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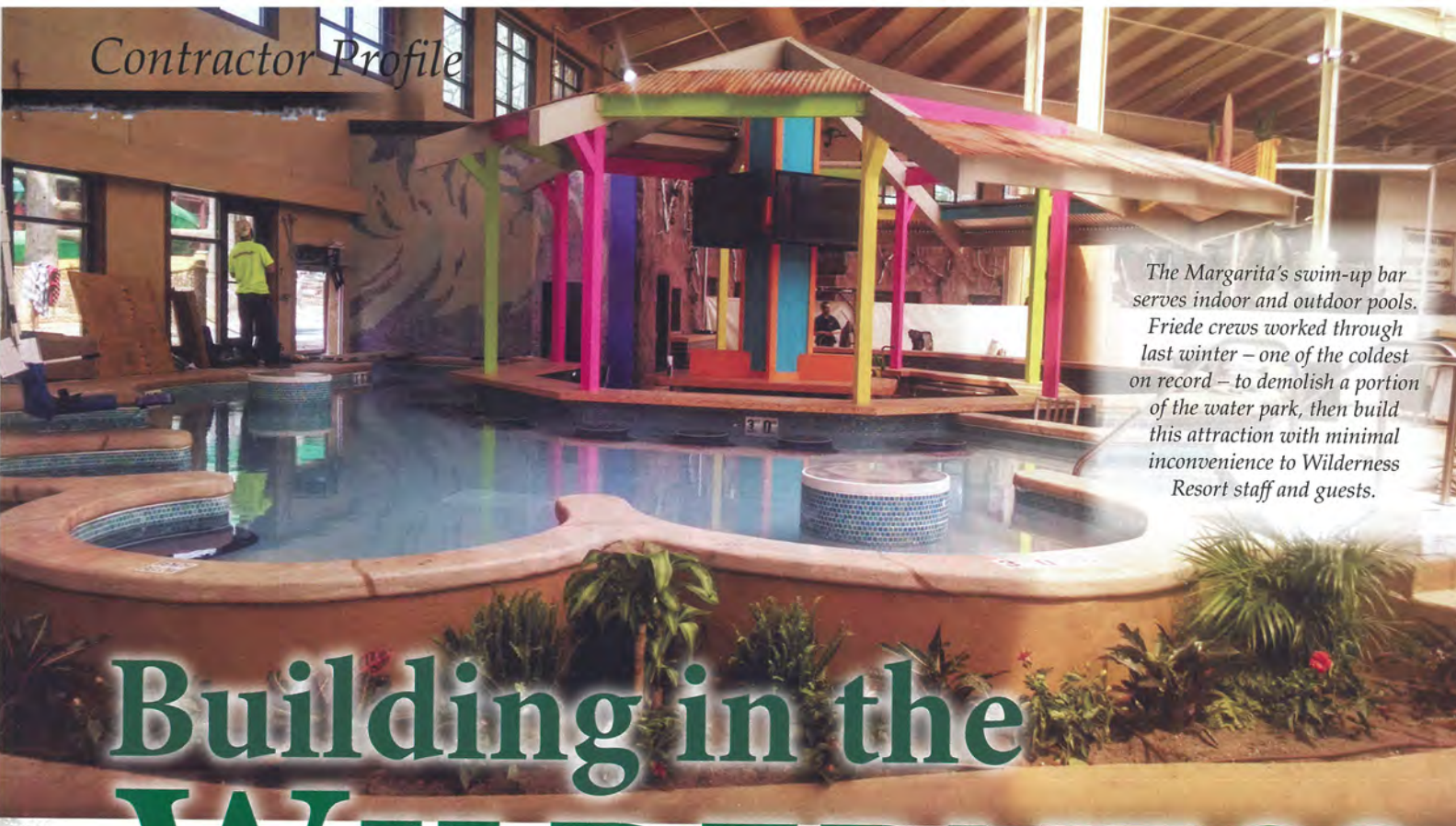
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Building in the WILDERNESS

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The Margarita's swim-up bar serves indoor and outdoor pools. Friede crews worked through last winter – one of the coldest on record – to demolish a portion of the water park, then build this attraction with minimal inconvenience to Wilderness Resort staff and guests.

