has been quite effective in reducing the level of C&D material entering Hawaii's landfills.

"The vast majority of materials derived from our projects are recycled," says Williams. "The largest by weight and volume is concrete. Concrete can be crushed to create a valuable resource for our clients in future developments. In the past four to five years we've probably crushed more than 400,000 tons of concrete that was not taken to the landfill. We're pretty proud of that."

After a demolition project is completed, Northwest takes steps to recycle and reuse as much C&D material as possible, says Williams. Northwest's most interesting recycling project involved recycling all the sheetrock from the demolition of Kapalua Bay Hotel on Maui. "We processed the material with our horizontal impact grinder and screened it to .25-inch minus with a ball deck screen," says Williams. "The material was used as a soil additive for a landscaping project. I'm not aware of any other company that has done that."

One of Northwest's most challenging demolition projects was the demolition of 17 structures for D.R. Horton Hawaii in Kailua in 2008. "It was challenging because of the large volume of material that needed to be removed from the site in a relatively short period of time," says Williams. "Our crews did a fantastic and clean job getting the work done on budget and ahead of schedule. The concrete recycled from this project was used for new construction at Kaneohe Marine Corps Base (KMCB)."

"Currently we are working for Healy Tibbitts in Kawaihae on the Big Island demolishing a large warehouse structure and associated lead paint handling and disposal," says Williams. "We also recently finished the demolition of a bulk-fueling terminal in Hilo for Tesoro. This project consisted of the demolition of several large storage vessels."

"Work is ongoing for Forest City on the Mololani site at KMCB. This work is the demolition of several hundred housing units over the next few years."

Williams says Northwest sees great potential for reuse and recycling in demolishing structures primarily constructed of steel and concrete. "These materials have a secondary market and actually reduce the overall cost of the project," he says.