Hersheypark Stadium

Earns STMA Field of the Year Award

Dedication to excellence earned the STMA 2000 Professional Soccer Field of the Year honors for Hersheypark Stadium. The stadium is part of the Hersheypark amusement park in Hershey, PA, which features more than 60 rides and attractions on approximately 110 acres. With the stadium seating 16,000 for sporting events and 30,000 for concerts, the site has become a major entertainment center.

Both facilities are owned and operated by the Hershey Entertainment and Resort Company (HERCO). HERCO also owns the Hershey Wildcats, a men's professional soccer team that is a member of the A League Professional Soccer League. The stadium is their home field.

Hersheypark Stadium was built as part of President Roosevelt's public works program and opened in 1939. The native soil field was reconstructed to a sand-based system in 1996. John Tshudy, director of buildings and grounds, was instrumental in researching and developing the reconstruction project with the focus on providing excellent conditions for all field users of a multiple-event facility. Tshudy asked Steve LeGros to transfer from the landscaping division of the amusement park to the position of Stadium Turf Specialist to oversee the new field. LeGros has adopted, and is continually fine-tuning, an aggressive, proactive maintenance program centered on achieving that standard of excellence.

Packed schedule

LeGros says, "The Wildcats use the field from April until September for both practices and home games. In 2000, the team played 15 home games and conducted 17 practice sessions on this field. But that constitutes only a small percentage of the total field events held at Hersheypark Stadium during the year."

In the fall, Hershey High School and Lower Dauphin High School both use Hersheypark Stadium as the home field for their football games. The field also is used for numerous district and regional playoff games for soccer and football. It hosts the annual Big 33 Classic all-star football game between Pennsylvania and Ohio post high school, pre-college players. The season concludes in early December with the Pennsylvania Interscholastic Athletic Association (PIAA) Football Championships that put four games on the field in a 2-day period.

In April of 2000, the stadium hosted the US Olympic Soccer qualifying tournament. That brought six teams, including the US and Mexico, into competition for two spots in the Summer Olympics. Ten games were played on the field in a 5-day period, concluding with the championship game between the US and Guatemala. Four women's Gold

Cup games also were played there during a May and June schedule that brought 43 events to the field. Then there are the concerts that fill every possible open slot in this already packed schedule. High intensity, the phrase LeGros uses to describe it, is an obvious understatement.

He says, "On field events from late April through early December have averaged between 140 and 150 per year since the 1996 reconstruction. From May 1 to August 1, 2001, the use has been the equivalent of an on-field event every 1-1/2 days."

Field reconstruction

The field reconstruction was designed to enable the heavy use schedule. The original heavy clay, native soil was excavated to 2-feet. A concrete field-level curb was added between the playing field and the existing asphalt track. A sub-surface drainage network of 4-in. perforated pipe was installed within the crushed stone subgrade layer. This was topped by an 18-in. layer of USGA spec profile consisting of 75 percent sand, 15 percent peat and 10 percent top soil. The in-ground irrigation system provides full field coverage with Toro 640 pop-up heads. Big roll Kentucky bluegrass sod formed the playing surface for the 1996 season.

"The field was put to the test by torrential downpours during that first season," notes LeGros. "Because of the sand based system we were able to play when games at other local fields were cancelled."

In March of 1997, the surface was converted to the Hummer Grasstile System. The tiles are developed in 7-ft. by 7-ft. frames containing 2-1/2 inches of a mixture of sand and Dupont carpet fibers planted with the desired turf. For Hersheypark Stadium, this was a blend of Kentucky bluegrass cultivars. Once the tiles are mature enough to be harvested, they are lifted out of the tray and placed on top of the field's existing soil profile with the tile joints staggered.

LeGros says, "The field was designed for the tile system with the installation date based on the maturity of the tiles. We selected the system to have the flexibility to remove and replace tiles according to field wear and to gain the added stability of the carpet fiber in the sand base. Once the system was installed, we found keeping ahead of the events with our aggressive aerification and overseeding program combined with nutrient 'spoon-feeding' allowed us to avoid moving tiles in-season. We doubled the 1996 event schedule in 1997 and the field held up well.

"By late November, day time temperatures here are dropping below 60 degrees and we're getting frost at night. With football the major sport during that period, we will have heavy wear from hash mark to hash mark between the 20 yard lines. But, when we ask the players about the footing after each event, they report it's great.