Building in the WILDERNESS

Friede & Associates is building in some of the Wilderness Resort's busiest areas. They've been able to pull it off with minimal disruption and annoyance to staff and guests.

by Clair Urbain

Wisconsin Dells, Wisconsin, can be considered the Midwest's go-to play land for vacation. The town made famous decades ago by Tommy

Bartlett's Water Ski Show and the amphibious Wisconsin Ducks on beautiful Lake Delton, has evolved into a destination with several all-in-one themed water and thrill parks, complete with attractions for the young and old.

Wilderness Resort has been in the center of that metamorphosis, evolving its hotel, lodges, water parks, golf and other resort attractions to meet the changing entertainment palate of its guests. It's become the largest water park resort in America.

Most recently, the 600-acre attraction undertook more than \$4 million in improvements in its lodge and water park complex. The Klondike Boardwalk and Margarita's indoor/outdoor swim-up bar were completed in May, 2014; the Wilderwoods two-story indoor go-cart park will be

operational by mid-June.

This sounds like rather standard construction job fare for a progressive tourist attraction, but for Friede & Associates, which is serving as general contractor for most of the 2014 improvements, it was as much of a shoehorning job as it was a construction job.

With more than 500,000 sq. ft. of water parks and more than 1,000 guest rooms as well as villas, condominiums, cabins and other attractions, the improvements effectively closed off the main access point to the inner courtyard created by the sprawling hotel and waterpark complexes. Inside that area, you'll find giant fiberglass tubes that snake water park guests from heights to splash pools, plus pools and decks for sunning and enjoyment. You'll

Photos: Clair Urbain; Wilderness Resort

also find support buildings and infrastructure that supports the 365 days-a-year facility.

"It is like working through the mouth of a bottle," says Pat Weber, Friede job superintendent. "Anything involved with the construction projects must go in and out through what will soon become the indoor go-cart track. It's taken close attention to detail to coordinate all the trades so they can get their equipment and materials in and out of there."

Friede & Associates is the general contractor and Architectural Design Consultants Inc. is the architect for three of the improvements underway. "We are responsible for design build of the swim-up bar, the building for the go-cart track and the transformation of the former laser-tag area into the Klondike's Boardwalk that features Klondike Kate's Libations bar, Klondike Pizza Kitchen and Yukon frozen yogurt areas," says Scott Truehl, Friede & Associates executive vice president.

Two other factors make this project more difficult: the Wilderwoods two-story go-cart track literally shoehorns between three other buildings, each with different rooflines and as-built measurements that don't correspond with drawings of record; and the ever-present guest and service traffic that use the entrance just to the right of the construction area.

Design build works

"The design build approach was the only way to do this project in the timeframe we had to get it done," says Ethan Kent, Friede & Associates project manager. "Wilderness Resort representatives are very involved, attending every planning meeting we have with subcontractors, engineers and architects. We work as a team, especially when we have an issue that wasn't apparent when the plans were created."

Weber says from the beginning, plans didn't reflect the as-built facilities. "Nothing was square and the rooflines didn't match. We were constantly adjusting plans to reflect what was in place. We placed our steel order for the go-cart building frame, then submitted changes as we further worked the site to reflect what we needed to tie the three buildings together," he says.

Finally, the crew settled on two grid lines from which everything would be measured. "We were establishing the grid and making measurements in January when it was unusually cold and windy. Stretching tape measures, string lines and working with levels in the cold wind was a challenge. We were positioning piers in spots that seemed to be in the middle of

nowhere. We measured everything three times to make sure we were in the right spot," recalls Kent.

The weather didn't improve. Crews worked to pour footings and foundations in sub-zero weather and bitter wind chills. "When it would warm up, it would snow," says Weber. "We also stopped work from noon Friday through Sunday because of the weekend guests coming to enjoy the facility. We still managed to stay on schedule."

