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RESCUE MISSION:

BY JENNIFER FRAKES

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MORE THAN JUST A COSMETIC FIX FOR THE BEGICH, BOGGS VISITOR CENTER IN PORTAGE, ALASKA

The Begich, Boggs Visitor Center is an impressive concrete structure that was built on the moraine, or accumulation of rocks and boulders, left behind by Portage Glacier in 1914. The visitor center opened to the public in 1986, and over the next 25 years, it was blasted with wind, snow, and ice that came off the nearby glacier. The concrete was in such bad shape that in some areas the rebar was exposed. Ron Morrow of Linings Unlimited in Anchorage, Alaska, took one look at the substrate and knew that a traditional coating system might provide a temporary cosmetic fix but wouldn't be a long-term solution. That's when Specialty Products, Inc. (SPI) and its Ultra Bond-100 polyurea coating system saved the day.

BEAUTIFUL SCENERY, MEANINGFUL NAME

Located in the Chugach National Forest, America's second largest national forest, the Begich, Boggs Visitor Center is the most visited recreation site in Alaska. From the visitor center, guests are treated to amazing views of glaciers and Alaska's wildlife. It is also the hub of the Glacier Ranger District's interpretive programs that connect thousands of visitors with the awe-inspiring landscape of the state. First dedicated in May 1986 and rededicated with new exhibits in 2001, the Begich, Boggs Visitor Center is named after Rep. Nick Begich of Alaska and House Majority Leader Hale Boggs of Louisiana. The two men were aboard a Cessna that disappeared in route to Juneau from Anchorage on October 16, 1972. The last transmission from their plane came from the area where the visitor center now stands as a tribute to these two public servants.

POLYUREA SAVES ALASKAN VISITOR CENTER

MAXIMUM EXPOSURE

According to Linings Unlimited's Ron Morrow, the Begich, Boggs Visitor Center suffered devastating structural erosion from wind blast from Portage Glacier. The damage was so extreme on the north-facing portion that rebar was exposed. "Concrete can't take that kind of wind blast. It was as if the building was being whittled away," said Morrow.

The U.S. Forestry Service — the owners of the visitor center — knew something had to be done. However, they weren't aware of the fact that a typical coating system might give the building a temporary face lift, but wouldn't be able to protect the concrete from further damage.

"A federal contractor initially contacted my teammate Danny Crow of A to Z Construction Services, Inc. to paint the exterior as a solution to the continuing erosion. After seeing the damage to

ABOVE ▲ After 25 years of wind, snow, and ice exposure, the Begich, Boggs Visitor Center in Alaska was in such bad shape that some concrete had eroded all the way down to the rebar. Would a typical coating be enough to permanently protect the building?

Built on the moraine — an accumulation of rocks and boulders — left over from the Portage Glacier, the visitor center had a persistent problem. Luckily, A to Z Construction Services, Inc. and Linings Unlimited had a practical solution: Polyurea coating.

the building, A to Z Construction Services, Inc, could not justify the use of simple paints. The contractor was presented with our joint, counter-engineering of polyurea as the long-term solution," explained Morrow, an industry veteran who has been spraying polyurea for more than 20 years.

Once the Forestry Service saw a 300-square-foot (27.9 m^2) sample of just what Ultra Bond-100 and the AMP-100FR top coat could do for the deteriorating concrete, approval was granted on the spot.

"The Forestry Service men and women were amazed with the instant visual results, and, within 10 minutes of our applications, they signed off on the project. We had presented them with the salvation for their building," said Morrow.

THE SCIENCE BEHIND IT

The decision to apply Ultra Bond-100 wasn't based purely on aesthetics. While other coating systems may have looked good for a few months or possibly even a few years, the harsh Alaska climate would have taken its toll once again and the concrete would have needed to be recoated fairly soon. According to Morrow, the Ultra Bond-100 will repel the wind and protect the underlying substrate for many, many years. This is because polyurea coatings are extremely difficult to remove from a substrate. Polyurea coatings can't be sandblasted off; they must be removed with a hammer and chisel. In the instance of the Begich, Boggs Visitor Center, where the wind, snow, and ice act as natural abrasive blasters, this particular

BELOW ▼ Once the U.S. Forestry Service (the owner of the visitor center) hired Linings Unlimited, a 7-to-9-man team came in to prep the concrete. They used a power washer to clean off all debris from the 13,500 sq. ft. (1,254.2 m^2) of surfaces that were to be coated.

