



# Louisville's Slugger Field

## earns 2002 Field of the Year

### Former train station site sits on Ohio River

BY SUZ TRUSTY

**S**lugger Field, the home of the Louisville Bats, in Louisville, KY, earned the 2002 Sports Turf Managers Association (STMA) Baseball Field of the Year Award in the Professional division. Thomas R. Nielsen, Head Sports Turf Manager, and his crew keep a Bluegrass field thriving in the middle of the transition zone despite climate extremes and an average of more than 100 on-field events each year.

The 13,300 seat Louisville Slugger Field opened in early April 2000. Nielsen joined the organization in October 1999. He says, "The stadium was in the very beginning stages, at the concrete part of the construction. The old train station formerly at the site had been torn down and the front saved to incorporate into the completed design. The preliminary field specs had been developed, but the subgrade had not yet been set. Having the sports turf manager on site at this point, or even earlier, is a great advantage for all involved. I was able to make changes and additions without extensive change orders or construction-overrun costs. These have had a positive impact on the overall field maintenance program both by improving efficiency and cutting long-term expenses."

Nielsen's input ranged from the big picture to the small details. For example, the organization gave him the opportunity to select the type of infield clay, conditioner, and warning track material he wanted to fit the anticipated field conditions. He was able to add strategically placed storage bins for bulk materials and an area for an on-site sod farm. He also developed a detailed layout of the construction details, now plotted on a site map, and posted in the maintenance office where it is easily accessible to all staff members.

Because of the stadium's proximity to the Ohio River, much of the construction incorporates a floodwall. The tunnel that houses the entry gate for the field is actually a floodwall. There are 40 aluminum sections that attach to three bolts braced in the concrete to complete the seal if flooding is anticipated. Nielsen has assembled these sections, meticulously marking each one



for dry side or wet side and where it fits within the overall panel. With these detailed instructions, putting the panel in place correctly takes approximately an hour, and it will be watertight.

A geotextile layer separates the old subgrade from the new subgrade. Four- and six-inch drain tiles 20 feet on center run through the 6-inch gravel layer and connect into a central tile below the center field gate to the city sewer system. The central tile is equipped with flapper-style backflow valve to prevent sewage backup onto the field during a flooding situation.

Excess water within the stadium could then be pumped over the wall. The gravel layer is topped with 8 inches of a 90 percent sand and 10 percent peat mix.

The field was sodded a blend of three Kentucky bluegrass varieties—Ram, Georgetown and 1757—grown on the same sand/peat base. Sodding took place during the winter and in three stages within the period of a week to accommodate ongoing construction. Nielsen notes, “The sod laid in the first two stages was able to draw some moisture from the soil profile. Temperatures had dropped considerably before the last stage was installed. Because the irrigation system wasn’t yet in place, we called in the city fire department to irrigate later in the process when the turf’s need for moisture became critical.”

The current irrigation system consists of 34 Hunter I-20, 46 I-40 and 9 I-44 irrigation heads for a total of 89 heads in 13 zones, including the infield clay area. Nielsen says, “We added irrigation for the infield clay and the grass berm after the initial installation. The irrigation for the outside landscaping is operated with three separate control boxes. The field irrigation system can be controlled by a control panel or by remote control. I manually adjust irrigation run times based upon the daily use of a hand-held soil moisture sensor. In between irrigation cycles, I water by hand. There are eight quick couplers positioned around the field so the entire field can be watered with a 130-foot hose.

“We use the timer mainly for overnight irrigation. Generally, we’ll irrigate during the day and turn the system on with the remote to control moisture levels more precisely. I will use the irrigation system to water the clay when it can coincide with the regular turf irrigation. When the team is out, I’ll irrigate the clay

to the point of puddling, then monitor it as it dries down to keep the moisture where I want it. This saves valuable crew time. Hand watering takes up to 3 hours, while the system can do it in 15 minutes or less.”

