

white stuff. First, starting around mid-October, I paint my lines blue. This allows them to be visible if it snows. It also helps the lines show up better with the lower angle of the sun. Secondly, to remove heavy snow from the fields, we use a rubber-bladed plow to push the snow off the fields. Then we use a small backhoe to move the snow from the field sign and goal areas. We've not yet figured out what to do about the frozen ground."

Meredith develops and carries out the turf maintenance program. As an independent contractor, he reports directly to, and works closely with, Will Lunn, President of the National Soccer Hall of Fame. He also communicates regularly with the tournament director and event coordinator. He also has an open invitation to attend weekly staff meetings to brief others on issues relating to field conditions and to receive operating information regarding the rest of the facility. This interaction and open communication are extremely beneficial in allowing the entire program to function efficiently.

Meredith notes the Hall of Fame complex is a work in progress. He says, "We're constantly improving and upgrading the facility. Some of these improvements are maintenance 'tricks of the trade.' Once a month, we core aerate down the center section of the fields, covering a span as wide as the goal area. We drag mat the plugs back into the soil profile and overseed with 80 percent perennial ryegrass and 20 percent bluegrass, using a varying mix of cultivars to avoid creating a monostand. We'll use the core aerator in the goal mouth every couple weeks and drag the cores in, and topdress and overseed the goal mouth area weekly. This gradually creates a slight elevation or 'mounding' that eliminates puddling.

"Additions to the complex this spring," Meredith continues, "included the installation of poles and 40 decorative banners. The banners are all different colors with images of soccer balls placed at differing locations on each banner. This creates the illusion of the soccer balls bouncing along the banner route. We've also installed

black vinyl-coated chain link fencing, with the gates in appropriate spots for quick retrieval of the soccer balls."

The National Soccer Hall of Fame complex is the result of cooperative planning and communication, effective management, hard work, perseverance, and striving for the common goal

of producing an excellent soccer facility that allows athletes to play with confidence. It's the precise formula to earn Field of the Year honors.

Steve Trusty is Executive Director of the Sports Turf Managers Association (STMA), and Suz Trusty is STMA Communications Director.



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by Lesa Morey

Soccer Disney Style

The soccer fields at Disney's Wide World of Sports complex were designed to promote superior athletic performance, with just a touch of magic.

The best-known icon gracing the 200-acre Disney Wide World of Sports complex, in Lake Buena Vista, FL, may be its spectacular, nostalgic-themed ballpark. But the five multi-purpose soccer fields actually see some of the heaviest action—by players representing every level from world class athletes to amateur high schoolers.

When Disney set out to transform part of a cattle pasture into a group of soccer fields, the entertainment giant began in the typical Disney way—it used loads of professional advice, loads of money, and loads of dirt. The idea being to promote superior athletic performance.

From the get-go, Disney's overriding design goal was to provide its soccer players with a superior playing field that could inspire athletes to give the best performances of their lives, and yearn to return to play again.

"From the players' standpoint, we wanted that (personal best performance) to be part of the thrill—to be able to go home and say 'I can't believe the soccer field we just played on,'" says David Muenks, Director of Resorts and Facilities Development, and a member of Disney's famous creative team of designers and engineers, its Imagineers.

Disney's new soccer fields didn't just have to be good. They had to elicit a "Wow!" from the soccer players.

Reggie Williams, president of Disney's Sports Group, issued his orders to the Imagineers: find out who would be playing the fields, find out their expectations, and then exceed those expectations. In addition,



Disney's Wide World of Sports complex, located at Walt Disney World Resort in Lake Buena Vista, FL, is spread over 200 acres. The complex hosts more than 150 professional and amateur events each year in more than 30 sports.

tion, the concept they came up with had to accommodate a multitude of audiences—the athletes themselves, the thousands of spectators expected to line the fields, and the millions of television broadcast viewers watching international competitors from around the world.

A heady assignment, for sure. These weren't going to be your average fields. Even the Imagineers, with decades of award-winning park development experience behind them, had never before built sports fields, with their exacting guidelines. "We had no in-house expertise," concedes Muenks.

So, they went out and got what they needed. M.A. Mortinson, a Minnesota construction management firm that has built other big sports facilities, loaned its staff of experts, who served as an extension

of the Imagineers' team of construction managers. They brought in Orlando landscape architect Herbert Halback, and Dallas architect HKS.

The Toro Co., now the "official" turf and irrigation company of the Walt Disney World Resort, provided turf consultant Dr. James Watson. Another turf consultant, Murray Cook, pitched in too.