JOB AT A GLANCE

PROJECT:

Repair and recoat the badly damaged concrete of the Begich, Boggs Visitor Center using SPI's Ultra Bond-100 polyurea coating system. The Begich, Boggs Visitor Center is an impressive concrete structure located in Alaska's Chugach National Forest, America's second largest national forest.

COATINGS CONTRACTOR:

Linings Unlimited
7645 King Street
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(907) 561-1869
www.liningsunlimited.com

SIZE OF CONTRACTOR:

Varies depending on project

PRIME CLIENT:

U.S. Forestry Service

SUBSTRATE:

Concrete

SIZE OF JOB:

13,500 sq. ft. (1,254.2 m^2)

DURATION:

12 weeks

SIZE OF CREW:

7-9 crewmembers

UNUSUAL FACTORS/CHALLENGES:

- The Begich, Boggs Visitor Center suffered devastating structural erosion from wind blast from Portage Glacier, especially on the north-facing portion, where the damage was so extreme that rebar was exposed.
- The weather did not cooperate during the project. Heavy rain and high winds created many challenges for the crew. One storm in particular halted the work of the Linings Unlimited and A to Z Construction Services, Inc. crews and destroyed some pieces of equipment.
- The moat, two tunnels, and uneven rocks and boulders surrounding much of the structure meant that the polyurea was often sprayed from 35 or 40 feet (10.7 or 12.2 m) in the air on scaffolding or ladder racks.

PROCESS:

- Morrow and his crew repaired approximately 10,000 lineal feet (3,048 m) of expansion joints.
- All areas to be sprayed with Ultra Bond-100 were pressure washed to clean off all debris.
- Ultra Bond-100 polyurea coating was applied using a Graco H20/35 Pro.
- The Graco H20/35 Pro was also used to apply SPI's AMP-100FR top coat.
- The coating system was applied at a finished thickness of between 100 and 160 mils (2,540 and 4,064 microns), depending on the condition of the concrete substrate.

SAFETY CONSIDERATIONS:

- Safety was the number one priority for Morrow and his crew.
- Morrow wore a safety harness and lanyard and was securely tied off to the top of the building when spraying from above.
- He and the crew followed all standard safety procedures and wore safety goggles, respirators or particle masks, and Tyvek suits.

characteristic is a huge plus.

"The Ultra Bond-100 will protect the concrete long after other coating systems would have been wind-blasted off, and pieces of the coating would be falling into the lake and river," said Morrow.

Ultra Bond-100 is 100 percent solids with no solvents or volatile organic compounds (VOCs); it exhibits excellent chemical resistance, allows for a fast return to service, and can be applied in ambient temperatures ranging from -20 to 100°F (-29 to 38°C). Unlike other polyureas, Ultra Bond-100 does not require labor-intensive surface prep — a clean, dry surface that is free of oils and debris is all that an applicator needs prior to spraying. In most instances, as was the case with the Begich, Boggs Visitor Center job, a primer is not necessary. This is because of SPI's AE-4 adhesion enhancer that can be mixed in with the Ultra Bond-100. This admixture helps to form a chemical adhesive bond to a properly prepared substrate, and it eliminates the time-consuming process of applying primer, something that really helped in this Alaskan climate.

EXTREME CHALLENGES

Before Morrow could begin spraying the polyurea to the 13,500-square-foot (1,254.2 m^2) exterior of the Begich, Boggs Visitor Center, approximately 10,000 lineal feet (3,048 m) of expansion joints needed to be repaired. According to Morrow, these areas required 10 days of cure time before he and his crew could come in and spray. In addition, all areas to be sprayed were pressure-washed to clean off all debris.

An important piece of the puzzle for the job was making sure that all necessary equipment was moved into the area near the visitor center. This included scaffolding, man-lifts, ladders, and fuel for various pieces of machinery.

"We put the equipment in the rocky lagoon area, which was mostly empty of water when we first got there. All the equipment was on dry ground, so we thought everything was all good," declared Morrow. Unfortunately, this was not to be the case for the 12-week duration of the project.

According to Morrow, the weather was a huge factor throughout the job. In fact, he stated that the job would have been completed in about half the time if the weather had cooperated. One storm in particular halted the work of the Linings Unlimited and A to Z Construction Services, Inc. crews and created some major issues.

