

Ready for Takeoff

BrandSafway Safely Lands Public Access at Portland International Airport

› Heels click and wheels zip as six million passengers make their way through terminals, gates and jet bridges at Portland International Airport (PDX) annually. This is why when the Port of Portland, together with local government entities, embarked on an ambitious five-year terminal expansion and renovation project, general contractor Hoffman Skanska LLC needed to minimize the impact on millions of travelers.

Originally built in 1936 and opened to international service in 1967, Portland International Airport has been through numerous expansion and improvement projects as air traffic has increased and passenger demands for airport amenities have diversified. Recently ranked the nation's 30th busiest airport and made famous by "shoe selfies" with its distinctive carpet, the airport has been recognized several years in a row by Travel + Leisure magazine as the U.S.'s best domestic airport for comfort and amenities. Regular travelers have come to expect a dependable level of ease and convenience.

"Keeping the public safe was our primary concern," said Derrick Beneville, project manager at Hoffman Skanska. "We needed the right solution to keep this billion-dollar project moving forward safely."

The first part of the airport overhaul plan included an 18-month expansion of Terminal C, requiring demolition of the end of the terminal to make room for more gates and retail space. However, up to 10,000 travelers can move through Terminal C daily, and it needed to remain open throughout the project. Hoffman Skanska also had to ensure a safe and unimpeded flow of passenger traffic in every kind of weather.

"We've known and trusted BrandSafway for years," explained Beneville. "So it was no surprise they came up with the winning solution, which ended up exceeding our expectations." ›



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› A step above

Responding to a Request for Proposal by Hoffman Skanska, BrandSafway project manager Troy Brown recognized an ideal opportunity to deploy a solution that was several years in the making: a temporary stair tower that complies with International Building Code (IBC)

project was the perfect opportunity to put this solution into service on a high-volume worksite.

Coatings ramp up safety

Brown also tapped into BrandSafway's coatings expertise to help develop and deliver the safest, most cost-effective access solution for the



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regulations, in combination with a custom-built accessibility ramp that meets Americans with Disabilities Act (ADA) regulations.

“Our solution was a clear, value-added step up,” explained Brown. “The typical industry solution would have involved either installing a construction-grade stair tower, which would not comply with IBC regulations, or bringing in a crew to fabricate ‘permanent’ stairs for the duration of the project, which would add both cost and time. Our engineers had been working with Universal Manufacturing on improvements to this IBC-compliant stair tower, and the terminal expansion project presented the right opportunity to put this new combination of solutions to use.”

Together, the ADA-compliant ramp and IBC-compliant stair solution provide one of the safest temporary public access options available in North America, and the Portland International Airport

project. “We were looking for a coatings solution for the ramp and stair surfaces that would further enhance safety and durability,” said Brown.

Jacob Melton, a coatings project manager for BrandSafway explains. “A typical consumer product would have provided some slip resistance and surface durability, but this project called for us to step it up due to the sheer user numbers and hours in service each day,” he said. “People would be moving through with rolling baggage, strollers and wheelchairs, and they would come in from outside where it could be raining or worse.”

To achieve both the long-term durability and slip resistance needed for the safest possible outcome, Melton deployed two-coat marine epoxy with an aluminum oxide media broadcast between coats, in gray for the ADA-compliant ramp and in high-visibility black and yellow for the IBC-compliant stair tower. Marine epoxy, typically used for ship



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repair and fully submersible, delivered the ultimate water-resistance, improved durability and ensured that the broadcast grit would remain in place on the walking surface to prevent the risk of slipping in even the wettest conditions. A polyurethane finish over the epoxy layers delivered extra protection against the elements to preserve color and slip-resistance since the ramp and stair tower needed to withstand high-capacity use over the projected 18 months of the project.

Brown presented mock-ups of the stairs, ramps and surface treads at BrandSafway's Portland location to multiple project stakeholders, including the general contractor and representatives of the Port of Portland and City of Portland. These mock-ups showcased the comfortable stair rise, gentler ramp slopes and skid-resistant walking surfaces.

“We’ve partnered with BrandSafway on projects over many years,” Beneville said. “When their pricing came in, and their solution met ADA requirements, all without impeding the project’s progress, it was just what I had come to expect.”

Over the life of the project, BrandSafway’s team will continue to monitor and inspect for any sign of wear or need for maintenance. “We almost overdesign the system on a project like this, so it will stand up to the exposure and endure constant, high-volume use,” Melton said.

The ramp design used replaceable surface panels, and spare panels were prepared, provided and kept on site at the airport. If a panel became worn, it could be swapped out with a fresh section quickly and easily during the terminal’s inactive hours. This eliminated the need to wait for coatings to cure on site while maintaining a consistently slip-resistant, safe surface for the public.

Protecting travelers from weather

And then there was the challenge of Portland’s weather. Protecting passengers through the duration of the terminal expansion would demand even more than safe access and egress with the temporary stair tower and ramp solution. On average, Portland sees precipitation — rain, snow, sleet or hail — 156 days each year. PDX’s travelers needed safe, reliable shelter from the elements while waiting for flights until the terminal was rebuilt.

Fortunately, BrandSafway is a nationwide distributor of HAKI® products in North America and has extensive experience providing solutions to protect assets and cover large areas. HAKITEC® structures provide reliable, >



Project Summary

Project:	Portland International Airport Terminal Expansion & Renovation
Location:	Portland, Oregon
Start date:	September 30, 2019
Turnover date:	November 7, 2019
Total cost/value:	\$820,000
Products:	Custom-engineered IBC-compliant stair tower, ADA-compliant ramp and HAKI® (R) enclosure.
Services:	Engineering and Coatings
Customer:	Portland International Airport
Contractor:	Hoffman Skanska LLC

› modular options that can span large, wide areas and fit almost any shape to provide protection from the elements. Brown tapped into BrandSafway's experts and proposed a HAKI® enclosure that would keep passengers protected in every season and withstand the weather throughout the project.

"The HAKI® solution provided more flexibility than a sprung structure and enabled us to install ventilation, sprinkler systems and fire alarms to ensure the highest level of safety and comfort for the traveling public," Beneville said. "BrandSafway's engineering expertise and support were key to navigating the complexities of code requirements and ensuring full compliance while using this unique, temporary structure. The alternative, again, would have been a structure built as 'permanent,' adding time and cost."

Surpassing standards for permanent structures

BrandSafway's expertise included the additional benefits of coordinating crews for optimal project efficiency, taking into consideration the multiple trades needed and sequencing of installations. In the end, the access and protective solutions provided by BrandSafway required only four months from initial demonstration to inspection and turnover, and the temporary solution met or exceeded regulatory requirements for permanent structures.

"I recently flew in from central Oregon and used the terminal myself," Beneville said. "It was well lit, comfortable, easy to use and performed like it should. It was great." <



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