Nielsen notes the construction process is always a learning curve. One element that takes cooperation is working out the details of when the sports turf manager has access to the field for maintenance without conflicting with the periods during which the construction companies involved are contracted for

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## Field of the Year

field care. He says, "We needed to negotiate for permission to work the clay areas and begin the mowing program to make sure we didn't alter the terms or reduce any liability or responsibility issues within the contracts. Communication between the construction contractors and me was vital. For example, when the concrete for the entry area of the stadium was poured, it required 10 to 12 days to cure. By that point, the field was basically in place. I needed to move the maintenance equipment inside the stadium walls and store it on the warning track during this period in order to keep up the maintenance program."

"By the April opening, the field work was completed. There were a couple areas in the stands that needed some work. Our maintenance office and garage area took another 3 months to complete. There had been a few areas of turf around the edges that had been affected by the lack of winter moisture and hadn't snapped back to the level of the rest of the field. I had overseeded them with perennial ryegrass earlier in the spring, the only time I've used any on the field. I'm still working at eliminating those patches. In retrospect, I'd have painted those spots green for our opener and babied the bluegrass back into top shape."

Once the season opened, dealing with the real world conditions kicked in.



Four of Nielsen's former assistants now have the top job at minor league fields. Mentoring is high on his list of priorities.

Louisville winter temperatures can drop to zero degrees, with either wet or dry conditions. Summer temperatures can hover in the high 90-degree range for weeks with humidity nearing the 100 percent mark.

A.J. Powell, Jr., Extension Turf Specialist for the University of Kentucky notes, "The most amazing part of the success of this field has been that I never thought it could be done at this location. In fact, I told Tom Nielsen that this location might be the most difficult place in the entire country to grow Kentucky bluegrass turf. The field is located behind a floodwall of the Ohio River, and in downtown Louisville. Temperature inversions, high humidity, and very stagnant air are most common at this location. Additionally, Kentucky bluegrass may be the most susceptible grass under these conditions to several devastating diseases. Obviously, Mr. Nielsen has expertly managed this field."

Nielsen has developed an aggressive maintenance program to make this happen, including a preventive approach to turf disease issues. Conditions are monitored several times each day. His log of product applications also includes any unusual temperatures

or other related weather conditions, how often the tarp is used, and any impacting field use situations.

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He says, "There is no ideal grass for the transition zone. You make a choice and then make it work. With our Bluegrass field, I work with different varieties to limit susceptibility. I've added quite a bit of Midnight to the field in overseeding each year. At some point, I'll probably want to replace the turf with all new varieties taking the best of what's available. With the disease pressure my most difficult challenge; water management is the most important aspect of the overall maintenance program. In 2002, we had nearly 2 months solid of 90-plus degrees and high humidity. There were just a few areas where the turf was a little thin and stressed, but only our crew was aware of those spots. We know there will be times when things don't look the best, but we want to keep those as few and far between as possible."

These results were achieved even though Louisville Slugger Field played host to those 100 events between March 30 and October 12, 2002. Along with the 72 home games of the Louisville Bats, a Triple A affiliate of the Cincinnati Reds, there were eight college and high school games, the Bats team workouts, six days of clinics/try-out camps, four privately sponsored batting practices, a cheerleading competition, a 2-day concert, two celebrity softball games, one spring training game featuring the Reds vs. the Baltimore Orioles, three kids' campouts on the field, each of which featured tents, a 5K run and two pre-game baseball clinics.

Nielsen's staff consists of a full-time assistant, three full-time seasonal employees, and one game day employee. He credits the following for their assistance in earning the Field of the Year honors: Brad Smith, Pete Lockwood, Ray Sayre, Andy Carden, Kyle Smith, Mark Piercy, Sonny Collins, and Erik Hagen. He also has a crew of four part-time employees who take care of the extensive landscaping surrounding the stadium. He's adopted some innovative measures to make this all work.

