B.C. seeks to regain market share in Japan with stronger hemlock lumber

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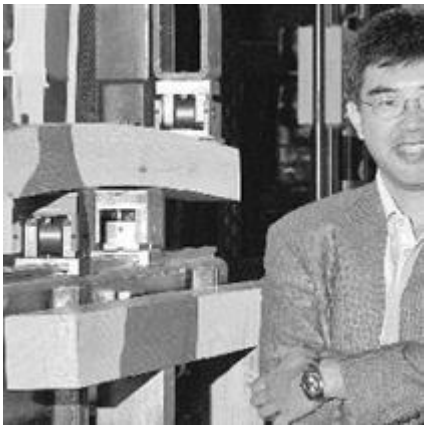
Once spurned as too rough-hewn, a more sophisticated version of B.C. hemlock is ready to take on Europe's esteemed engineered wood products in a battle over the Japanese housing market.



CREDIT: Ian Smith, Vancouver Sun

UBC timber engineering professor Frank Lam shows a piece of hemlock (top) under a 2,268-kg (5,000-pound) load.

Hemlock has been given a star makeover in a collaboration between researchers at the University of B.C. and coastal sawmillers after a decade of low demand because it was too primitive for modern housing needs.

It's still just a piece of wood, but now the Japanese are getting the best parts of selected logs that have been given a high-performance rating that is expected to set new industry standards in the Japanese housing market.

The result: Hemlock has emerged stronger, more tenacious and better looking than its factory-made competitors. To top it all of, it's natural, with none of the resins or formaldehyde of glued and laminated competitors.

B.C.'s new hemlock is making its debut today in Japan with an announcement by housing officials in Tokyo about new building code standards designed around its higher strength properties. Coastal producers are in Japan to showcase their lumber, hoping orders will soon follow.

This is not just a marketing push, said Rick Jeffery, president of the Coast Forest Products Association. The product coastal producers are using to woo Japanese homebuilders is far different than the moisture-laden lumber of the rainforest that builders rejected in the 1990s. Hemlock always had many of the characteristics builders seek. It's strong, has remarkable nail-holding strength and readily absorbs stains or wood preservatives.

But the product being made here was green, meaning it wasn't kiln-dried to a specific moisture content. When installed, it tended to twist, crack and shrink, something that homeowners accepted until 1994, when traditional construction styles utilizing green lumber were singled out as a factor in the collapse of many houses in the Kobe earthquake.

Overnight, hemlock was eclipsed by engineered wood. The Kobe earthquake led to tougher building standards and a parallel growth of factory built homes. Precision-measured lengths of engineered lumber that were stable, didn't crack and could be used in factory-assembled components, replaced B.C. hemlock.

Japanese homebuilders bought over a billion board feet of B.C. hemlock in 1994, worth almost $1.2 billion. But by 2005, hemlock exports had dropped to little over 300 million board feet worth only $200 million as the Japanese turned to engineered wood from Scandinavia and the once-robust Japanese economy entered a 10-year downturn.

The hemlock collapse was a critical factor in the decline of the coastal forest industry -- the closing of old sawmills, laying off of workers and the flight of capital from the region. Now the industry is betting that its rebirth as a component in modern housing designs will be a prime factor in the coast's recovery.

"We have hit rock-bottom. Now we are starting to claw our way back up," Jeffery said. "Hemlock is 60 per cent of our timber supply, so finding markets for it is, as you can imagine, quite important for us."

To turn hemlock around, Ottawa, Victoria and the coastal forest industry jointly contributed $2 million to research ways of drying it so it can be used as a component in homes where beams are pre-cut in factories to precisely measured sizes.

UBC researchers discovered that if loggers take more care in sorting the timber in grades and sizes, sawmillers make lumber from only the outside pieces and leave the dense, moisture-laden heartwood for other uses. The resulting lumber has a more uniform moisture content and can be kiln-dried so it won't shrink, twist or warp once it is installed in a house.

Producers here always knew hemlock had strength characteristics. But because old-growth hemlock logs vary in moisture content, every attempt at kiln-drying the lumber failed. Enough of the boards cracked or warped in the kiln to make the few that dried evenly too costly to produce.

The wood going into kilns today is still the same hemlock, but the product that comes out is vastly different. Homebuilders can make precision cuts that make kiln-dried hemlock suitable for posts, walls and roofing elements in high-performance post-and-beam homes. Earthquakes won't cause it to fail and typhoons won't blow hemlock roofs off.

"We have developed a new method of grading the lumber so we are selecting out for this particular market a very high-strength component of the hemlock forest," said Prof. Dave Barrett of the University of B.C.'s department of forestry.

The improved hemlock surpasses European glued and laminated products in stiffness and bending strength, said Barrett who, along with colleague Frank Lam, worked with forest companies to develop the product.

Lam said performance standards are a crucial factor in the plan to retake the Japanese market.

"We are competing in a global market in Japan against Scandinavian products and we need to be able to define the performance of these products and demonstrate to the customer that B.C. products are better than the competitors," said Lam. "And this is one product that is coming on-stream that clearly has performance advantages over other products."

Jeffery said the initial goal of coastal producers is to regain the market share they lost to glue-lam from Scandinavia, Russia and China.

The next phase, Jeffery said, is to expand the number of applications for hemlock in traditional Japanese houses and then to provide wider boards for the frame construction houses, a market that Interior producers developed but risk losing as the mountain pine beetle eats its way through Interior pine forests. Japanese are reluctant to buy lumber with the characteristic blue stain caused by microbes on the beetle.

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