Rolling build makes ‘world’s largest tent’ perfect for warehouse enclosure

Fierce British Columbia winter no match for ingenuity

Imagine a 110-by-140-foot warehouse that needs its entire roof replaced – not just the roof surface, but the roof’s structural panels themselves.

And these aren’t just any roof panels. They’re asbestos-coated corrugated steel panels, meaning that for the sake of environmental safety, the entire project had to be completely enclosed. Then imagine building the enclosure in a British Columbia winter.

This was the challenge faced by TWD, a Canadian engineering and construction management firm hired by the building’s owner, a major petroleum company.

So unusual was the enclosure piece of the project that one of the two contractors bidding on it simply pulled out once they saw the specs. The other contractor, AlumaSafway, knew they had the tools to make the job quick, safe and sound.

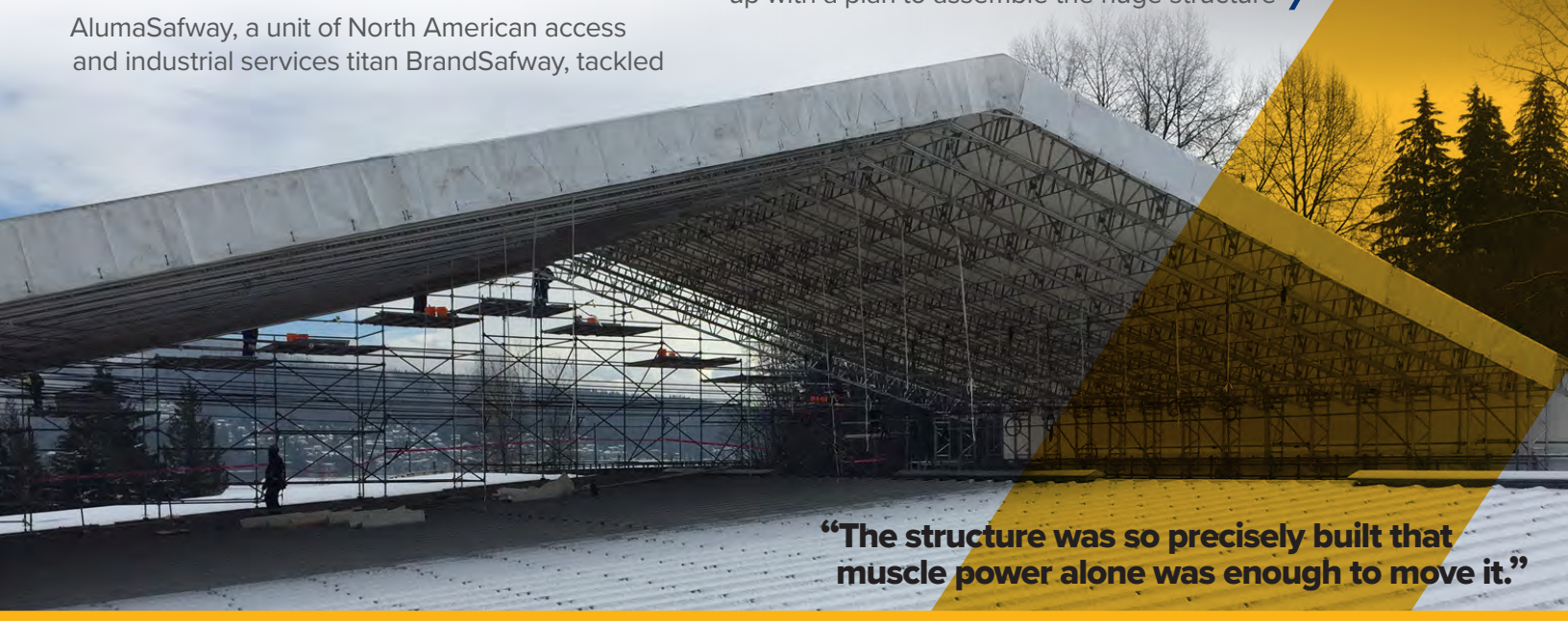
AlumaSafway, a unit of North American access and industrial services titan BrandSafway, tackled the job with a crew of 16. They enclosed the entire warehouse in four weeks, despite some brutal weather.