The outside landscape crew has a trailer loaded with all the equipment and supplies they need for maintenance. That simple step eliminates the time lost going into the stadium maintenance area for materials. The cart is



The crew left to right: Pete Lockwood, Tom Nielsen, Brad Smith, Kyle Smith, and Ray Sayre. Crewman Andy Carden is not pictured.

restocked as needed after each work session. Nielsen plans to develop even more extensive plantings and flowerbeds within the next couple years.

The second season at the field, the crew took on the task of adding more drainage in the warning track. This took major excavation at each spot to install 4-inch pipe from an inch below the warning track surface to the connection point with the sub-surface drainage tiles. The original drains were set 6 inches below the warning track surface. The crew also extended them to within 1 inch of the surface. There are now 35 drains spaced around the warning track, each one equipped with a short whisker pull on the drain's

valve box cover to allow quick and easy access.

He's also experimented with raising and lowering the turf height of cut, and with keeping it at one level throughout the season. He's determined the plant strength and vigor is greater and sheering is reduced with keeping the same height of cut throughout the season.

One of the greatest time and money savers is the use of fans to float the tarps. Nielsen says, "We originally purchased two large oscillating fans to create air movement around home plate and the apron. During the second season here, we started experimenting with the fans and the tarp. We've now removed the oscillators and mounted the fans on wheels so they can be maneuvered more easily and set them at the height and angle that fit our needs. With the tarp pulled tight, we position the fans at the first and third base sides. When conditions are windy or the field is saturated, we anchor the corners of the tarp with equipment as well as the pins.

"The fans actually float the tarp above the surface of the field and keep the air circulating beneath it. Rain drips off the tarp as it falls, rather than forming puddles on top of it. Occasionally, if rainfall is heavy, we need to consolidate the water on the surface toward the back of the tarp and squeegee it off. The turf doesn't suffer from the suctioning effect of the tarp on the grass. We have the standard 170-foot by 170-foot tarp. By using the fans, we've found we can remove the tarp with a four or five person team, rather than 12 to 14. We

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# Maintenance Program- Louisville Slugger Field

### Fertilization (Granular)

- Magnesium - twice in the spring, twice in the fall
- Sulfate of potash - twice in the spring, twice in the fall
- 12-3-8 Organic - once in the spring, once in the fall

### Fertilization (Liquid)

- Bi-weekly program - carbohydrates, complete amino acids, mature proteins,
- Micronutrients, biostimulants, 8 % Calcium, 20 % soluble potash, and
- 18-0-3 or 4-4-16
- As needed - 12-4-5.25
- Once a month during the active growing season - chelated calcium, liquid manganese, dethatcher, liquid humic acid
- Spring and fall - 10-45-8 (auxiliary nutrient N-P-K if needed)

### Weed Control

- MSMA post-emergent for grassy weeds
- 18-4-10 with pre-emergent herbicide (when soil temperature reaches 55 degrees)
- Postemergent for broadleaf weeds

### Fungicide

- Preventive applications March through October, curative applications when disease is present - fungicides used vary with season, matched to degree of potential susceptibility and products rotated to reduce possibilities of resistance

### Insecticide

- Preventive - June 1 and August 30 - as needed if insects present

### Wetting Agent

- Used to aid water efficient for irrigation and syringing

### Mowing

- Height of cut maintained at 1-1/4-inch all season
- Frequency - every day when team home, every other day when team on the road

### Aerification

- Hollow tine - once in spring, twice in fall, if possible - drag in cores and top dress 1/16-inch
- Solid tine - each month during playing season - topdressing combined, if workable



### Infield, Mound and Plate Maintenance

- Till infield 6-inches deep in spring and midway through the season. Float to level the infield, roll with 1-ton roller
- Compact infield with 1-ton roller every other day when games are being played
- Cover with 1/4-inch soil conditioner
- Water clay deeply to keep clay moist
- Screen infield with field rake for pre-game and post-game grooming
- 5th inning drag using 4-2-foot by 8-foot stiff mat drags
- Nail drag infield during season as needed
- Patch mounds and plates daily with clay

### Lip Prevention

- Rake and sweep out edges after each game
- Blow out edges with hose after each home stand
- Edge field every third day

### Winter Maintenance

- December - cover infield and aprons with turf blankets
- Blow out irrigation system
- Apply fungicide
- Service and repair equipment

### Miscellaneous

- Take soil test three times per year
- Conduct tissue test twice per year
- Overseed in fall using 400 pounds Midnight bluegrass seed
- Pre-germinate seed during season for use as needed - varieties used: Ram, Georgetown, 1757 and Midnight



can keep the tarp in place until just before the start of the game, quickly remove it, and have an excellent playing surface.