"It was critical to get the right people on the team," recalls Rob Hale, Senior Construction Manager, who plays soccer himself and was a big proponent of the soccer fields.

Key players traveled to examine other facilities. Auxiliary buildings, they knew, could be as creative as the Imagineers wanted. The playing fields had to be top-notch and exact, of course. But the turf also had to be



The five soccer fields at Disney's Wide World of Sports complex utilize Tifway 419 bermudagrass. The same turf crowns were used not only on all the complex's soccer and other athletic fields, but also on its non-playing surfaces.

capable of taking a beating under everyday use, for weeks at a time, and all the while look good to the all-seeing television cameras, which

can broadcast every week.

The designers knew the fields had to pull this all off in the face of

Central Florida's notorious afternoon downpours. The fields had to be capable of handling heavy water loads, and be ready for play in just 30 minutes, even after the occasional 8- to 10-inch cloudburst.

Fortunately, the old cow pasture proved to be an excellent site, with good soil conditions. Although much of Disney's extensive property holdings don't sit on the best-drained land, the soccer fields site straddles some deep upland soils—the remnants of ancient sand dunes and beaches that form the “ridge” running up and down the spine of peninsular Florida.

Although these granular soils are generally well-drained, they could also harbor a high water table. “We made the decision early on to address the potential drainage problem,” says Hale. “Anywhere from 3-6 feet of soil had to be trucked in, to raise the playing fields high enough above the native water table.”



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Knowing that flat fields don't drain well, they lasered a "virtually flat" field, giving just a half-degree slope to promote drainage. Just underneath the surface they applied a 10-inch-thick, custom-mixed layer of rootzone soil. Before any truckload of mix was dumped, Disney tested every load for consistency.

The rootzone mix of sand and Dakota peat had to be just right. "It was key for the rootzone soil to promote water drainage but still hold enough water and soil nutrients," notes Hale. Coming up with just the right balance proved to be tricky. "We wanted to keep the right amount of moisture in the rootzone," he adds, "so we wouldn't have to be irrigating a lot. Water conservation is important."

On the other hand, the fields had to be in prime shape in the morning following nighttime irrigation. The entire drainage system involved the rootzone mix, several feet of sand base, plus underground drains.

Holding it all together, of course, is the turf. The consultants agreed on the sprigging of Tifway 419 bermudagrass. The same turf crowns were used not only on all the complex's soccer and other athletic fields, but also on its non-playing surfaces.

Reliance on just the one turf variety not only ties the complex together visually, but helps with the overall turf maintenance schedule, while substantially reducing the risk of contaminating the turf with other varieties of grass, Hale points out.

The idea here is that "it looks like a sports field, no matter where you look," Muenks says. "It's quite a sight to stand on a high point and look out over a plane of green, tree-lined and manicured fields linked by walkways, with fieldhouses rising in the background."

The uniform look "creates a memory, really" says Muenks, who still marvels at the "sense of place" that's created by visitors who, upon leaving the parking

lot and becoming pedestrians, are directed to a grand set of steps. Crowds scaling these steps strikes Muenks as something like "a procession." At the top of the steps, visitors catch their first glimpse of the green-capped complex. At that point there is, he says, "a sense of arrival."

For the athletes, however, the proof is in the playing. The design of the soccer fields contributes to players competing at their highest-possible level, Hale says. Their placement and orientation, the fast-draining and healthy turf, and its spectator-friendly mobile seating—which can accommodate up to 10,000 fans at a time—give every athlete the best competitive advantage.

To Hale, the successful design of Disney's soccer fields boils down to three fundamental principles—identify your target audience, find out what you don't know and hire the best people possible to make the decisions.

Lesa Morey is a commercial horticultural writer based in Sebring, FL.



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Team Effort

Assembling the right team to build a new soccer complex is half the battle.

by Michael Oswald

The new Allen Creek Soccer Complex, a joint project between the City of Gainesville, GA, and Hall County, was built from Summer 1999 through Spring 2001. The nine-field facility—located in Gainesville, GA, about 40 miles Northeast of Atlanta—will be dedicated this month and play will begin this coming Fall. Once opened for play, youth soccer leagues and amateur adult soccer leagues will utilize the fields. Sports Turf Company, an athletic field construction and sod producing firm located in Whitesburg, GA, worked closely with the City of Gainesville, the architect, and several subcontractors to build the facility.

"The facility contains four big fields of 360x225 feet, and five smaller fields that measure 360x180 feet," notes Aaron McWhorter, president of Sports Turf Company. "One of the fields is a stadium that seats 2,000, while the other eight fields will have temporary bleachers with 200- to 400-person capacities."

