

Designed to Withstand the RAIN



The Foley Sports Tourism Complex stays playable with a sand cap utilizing Profile Porous Ceramic Greens Grade

By Rena Wish Cohen | SPECIAL CONTRIBUTOR

FORTY minutes away from Mobile, Alabama - one of the rainiest cities in the U.S. - the small town of Foley decided to build a major sports venue to attract tourism dollars. The project, known as the Foley Sports Tourism Complex, involved construction of a 90,000-square-foot indoor events center along with 16 multipurpose athletic fields designed to accommodate outdoor sports such as soccer, lacrosse and football.

Despite the heavy rainfall in the area, project designers rejected the option of using artificial turf for the outdoor portion of the complex and instead elected to build all 16 fields utilizing natural grass. The goal was to deliver a better playing surface that would also minimize injuries. Fringe benefits included cost reductions achieved by avoiding synthetic turf. The challenge was to ensure rain-or-shine playability 365 days a year.

Accordingly, each field was constructed by topping Alabama's signature red clay-based soil with a 10-inch layer of native sand mixed with 15 percent Profile Porous Ceramic (PPC) Greens Grade to both accelerate drainage and hold moisture and nutrients in the pore space within each PPC particle. Surface water percolates into flat drain tiles beneath the root zone, flows to drain pipes installed in the spectator zones between the fields and then empties into a 6-acre retention pond created as part of the development or off the property altogether.

"This sand-cap design enabled us to provide a root zone mix that exceeds drainage specifications. Even if there is a heavy rainfall that causes a rain delay, the fields will drain naturally so that tournaments can resume play," says Charles Graham, whose On Course Project and Agronomic Consulting firm developed the field design and specifications in collaboration with project engineers.

"I've been involved in engineering soil systems for more than 125 golf courses and sports fields around the world, including locations like Singapore that get as much as 100 inches of rain annually," Graham noted, "and I've been using the same basic sand/soil amendment mix in the root zone design for 20 years because it works."

Sweet home economy

Located just nine miles from the vacation beaches of Alabama's Gulf Coast, the 89-acre Foley Sports Tourism Complex is part of a larger economic development project that will eventually include an adjacent family-friendly entertainment center with a 10-acre amusement park, hotels, restaurants, retail space an RV park and a water park. The finished development is expected to be a major travel destination that has been called a cross between Six Flags and Branson, Missouri.

The \$32 million sports complex, with its outdoor fields and indoor event center, is being funded by the city of Foley. The \$200 million entertainment center is being developed by the Poarch Band of Creek Indians, which took over from a group tied to the Blue Collar Comedy team of Bill Engvall, Jeff Foxworthy and Larry the Cable Guy. Initial forecasts when the project was announced in 2012 estimated a \$175 million influx of annual tourism revenues, plus thousands of city, county and state jobs.

The outdoor fields were the first to be built, and Foley's sports tourism department started tournament recruitment efforts even before construction started in 2015. Former University of Alabama soccer head coach Don Staley was hired away from the Tuscaloosa Tourism and Sports Commission to lead the initiative.

By the time the ribbon-cutting ceremony was held in September, Staley already had lined up an impressive list of events - including three large soccer tournaments that were expected to bring 10,000 visitors to town two months later.

Planning for rain

The outdoor portion of the complex encompasses 15 qualifying fields laid out in a grid, plus a contiguous championship field equipped with TV-ready lighting, press box, stadium seating for up to 1,000 and room to expand seating capacity. Each field measures 120 yards long and 75 yards wide, making it possible to host every major competitive sport except baseball.

The decision to use natural grass in an environment known for wet weather required a design with proven drainability. Foley has a typical yearly rainfall over 59 inches - 62 percent more than the nationwide average. Nearby Mobile gets more than 65 inches of rain annually, earning the title of the soggiest U.S. city in some rankings.

Graham drew on his three decades of experience with the drainage challenges of golf course construction to address the issue. Using the same strategy that helps keep golf turf dry enough for golfers to keep their tee times, he designed a sand cap combining inexpensive native sand from a source just 10 miles away with the porous ceramics of PPC. The unique mineral properties of the Profile product were crucial for multiple reasons, according to Graham.



The 15 finished practice fields drain effectively despite heavy rains in the area, while standing water remains in the unfinished area shown in the foreground.



The outdoor portion of the Foley Sports Tourism Complex encompasses 15 qualifying fields, laid out in a grid.



With Alabama's mild temperatures and the white sand beaches of the Gulf of Mexico shoreline just minutes away, the Foley Sports Tourism Complex and adjoining entertainment center promise to draw athletes and their families on a year-round basis.



Each sand cap was covered with Tifway 419 bermudagrass.

The 16 athletic fields are part of a bigger project that will include an indoor events center, a family-friendly hotel and entertainment complex.

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"One of the big positives is that the money we saved by using a local native material instead of having to buy processed sand that would be required with other inorganic soil amendments more than paid for the Profile product. We literally dug the sand out of the ground 10 minutes from the construction site," he says.

"I also knew from experience that the PPC would increase the infiltration rate by 20 to 25 percent, increase the water- and air-holding capacity to further control wetness levels and provide the nutrients needed for the grass to grow and never fall apart," Graham added. "I've seen golf greens built 15 and 20 years ago where the PPC particles are still intact. I don't know of any other inorganic soil amendment with this longevity or combination of physical performance characteristics."

Ready, set, build

Field construction began in March 2015. The site consisted of vacant land, once used for agriculture but fallow for many years, that required extensive preparation work. It took nearly five months to clear trees, level the ground and install the irrigation and drainage systems in a herringbone pattern directly on top of the soil.

Construction teams then spread the sand, compacted it, applied PPC on top, rototilled the ceramic particles into the sand in three to four different directions

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using 75 to 80 tons of PPC per field, and finally sodded all 16 fields with Tifway 419 Bermudagrass - a popular choice for golf and sports turf because of its aesthetic qualities, easy maintenance and resistance to high traffic as well as disease.

The installation lacks the gravel layer used in many sand caps because Graham believes sites in certain geographies can achieve sufficient drainage with proper soil engineering.

That opinion is borne out in other projects that Graham has designed as well as in drainage measurements on the Foley site itself. According to Killian Construction, the general contractor on the project, infiltration rates on the 16 fields range from 11.75 to 23 inches per hour. That in turn means minimal rain-related tournament interruptions. Shortly after the ribbon-cutting in September, for example, the site was pummeled with 2 inches of rain in one hour that morning, but games proceeded as planned in the afternoon.

With this stay-dry ability, Alabama's mild temperatures and the white sand beaches of the Gulf of Mexico shoreline just minutes away, the Foley Sports Tourism Complex and adjoining entertainment center promise to draw athletes and their families on a year-round basis.

All of this will have been accomplished without spending upwards of \$1.5 million per field on artificial turf to take advantage of the claimed all-weather benefits or incurring the injury and health risks that have been associated with synthetic playing fields. Sand-capping Foley's 16 grass fields will let the games go on despite the weather, playing a pivotal role in the success of the project.

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