"Over time the tile sections have grown in to become one field. A couple of times, we have needed to cut out the goal mouth areas and replace them. We've sawed out the worn areas in 7-foot sections and replaced them with the tiles so we have continuity within our soil profile and turf ready for play."

Handling those concerts

It's not uncommon for the stadium to host soccer, football and a concert, in any sequence, back to back to back three or four times a season. For example, this year, the Wildcats played Montreal in a July 20 night game. The Big 33 Football Classic took the field the next night, and a Bon Jovi played July 22, followed by Destiny's Child on July 24.

To help facilitate this multi-event scheduling, a per-

Hersheypark Stadium 2001 Maintenance and Fertilization Program

MARCH – MAY
- Take soil sample; analyze results
- Monitor soil temperature
- Mow as needed at 1-1/2-inch height of cut
- Aerify with shatter tines or solid tines every 14 days
- Seed before each event with Kentucky bluegrass
- Apply slow release granular fertilizer 18-24-12 at 1-1/2 lbs. of nitrogen (N) per 1,000 square feet
- Apply 0-0-50 at 1/2 lbs. of potassium (K) per 1,000 square feet
- Apply fungicide according to IPM practices as weather dictates

JUNE
- Monitor weeds; spot spray as needed according to IPM practices
- Aerify with shatter tines or solid tines every 10 days
- Monitor moisture levels; irrigate as needed
- Spoon feed biostimulents 20-20-20 as turf needs dictate
- Prepare for soccer, gradually move mowing height of cut to 1-1/8-inch
- Mow every other day at 1-1/8-inch height of cut
- Aerify with hollow tines in late June; harvest the cores
- Seed with 100 lbs. of Kentucky bluegrass

JULY
- Aerify with solid tines if weather permits
- Irrigate deeply and infrequently as turf needs dictate
- Spoon feed biostimulents 10-5-40 as turf needs dictate
- Apply granular slow release fertilizer 5-10-30 at 1/2 lbs. of K per 1,000 square feet
- Mow every other day at 1-1/4-inch height of cut
- Make preventive fungicide applications every 14 – 21 days
- Seed before each event with Kentucky bluegrass

AUGUST
- Aerify with shatter tines or solid tines
- Irrigate deeply and infrequently as turf needs dictate
- Spoon feed biostimulents 10-5-40 every 14 days
- Apply fungicide according to IPM practices as weather dictates
- Seed before each event with Kentucky bluegrass
- Take soil sample; analyze results

SEPTEMBER
- Aerify with shatter tines or solid tines
- Spoon feed biostimulents 10-5-40 every 14 days
- Prepare for football, gradually move mowing height of cut to 1-1/2-inch
- Mow at 1-1/2-inch height of cut
- Seed center of field with perennial ryegrass as needed
- Apply fungicide according to IPM practices as weather dictates

OCTOBER
- Aerify with shatter tines or solid tines
- Apply granular fertilizer 9-18-17 at 1/2 lbs. of phosphorous (P) per 1,000 square feet
- Spoon feed biostimulents 20-20-20 every 10 days
- Mow at 1-1/2-inch height of cut
- Seed center of field with perennial ryegrass as needed
- Cover field with turf blankets when temperature drops below 50 degrees F

NOVEMBER
- Aerify with shatter tines or solid tines
- Apply granular fertilizer 18-24-12 at 1/2 lbs. of P per 1,000 square feet
- Seed center of field with perennial ryegrass as needed
- Cover field with turf blankets when temperature drops below 50 degrees F

DECEMBER
- Aerify with hollow tines in two directions; harvest the cores
- Seed with 200 lbs of Kentucky bluegrass
- Apply 1/8-inch layer of sand topdressing
- Apply starter fertilizer with percentages of N-P-K matched to turf needs
- Apply preventive fungicide for snow mold
- Cover field with turf blankets

Hersheypark Stadium is owned by the Hershey Entertainment and Resort Co., which also owns the Hershey Wildcats, a men's soccer team that is a member of the A League Professional Soccer League.

manent stage was installed in 1997, at the north end of the field, replacing the previous seasonal stage. The new stage does offer flexibility since the uprights are attached to the footers with anchor bolts. This allowed the Hersheypark staff to move their stage and set the larger N'SYNC stage starting from the regular end-of-field position to provide the maximum on-field seating for that concert. The stadium's stage also is used during many sporting events as a premium seating area and refreshment station for VIPs or corporate sponsors.