"We had two days of heavy rain that filled the lagoon, which is about 30 feet (9.1 m) below ground level. A to Z Construction

After shown a 300-square-foot (27.9 m^2) sample, the client approved Ultra Bond-100 and the AMP-100FR top coat from Specialty Products, Inc. "The Ultra Bond-100 will protect the concrete long after other coating systems would have been wind-blasted off," said Linings Unlimited's Ron Morrow.

RIGHT ▶ Once prepped, the Linings Unlimited's crew applied the polyurea coating system at a 100-160-mil (2,540-4,064-micron) thickness using a Graco H20/35 Pro. All crew members wore safety goggles, respirators or particle masks, and Tyvek suits.

Services, Inc. lost a pricey piece of lift equipment. It was on the rocks, and in the next moment, those same rocks were under seven feet (2.1 m) of water," said Morrow. It goes without saying that all remaining, salvageable equipment had to be moved to a different location on higher ground.

High winds also played a role in work delays. "The wind comes through the valley and is beyond brutal," stated Morrow. Although working in extremely windy conditions is not advisable on any job, the configuration of the Begich, Boggs Visitor Center made it virtually impossible to avoid and very dangerous. The moat, two tunnels, and uneven rocks and boulders surrounding much of the structure meant that the polyurea was often sprayed from great heights. "Sometimes I would be spraying from 35 or 40 feet (10.7 or 12.2 m) in the air on scaffolding or ladder racks. Other times, I had to rappel on the side of the building," recalled Morrow. "It took some moxie for me spray in these conditions."

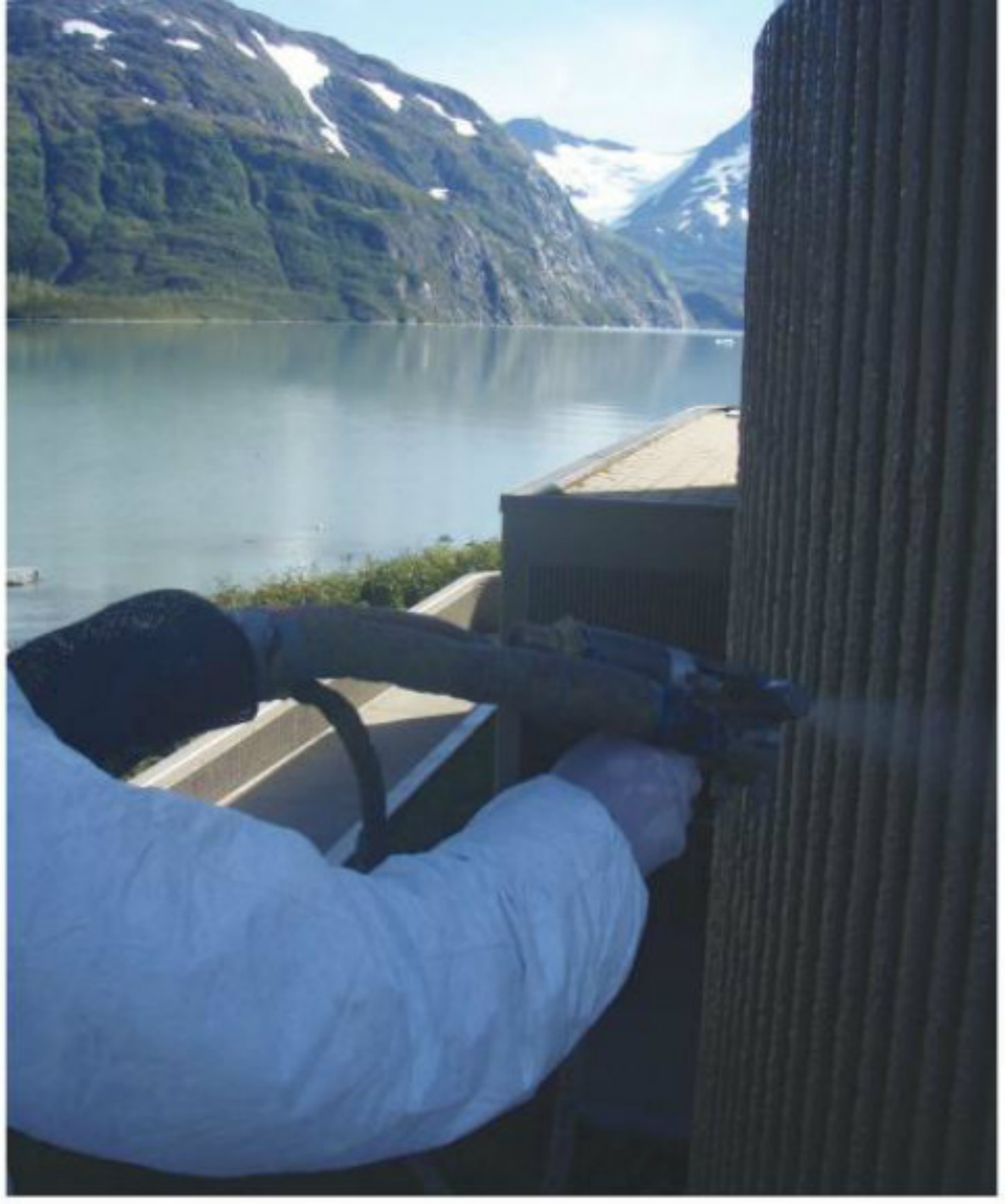
Safety was the number one priority for Morrow and his crew. He wore a safety harness and lanyard and was securely tied off to the top of the building. "I'm not a big fan of heights, so, while it was safe, I wouldn't exactly call it fun," laughed Morrow. He and the crew followed all standard safety procedures and wore safety goggles, respirators or particle masks, and Tyvek suits.