How they accomplished this is a testament to AlumaSafway engineering and the flexibility and strength of two HAKI® products, HAKISPAN 750 and HAKITEC®750, a system of modular structural elements that can be hand-assembled into long, strong spans, big enough for huge enclosures of this type.

It’s also a testament to the value of thinking on one’s feet.

A change of plans

Sales Manager Shawn Bishop and other AlumaSafway staff, along with Gary Checketts, a British representative of HAKI, led the planning. They worked with AlumaSafway engineers from AlumaSafway’s Infrastructure Division and came up with a plan to assemble the huge structure



“The structure was so precisely built that muscle power alone was enough to move it.”

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The project was the largest HAKISPAN roof ever built by hand in North America.

The roof enclosure was moved on rails using muscle power.

Value Proof

Project Dates:	**February 2017, enclosure remained in place for two and a half months**
Location:	**Vancouver Harbour, British Columbia, Canada**
Branch:	**Vancouver, British Columbia**
Scope of Work:	**Enclosure of 110-by-140-foot warehouse roof for asbestos abatement and refurbishing**
Products/Services:	**HAKITEC 750, HAKISPAN 750, scaffolding, engineering and labor**
Safety Record:	**No incidents, recordables or dropped objects during entire project**

on the ground, then lift the entire assembly over the building using cranes, and place it atop structures built with conventional scaffolding along the sides of the building.

But when the team actually saw the site, on the south banks of Vancouver Harbour, that thinking quickly changed. First, it would have been a very difficult technical challenge. Because of the HAKI structure's shape — basically a typical peaked-roof structure with a steep pitch to handle snow loads – it would have spread during a lift. A spread of even a few inches would have made it impossible to mate up with the side structures on which it was to rest. And then on top of that, a crane lift of this type is very complex and costly.

"They've done a great job, and their focus on safety was excellent."

Their solution, hatched on the spot, was to build the enclosure in place, one 5-foot cross-section at a time. But instead of moving the workers as the span was constructed, the workers remained at one end, standing on tiered towers constructed from conventional scaffolding. It was the ever-growing HAKI structure that moved, rolling on rails that were mounted on the structures on the sides of the building. Once a section was complete and covered with a weatherproof vinyl membrane, the workers would simply push on it, and the whole structure would move on the rails and be in position for the next section to be erected.

"We knew that we could easily build the enclosure this way with the HAKI system because it's so easy to work with. HAKI was the clear way to go for a project like this," said Bishop, noting that this project is the largest HAKISPAN roof ever built by hand in North America. AlumaSafway is a nationwide distributor of the HAKISPAN and HAKITEC 750 products in the North American market. HAKI is based in Sweden.

Moving with muscle power alone

The structure was so precisely built that muscle power alone was enough to move it, even though, in the case of the final move, it weighed nearly 15 tons. After each move, it was locked in place by heavy-duty ratchet straps.

"This was this particular crew's first outing with HAKI, so the fact that they were able to accomplish the build so quickly speaks volumes about how easy the HAKI product is to use," noted Bishop.

Ken Laverick, the construction manager for TWD, said AlumaSafway was responsive and impressive throughout the job, from their safety focus to their speed in getting the work done.

"They've done a great job, and their focus on safety was excellent," he said, adding that work continued at a good pace even though the weather made for "the toughest working conditions you can imagine." He added that he hopes he can work with AlumaSafway again on an upcoming job.

Regarding AlumaSafway's system of keeping the workers in one place and rolling "the biggest tent in the world" along on tracks as it was erected, Laverick said, "It's impressive; it really is."

The erection of the enclosure went up in four weeks in February and remained in place for two and a half months while TWD replaced the roof, after which the wheels under the HAKI enclosure were rolled in reverse for disassembly that took only two weeks.