Field conversions are a well-orchestrated performance. LeGros says, "In most instances, the field is covered and uncovered within a 24- to 36-hour period to minimize damage. Teardown always begins immediately at the close of a concert. If necessary, we can turn the whole stadium from a concert venue to a sports venue in approximately 19 hours. It requires coordination between all the different departments, with each performing their tasks in sequence. During teardown, we'll have a team of 50 people on the field alone. I can't say enough about the staff here. Many of the Hersheypark seasonal employees work on the teardown and setup of stadium events. The cooperation between departments, and the dedication and attention to detail are outstanding. That's what makes the whole thing work."

A lot of planning and ingenuity come into play in the setups, too. LeGros says, "Prior to a concert we mow the field in three different directions to minimize damage when the field is covered. We also control the moisture as much as possible, trying to dry down the top 1 1/2 inches of the profile. If it's too wet, compaction is greater and the turf transpiration beneath the cover can 'cook' the grass. We generally cover the field the night before the concert when the temperatures are cooler.

"Previously, we covered the field with Porta Floor alone. We found it protected the crown but we'd have some scorch on the tip of the leaf tissue. That scorch remained for 4 or 5 days until mowing gradually removed it. This year we've added an under layer of Enkamat to give the turf a small air cushion and eliminate the tip burn. We'll place the Enkamat running north to south and the Porta Floor on top of it, running east to west. The portable mixing tower is rolled into place. Then we set up the 17,000 chairs in rows with 8-ft. aisles. All the rows must be marked and the chairs numbered."

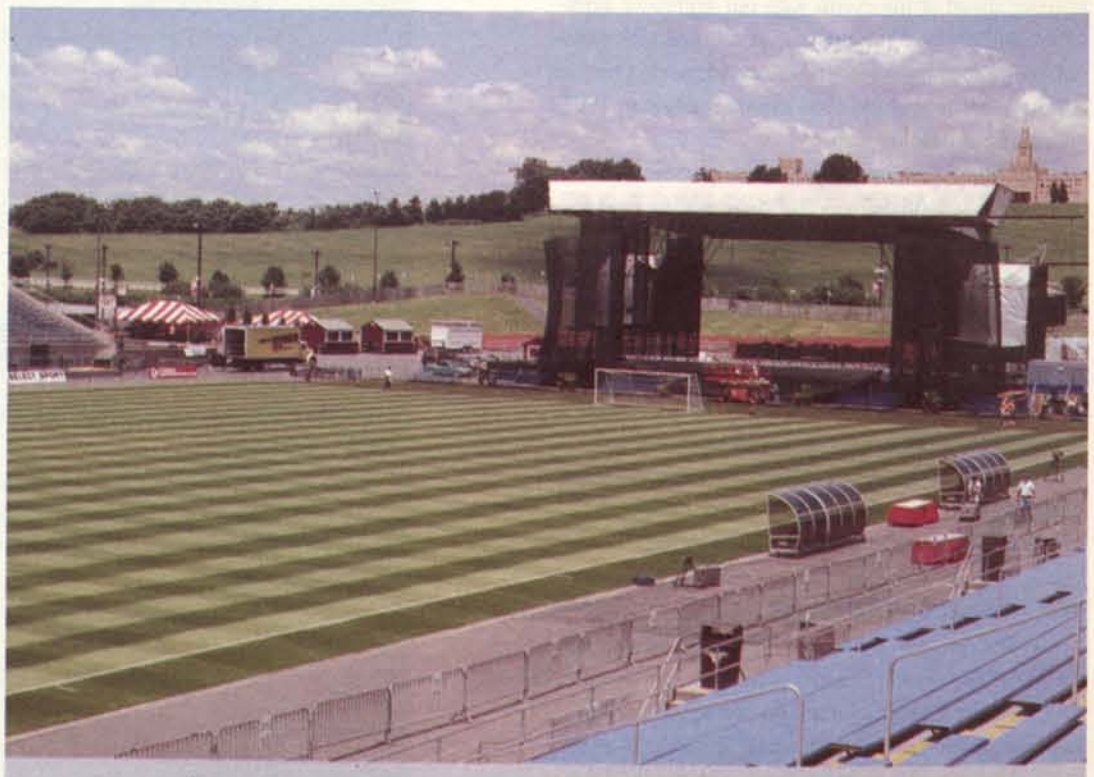
Tshudy designed the portable tower, a unique concert facilitation feature. LeGros says, "John drew on his ingenuity and farm background to develop a sound mixing and lighting tower that would be quick and easy to equip and put in place without damaging the field. He took two flatbed farm wagons and put them side by side to create a doublewide bed. The tongues of the two wagons form a triangle that can be attached to one hitch on the back of a tractor. The three-story tower was built on top of these flatbeds.