Before demolition inside the water park could begin for the swim-up bar, the work area had to be tented off to isolate dust and to reduce heat loss. "We had to remove two cabanas in the demolition area. One was used for a waitress service station, and when

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The Wilderness Lodge continues to adapt its facility to meet guests' interests. The new indoor Wilderwoods Go-Kart Trail (A) effectively closes off the inner courtyard of the lodge and water parks. While it was under construction, equipment and materials for the Margarita's swim-up bar (B) had to be brought through the go-cart building before it was closed in to complete the two-story go-cart track. Friede & Associates also managed the construction of the Klondike Boardwalk (C).

The New Frontier lobby is a separate improvement project.

we removed it, we found a manhole underneath it. It was hidden by a cabinet; no one knew it was there," says Kent.

The manhole was located in the middle of where the pool would be located. Further investigation revealed that it was a collection point for various storm drains, some of which were abandoned. They worked together on a solution that would allow pool installation.

"We used cameras and other methods to find out where these storm drains originated, then worked with the MEP contractor and the engineer to reroute the plumbing to handle the storm water," Weber says.

Other changes in elevation and outside building facades required some ingenuity to assure the older construction matched the new. "We were able to save finish rocks from areas where we did demolition and use them to patch in on other areas. That way, the finish work matched because the faux stone had faded consistently," Kent adds.

Fire control and communications needs

Because the final construction would seal off the inner courtyard to any large vehicles, two dry standpipes were installed so the fire department could pump water to hoses inside the courtyard if there was a fire.

A fiber-optic communications line that serves the complex's safety, monitoring and communications system runs right through the construction zone near the swim-up bar and go-cart track. "We've run it overhead during construction, but it will be buried once we finish most construction on the site," Kent says.

Construction materials and supplies for the outdoor pool connected to Margarita's bar had to be moved to the site through the southern entrance that

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As crews put the finishing touches on the swim-up bar, extensive plan modifications beforehand made construction possible. Beginning plans rarely matched as-built portions already in place, so the design build team made, reviewed and approved changes practically on the go.



Pat Weber, job superintendent, Ethan Kent, job supervisor and Scott Truehl, executive vice president at Friede & Associates.



Inside the courtyard, this was the only path for equipment and supply traffic. The overhead support for the water slide created clearance issues. The base of the building buttress (center) uses salvaged face stone from other parts of the building for a good match.

would soon be blocked by the go-cart building. "It's a tight squeeze through here and there are overhead water slide supports that restrict equipment height. We used smaller equipment and hauled concrete with buggies to get it where it was needed because access is so tight," Weber says.

Working in a fishbowl

The waterpark and hotel continue to operate at or near capacity throughout construction. "We had a lot of guest interest in what we were doing. We could feel them watching our work," says Weber.

Out of guest consideration, they restricted work to between 8 am and 5 pm most days. "We only had one complaint from a guest when we had some material get laid down noisily right after we started working for the day. We do everything we can to reduce noise, traffic or dust that could affect guests," says Kent.

The main work entrance is adjacent to the water complex's main entrance, which is also the location of the ADA ramp, bus loading and unloading area and service deliveries. Extensive guest and service traffic made the parking lot an important aspect to keeping the facility functional. "

We planned laydown areas and equipment parking so buses and large delivery vehicles can circle to the entrance, load and unload, then exit without backing up," Kent says.

Self-performed work

Friede & Associates self-performs most of its own concrete, steelwork, carpentry and finish work.

"We couldn't have done this if we bid it conventionally and then subcontracted out the work. We are all on a team. If one of us has a problem, we all have a problem. We find these types of projects are best handled as a design build project," Kent concludes. ♦



The only entrance into the work area is through the building being constructed that connects three previously constructed buildings. The Survivors restaurant entrance is also the main entrance for the water park and it also receives resort deliveries. Crews had to stage materials to allow parking lot access and coordinate equipment and material movement around guests and each other.



Klondike Kate's Libations is the centerpiece of the Klondike Boardwalk that recently replaced the laser tag attraction. It also features a pizza kitchen (far left) and a frozen yogurt bar (below).