McWhorter says construction was divided into two phases. The first phase involved clearing trees, heavy earth work, street curb and asphalt base installations, storm sewer work, erosion control, and building a well and a man-made lake for irrigation. In phase two, artificial lighting, landscaping, an irrigation system, a maintenance facility for field equipment, and three main buildings were installed. "One of the buildings has offices, concessions and restrooms in it," he relates. "The offices for this complex are going to be staffed full-time, plus there'll be a full-time field maintenance person with two part-time helpers. Both of the other two buildings contain only concession stands and restrooms."

Phase one was completed in Spring 2000, and phase two was just finished this past April. Sports Turf Company was the general contractor during phase two, but the firm subcontracted for paving, landscaping, buildings and lighting systems. Sports Turf built the irrigation system, laid the concrete, installed the root zone, and did the laser grading and sodding. Sod on the fields, which was grown and installed by Sports Turf Company, is TifSport Bermudagrass. "We know from past experience that this sod does very well in this region of the country, and in this type of application," McWhorter notes.

The root zone material for all the fields is 85% sand, and all fields are graded with a 1% slope. Though there are 16 acres of sod on the fields themselves, the total amount of sod installed (including field and non-field areas) was 1 million, 200,000 sq ft.

Choice

When asked how Sports Turf Company was selected for this complex, McWhorter explains that "The City of Gainesville pre-qualified sports field contractors in the area, then eliminated those that were not qualified, then asked the remaining companies to bid on the project. We came in as the low bidder, and were selected as the general contractor for the whole complex, as well as the sports field construction firm."



According to Aaron McWhorter, Georgia has the toughest erosion control regulations in the nation, and some of the tightest watering restrictions, both of which presented some special challenges during construction of Allen Creek Soccer Complex.

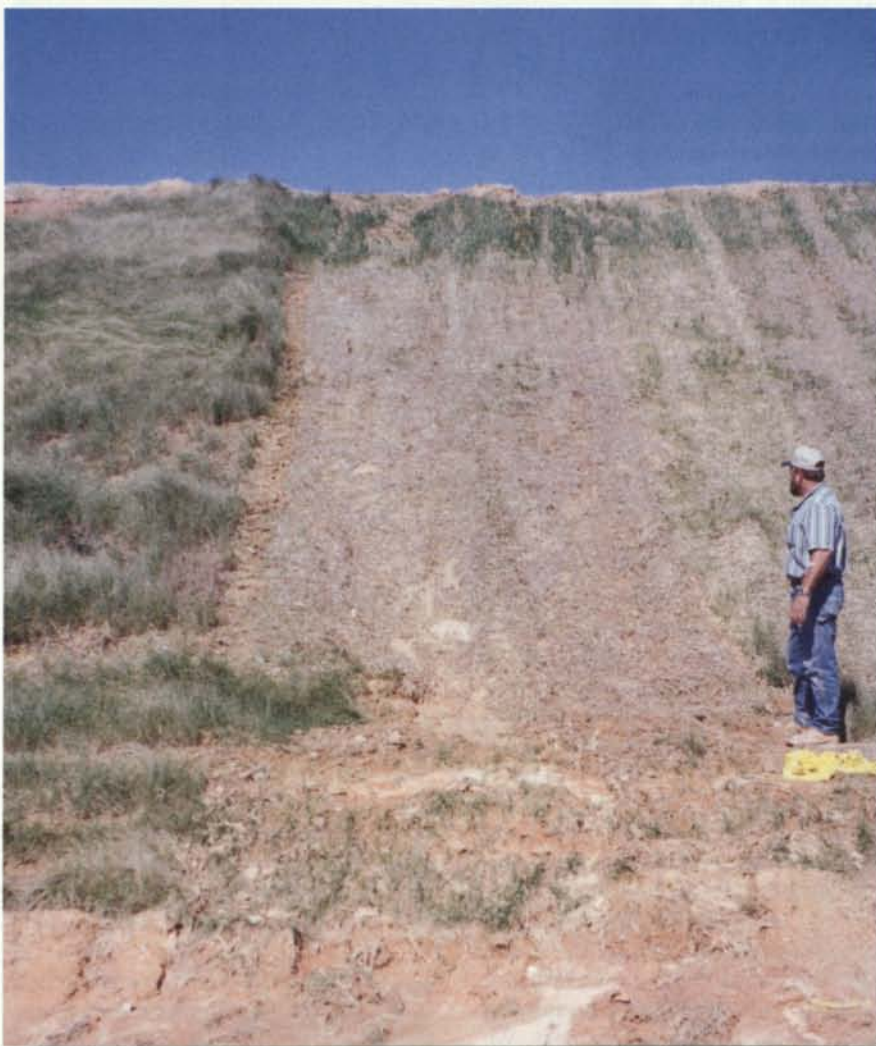
However, according to McWhorter, there are other qualities, such as experience, that made Sports Turf Company an attractive choice for Allen Creek. For instance, the company recently built a training facility for the NFL's Atlanta Falcons in Hall County, a complex that includes three outdoor football fields.