"We also use the fans when the weather conditions are especially hot and humid and the air is stagnant. We position one of them in the middle of the apron to create a river of air. The air stream pulls and pushes the surrounding air into a flowing pattern creating the air movement that helps reduce disease susceptibility. Our initial cost for the fans was around \$1,000 each. That has paid for itself many times over."

It's obvious that Nielsen is always looking for a challenge and his background had prepared him for the unique ones in Louisville. He grew up in Franksville, WI, where his parents had 3 1/2 acres of land, including the neighborhood pickup game baseball field. Though he'd always loved baseball, he knew his talents wouldn't make it a career option. He was in the process of studying police science when he discovered that working on a baseball field could be a career, not just a summer job. He changed his major and earned an Associate Degree in Horticulture from Gateway College in Kenosha. He worked for the Milwaukee Brewers at County Stadium for 3 1/2 years, traveling to spring training with the team and working with George Toma there. He then took a position with Jacobsen, testing prototype mowers on golf courses. He worked for the Florida Marlins for one spring training session. Then he moved to the head position with the Eugene Emeralds in Oregon for 3 years. He next accepted the head position with the Chattanooga Lookouts.

Nielsen says, "I had started discussion with Louisville before heading for Chattanooga. I'd worked with all types of turf, Bermudagrass in Chattanooga, overseeded Bermudagrass in Florida, Perennial ryegrass and poa in Eugene, and bluegrass and ryegrass in Milwaukee, to gain as much experience as possible. I'd also been helping with the Lexington Legends field when Erik Hagen was working with the construction there, and was aware of many of the things he did to stop problems from happening during the process. I was really excit-

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ed about the opportunity to tackle the construction and weather-related challenges in Louisville.

"Scott Shoemaker, director of stadium operations, came to Chattanooga to see my work there and to interview me. When the job offer was extended, I was pleased to accept it. The working relationship here has been everything anticipated and more. There's great cooperation throughout the organization. I have input on field

use situations and my requests are respected. I can't say enough about how great everyone is to work with. I also give credit to my wife, Anne, for all her support and her willingness to make the moves with our family to allow me to do what I love. And thanks also go to our son Andrew, 13, and daughter Cameron, 2, for putting up with Dad's schedule."

Nielsen extends equal respect to his staff—and they earn it. He seeks out turf students with the ability, heart, and dedication to become sports turf managers and puts them through the ropes on the crew. He says, "You have to have some vested interest in the job or you won't be committed to the 14- to 15-hour workdays. I really feel that during the two to three years an individual spends as part of our staff they should have the opportunity to learn all we have to teach them. If they have the drive to go with the skills, they'll be equipped to start in a head position of their own. I believe it's all part of the mentoring process we, as sports turf managers, owe the industry. My goal is to have each of my assistants move on to head positions."

And he has a good start on that. Jake Tyler, his first assistant is now at the head spot with the Binghamton Mets. Chris Pearl holds the top spot with the Nashville Sounds; Kyle Lewis with the Norwich Navigators; and Pete Lockwood with the Eugene Emeralds.

It's the commitment by Nielsen and his crew to excellence in overall field quality, safety, playability, and appearance that earned the Louisville Slugger Field STMA Field of the Year honors. **ST**



"I was really excited about the opportunity to tackle the construction and weather-related challenges in Louisville," says Nielsen.

Suz Trusty is communications director of the Sports Turf Managers Association.