OVER THE TOP

Although at any given time Morrow had a crew of seven to nine men, he was typically the one to spray the polyurea coating using a Graco H20/35 Pro. Morrow pointed out that because polyurea hoses are extremely heavy, it made sense to have the hoses come from overhead instead of trying to lift them from below while balancing on scaffolding or ladder racks. "Prepping to spray was a bit intimidating; it's hard not to think about the height and the fact that 3,000 pounds (1,360.8 kg) of pressure are coming through the hose. However, once I started spraying, I was in the zone," stated Morrow.

He also used the Graco H20/35 Pro to apply SPI's AMP-100FR top coat. This

ABOVE ▲ "Sometimes I would be spraying from 35 or 40 feet (10.7 or 12.2 m) in the air on scaffolding or ladder racks," said Morrow. "Other times, I had to rappel on the side of the building. It took some moxie for me to spray in these conditions."



ABOVE ▲ At one point, rain filled the lagoon surrounding the visitor center and flooded the area, taking out a pricey piece of A to Z Construction Services' lift equipment. Luckily, everything else was salvageable, and the crew was able to finish the job within 12 weeks.

plural-component polyurea is a unique synergy of aliphatic and aromatic polymer chemistry that offers color stability and gloss retention as well as abrasion resistance. AMP-100FR is a 100 percent solids coating with no VOCs that is also hydrophobic, meaning it is affected very little by damp during application. Damp and cold were definitely two descriptions for the Begich, Boggs Visitor Center!

Morrow applied the coating system at a finished thickness of 100 to 160 mils (2,540 to 4,064 microns), depending on the condition of the concrete substrate. "Areas on the north side of the structure had suffered severe mechanical damage, so we put on about 160 mils (4,064 microns). Other areas of the structure, such as the south-facing side, were more protected from the wind, snow, and ice and only required about 100 to 120 mils (2,540 to 3,048 microns)," explained Morrow.

EASY TIE-IN

On large jobs such as the Begich, Boggs Visitor Center, it is simply not feasible to complete the job in a day or even a week, especially in inclement weather. With many polyurea products, there is a 12-hour recoat window. Once an application is beyond that window, extensive surface preparation must be undertaken and primer must be applied before polyurea application can resume. This is not true with Ultra Bond-100, which sticks to itself and other polyurea coatings. This means that each time Morrow and his crew returned to the visitor center, even if it was after the recoat window, they were able to start spraying where they left off.

MISSION ACCOMPLISHED

Morrow is proud of the work he did on the Begich, Boggs Visitor Center and feels that these coatings were the perfect match for the job. "The 10-minute approval of the coating system gave us a sense of accomplishment even before we started, but there were a lot of challenges that were beyond what we could have prepared for," said Morrow. One thing Morrow knows for certain is that the coating system will stand the test of time, even with the harsh conditions that will continue to assault this amazing concrete gateway to the Alaskan wilderness. CP

VENDOR TEAM

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