McWhorter says that building sports complexes is a different sort of animal than other types of construction. "The sequencing of the work is different than with other construction jobs," he explains. "Laying the sod is that all-important last step, sort of like putting new carpet in a newly built house."

"You wouldn't select a construction firm to build your family's new house that had never built houses before, right?," McWhorter continues. "When building sports facilities, it's all about the quality of the fields. It's not about the buildings, or the paving or the



Sports Turf Company subcontracted for paving, landscaping, buildings and lighting systems.



Severe elevation changes at the Allen Creek Soccer Complex site required thorough erosion management techniques, such as installing the right sod at the right slope on the hills between fields.

concession stands. Typical brick-and-mortar construction firms don't know this niche well enough."

Quality

"The design and construction of this new soccer complex is outstanding," McWhorter relates. "There are two key points that make Allen Creek great—the layout was well thought-out, and the focus was on the fields. Also, this is one of those rare municipal projects where they allocated enough money to make everything top-notch," he adds. "For example, the rootzone material alone cost around \$200,000."

McWhorter praises the architectural design firm—Moreland Altodelli & Associates, Gainesville, GA—for providing unusually easy access to the fields from the parking lots. "At most complexes," he relates, "there is one parking lot, and players and fans have to walk a long way to get to the right field. At Allen Creek, the parking lots, concessions and fields are interspersed so that getting to where you're going is simple."

The design firm came up with the layout of the complex, and worked closely with Sports Turf Company throughout the process to oversee any design modifications, and answer questions that came up along the way. "Every two weeks we'd hold a major construction meeting," McWhorter relates. "Meetings would include representatives from our company, the architectural design firm, each of the subcontractors, a city representative and a county representative. The meetings helped keep all parties well-informed about any issues that came up while work was underway."

Challenges

According to McWhorter, Georgia has the toughest erosion control regulations in the nation, and some of the tightest watering restrictions, both of which presented some special challenges during construction. "But these are challenges that we're accustomed to dealing with," he notes.

The design incorporated a detention pond to catch and release rainfall and eroded matter slowly, silt fences to capture erosion but permit water through, check dams for turbidity monitoring, and the installation of sod in all open areas to further control erosion.

"Turbidity restrictions require the installation of stream monitoring devices above and below the complex," McWhorter explains. "If there's rainfall, the site has to measure water turbidity within 45 minutes. The complex is allowed a certain downstream turbidity percentage increase when the measurements are taken, otherwise fines can be levied. Therefore, managing erosion was a critical issue for this project."

Knowing that watering restrictions could be a problem for a nine-field sports complex, the design included a man-made lake to feed the irrigation system. The firm also had an on-site well drilled which pumps water into the lake.

Also challenging were the severe elevation changes at the site. "The complex goes through about 130 feet of elevation change from one end to the other," McWhorter explains. "The fields are stepped, not all on the same level. This elevation change made it even more important that we manage erosion carefully, in part, by installing the right sod at the right slope on the hills between fields."

Tips

When asked if he has any suggestions for complex owners, design firms, sports turf managers, or others when it comes to building a new field, McWhorter says it's important to "keep the lines of communication open at all times, and to get the right team put together to begin with. For Allen Creek, the city had a representative on site during the entire construction process to answer questions. No matter how much planning you do, questions are inevitably going to come up."