"We place a plywood road to move the tower to and from the stage to its on-field location, though the giant flotation tires give it a very low footprint, just 3.5 psi. The concert setup personnel drive their truck to the back of the stage, roll their sound and lighting equipment to the tower at the front of the stage, and put it in place on the tower. We then move the tower into position over the plywood, remove the plywood and put a crowd barrier around the tower. The same thing happens in reverse during teardown. The tower wagon can be pulled to the parking lot area and secured during sports events."

Fine-tuning the maintenance program

LeGros thrives on orchestrating things. Perhaps that comes from his college background as a music and drama major. He's orchestrated his own career, moving from an assistant golf pro to the maintenance side of the green industry spurred by his positive reaction to his 3 weeks of greenskeeping experience in the PGA golf pro apprenticeship program. He plotted his course from a crew member, to assistant golf course superintendent, to owner of a landscaping business, to turf and sports field specialist for the parks and recreation department, all in the Orlando area. Seeking a site with four season weather patterns, he came to the Hershey area and began working in the Hershey Nursery landscape maintenance department of the amusement park. Hersheypark Stadium was just the place to apply his green industry background and organizational skills.

One way that organizational ability is put to use is in the three separate logs he uses to record every detail pertinent to the field maintenance program. One log is for daily weather conditions, one for daily events, and one for tracking all applications made to the field. He compares the information contained in the three logs to analyze results



To help facilitate multi-event scheduling, a permanent stage was installed at the north end of the field; it offers flexibility since the uprights are attached to the footers with anchor bolts.

and fine-tune the program. He says, "The logs document the situation when you need to respond to an inquiry from staff, management, a governmental agency or the public. But primarily, they provide a multitude of benefits in developing our maintenance plans. We can avoid mistakes and make adjustments to produce better results when the same circumstances occur.

"Since the installation of the new field, we've constantly adjusted the maintenance program to become proactive, rather than reactive. The logs are extremely helpful in this process. If you wait to react to field damage, you're always focusing on the recovery and the field declines because you're never ahead of the game. So we're doing things today to prepare the field for what will happen 3 weeks from now. We want the field to go into every event in the best possible condition for that event."

One example of this fine-tuning is the overseeding program. LeGros strives to keep the bluegrass content of the field near 100 percent. He begins overseeding with a bluegrass blend in early spring and continues throughout the season. As temperatures cool, in October, November, and December, he has, and will continue to, add perennial ryegrass to the overseeding mix for the center of the field. In previous years, at the end of December, he's replaced tiles to repair worn areas. These practices have allowed him to retain a 92 to 95 percent bluegrass stand.

In 2001, he's added Princeton 105 to his three-cultivar bluegrass blend and is overseeding with approximately 25 pounds of seed in key areas before every event. More seed may be applied immediately after a game to fall into the cleat marks prior to irrigation. The field is also cultivated with an Airway aerifier or with solid tines at least once, and sometime twice, a month. LeGros says, "This cuts the rhizomes promoting better root development and increases the oxygen exchange and moisture penetration for deeper rooting. We also irrigate deeply and less frequently to encourage deeper rooting."

In December of 2000, rather than replacing tiles, the field was aerated in two directions with hollow tines, the cores harvested, the field overseeded heavily with Kentucky bluegrass and topdressed with the same sand mix as the soil profile. Fertilizer was applied and the field covered with a grow blanket. Monitoring began in March, with the grow blanket removed when temperatures allowed and replaced as temperatures cooled. Biostimulants and urea were applied to strengthen the turf and promote growth. By the second week in May, turf cover was approximately 80 percent and was nearly 100 percent by the start of the playing season. These practices, combined with the aggressive overseeding program and the other continually adjusted maintenance practices, have resulted in approximately 98 percent turf cover in early August, after 43 on-field events.

Putting it all together

The program all comes together with LeGros and an assistant as the total full-time maintenance staff for the Hersheypark Stadium field. An intern joins them for 3 months, May through July, of each year. To accomplish all that needs to be done, and keep fine-tuning to a higher level, LeGros is always seeking ways to make the tasks easier, more efficient and more cost effective. LeGros says, "Hersheypark management is very supportive of our programs and John Tshudy is an excellent supervisor. It's also motivating to see Hersheypark Stadium filled with people enjoying the results of the standards we strive to maintain. I try to use everything on my palette to paint the best possible picture for our field." **ST**