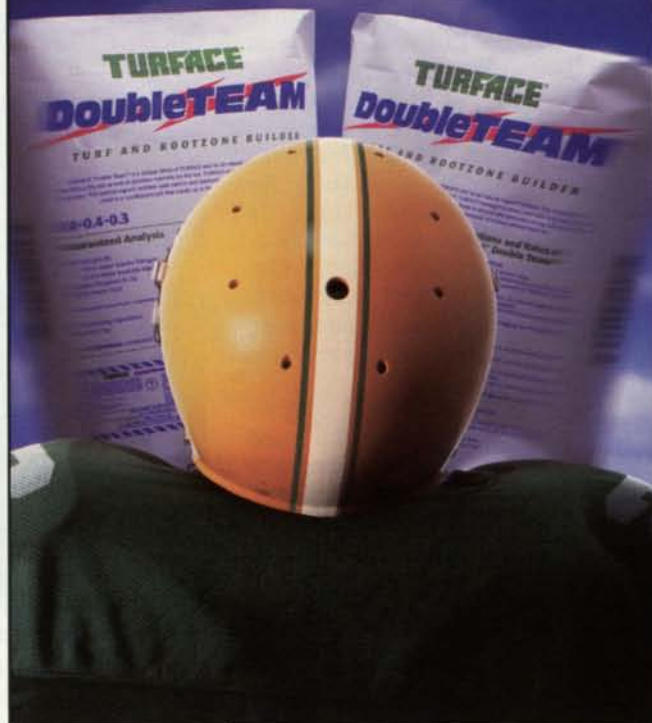
McWhorter says having the right players in place is the most important step sports field owners can take. "If any member of the team is not experienced enough, or not on the same page, you're not going to meet the objectives of the project," he says. "The complex owner and the architectural firm have to select the right contractors and subcontractors. This means pre-qualifying the companies before they even reach the bidding process. Obviously, you want to maximize your money, but you're not necessarily required to take the lowest bid."

McWhorter refers to a new Georgia law (House Bill 1079), which has recently been adopted to allow governmental entities to accept bids or proposals. Under this updated Georgia law, giving the job to the lowest bidder is not always required. Other states may make similar allowances.

"For instance, we recently bid against a number of other firms for a high school track and football field," McWhorter relates. "The city threw out every bid because they were all too high. The city then selected the three most experienced firms, out of all of the firms that had bid, and said 'we have \$350,000 to spend, now let's see a proposal from each of you showing what you can do with that amount.' The city selected us for the job, but as you can see it was not done on a lowest-bid basis."

"If you make good decisions from the outset about who your construction team is made up of," McWhorter concludes, "the best fields for your dollar will be the end result." ■

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by Steve and Suz Trusty

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You can see that vision up close and personal in Peoria, AZ, thanks to the team of Mike Gillispie, Agriculture Education Instructor for the Peoria Unified High School District, and Chris Calcaterra, Baseball Supervisor for the City of Peoria Sports Complex.

Gillispie says, "Sixteen years ago, our area concentrated on the traditional farm production areas of agriculture. But as the population grew, more than doubling to over 104,000 in the last ten years, we became more urban and suburban, and the job market also changed focus. Our agricultural marketplace now has four major areas of concentration besides farming: turf, primarily sports turf and golf course management; landscape maintenance and installation; nursery management; and biotechnology.

"We've aligned our program's courses to the competencies of the local colleges," Gillispie notes. "Students can earn up to 24 college credit hours at Phoenix College through our program. Arizona State University also accepts these college credits from Phoenix College. Students can do internships, ranging from 50 to 300 hours, in the areas of concentration or in community service.

"Our classes run in 90-minute seg-



The baseball infield at Peoria, AZ, High School is maintained by Mike Gillispie's students.

ments," Gillispie continues. "Each is organized on a crew basis, with crew leaders, and each class has a foreman. This allows us to dig into projects in a work environment. The foreman and crew chief must make sure all repairs are made and all equipment and materials are put away properly by the end of class."

Gillispie teaches the turf courses, horticultural mechanics, and welding. One of the equipment sections of his shop (pictured, top left) is stocked with the same machines used on today's golf courses and sports fields. His students maintain the infield of the school's baseball field, and worked on the laser leveling and renovation of the football field.

A few of the best students move up to the big leagues with internships, and frequently, longer-term, seasonal jobs, at the sports complex of which San Diego Padres outfielder, Tony Gwynn, has said, "Training in

Arizona at the Peoria Sports Complex gives our team an edge and helps to prepare us for the challenges of the upcoming season."

The 145-acre Peoria Sports Complex was the only two-team baseball spring training facility until 1998. Since 1994, it's been the spring training home to the Seattle Mariners and San Diego Padres, both teams having signed a 20-year lease. The \$34 million complex features a stadium that accommodates 11,000 for baseball and up to 20,000 for concerts. Each team has its own executive office, training facility and 40,000-sq-ft clubhouse. There are 13 practice fields on site, 6-1/2 for each team.

Calcaterra says, "Our fields are used over 320 days a year. Once the Padres and Mariners wrap up the Cactus League Spring Training, the other groups move in. For baseball, the complex hosts Extended Spring Training, Summer Rookie League,

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