strong association with the image of the University. They received about 80% of PET daily, enough to stay green but not to grow much at all.

Second priority was my boss's golf course greens and tees because of the high cost of replacement and the loss of revenue that would occur due to dead greens, and the gardens around the George Bush Presidential Library because it was such a high visibility facility and again, the cost of replacement. They were allowed about 60% of PET per day. Along with daily hand watering they could be adequately maintained.

Third were all other ornamental gardens, limited to hand watering during the day to prevent the cost of replacement. Last was the 5,000 acres of irrigated lawns and other non-essential fields (A & M is the largest campus in the world in land area).They were not allowed any water at all. My 30 acres (at that time) of intramural sports fields was originally classed as non-essential like lawns! Only after vehement argument that the safety of 90,000 annual student participants at Penberthy should be of somewhat equal importance to a few hundred scholarship athletes, and showing administrators that we had spent nearly $250,000 over the previous 5 years establishing the quality of fields we had, were they persuaded to place Penberthy at the second level with the golf course greens.

As you can see, the intramural field business at a major university puts us in a funny category somewhere between privileged and neglected.

Bob Marcotte
Turf Foreman
Penberthy Intramural Sports Center
Texas A&M University

We have not been asked to monitor our water usage but we do try to water in the evenings or early mornings to be more efficient with our water use. In our landscape areas we use tree gators to help water our trees and we also incorporate drip irrigations in some areas.

Gary Vanden Berg, CSFM
Director/Grounds
Milwaukee Brewers

I don't think I am a good candidate for this subject for two reasons: first, I pump out of a pond that is fed with a well pump so no city water is being used, and second living in Maine we have just had the second wettest June on record and July hasn't started any better. In my 11 years as a turf manager I have never been asked to conserve water. I guess I am one of the lucky ones. Rick Perruzzi, CSFM

Sports Turf Manager
City of South Portland, ME ■

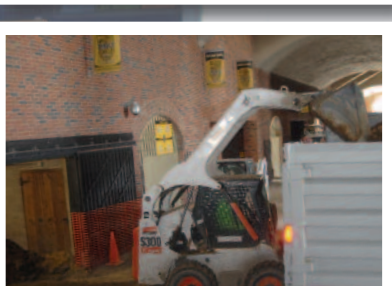
Renovation at Iowa's Kinnick Stadium

Editor's note: Eric Morse, a writer with Two Rivers Marketing, Des Moines, IA wrote this article.

Have you ever seen a football field fit through a door 7 feet high and 15 feet wide?

That's happening this off-season at the University of Iowa, where a renovation to the field at Kinnick Stadium, the home of the Hawkeyes, is taking place.

Of course, the synthetic field isn't coming through the door all at once. Instead, the old and new fields are coming and going through an opening just a little larger than a



Why Iowa is going artificial

Normally, athletic fields have only two layers of sub-base. An additional two layers are being installed at Kinnick Stadium because the field is being converted from natural to artificial turf. The new artificial turf has a warranty of 7 years. At that time, if the university wants to go back to a natural surface, the top two layers of the subbase can be removed and the field can quickly be switched back.

Ted Thorn, director of grounds for the University of Iowa, says the purpose of this project is to fix the drainage, and switching to artificial turf is secondary. There are a number of reasons Kinnick Stadium is going to artificial turf. While Thorn and the administration had input on what type of surface the field should have, the switch to artificial turf has been driven by the football coaching staff.

"One of the reasons we're going to artificial turf is these things are cyclical," says Thorn. "Many high schools now have artificial surfaces, so it's a big thing from a recruiting standpoint. The football program also did a lot of research and one of the biggest factors into the decision is that this field will be safe for our players."-Eric Morse

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garage door, bucket by bucket, on skid-steer loaders.

Why is the field renovation taking place like this? It's the only way to do it.

Kinnick Stadium first opened in 1929 and is named for Nile Kinnick, the 1939 Heisman Trophy winner and the only Heisman winner in university history, who died in service during World War II. It's also one of the best places for football fans to watch a game. The stands are right on top of the field, less than 20 feet from the sidelines. Through several renovation projects over the years, the character of the stadium has been carefully maintained, including keeping the stands as close to the action as possible. Doing so has meant the tallest opening to the field is the 7-foot-tall door, which is actually located in the concourse under the west grandstand.

The 2006 renovation added a new press and sky box structure, additional bathrooms and concessions throughout the stadium, and a new, permanent seating structure in the south end zone. This renovation did not include the playing field, even though university officials knew the surface was reaching the end of its lifespan. But heavy showers that overwhelmed the drainage system for last year's rivalry game with Iowa State resulted in speeding up the plans.

The university hired Glenn Rehbein Companies, a Minnesota-based contractor that designs and build athletic fields nationwide, and left it up to them on how to complete the renovation.

None of the previous fields the contractor worked for presented the type of challenge faced at Kinnick Stadium.

"This is a unique job," says Tom Dimke, director of operations at Glenn Rehbein. "Typically, you'd be able to drive a dump truck and large equipment down onto the field, but we can't do that here."

Dimke says many options were considered, including trying to get single-axle dump trucks through the door or craning equipment onto the field. None of these other solutions made sense. Realizing that equipment would have to be able to fit through the door, Dimke says they turned to skid-steer and compact track loaders.

Eight loaders are at the site, four Bobcat T250 compact track loaders and four S300 skid-steer loaders. The compact track loaders work on the field, the skid-steer loaders move material on the ramp between the field and doorway.

"The most important part of this job is getting the material off the site and the new material back into the site as fast as we can," says Dimke.

The first step in the job is excavating and removing 13 inches of the existing field, a top layer of soil and a lower level of sand. The material is moved to the corner of the field nearest the tunnel. A small holding area featuring steel plates over concrete is used to protect the floor from damage from the buckets.

The dump trucks must enter the concourse through a large archway on the south end of the grandstand and back up through to the door. Some of the material being removed from the stadium is being recycled by the university. "We took 150 loads of the top mix from the stadium to the university golf course," says Ted Thorn, director of grounds for the University of Iowa. "We're going to compost it and use it for topdressing. We are also thinking about building a small practice range for the golf team and we'll probably use that for the greens."

"We took 150 loads of the top mix from the stadium . . . we're going to compost it and use for topdressing."

In total, 4,600 yards of soil and sand are being taken from the field and replaced with 5,200 yards of rock, sand and other materials.

The new field will have a four-layer subbase. Below the new turf are two layers of rock, then a layer of sand and another layer of rock. Under the first two layers of rock, 12-inch by 2-inch drainage tile is placed in specific locations to help direct the water to collector pipes on both sides of the field. The subbase layers under the drainage tile are crowned, and have a slope of 0.65 percent from the center of the field to the drainage pipes along the sidelines. The top two layers of rock bring the slope to level, so the entire field is flat. Grading is done by laser-guided attachment to compact loaders.

The laser system consists of a transmitter set on a tripod, one or two laser receivers placed on masts on the attachment, and a hand-held receiver and remote used to set up the system. Easy to set up, the laser system performs single-slope or dual-slope grading. Single slope is used for the level playing field and the dual-slope is used for the 0.65 percent grade. The only requirements are a loader with a 7- or 14-pin attachment control kit, auxiliary hydraulics and a box blade or grader attachment.

"The laser-guided grader attachment paid for itself overnight," says Dimke, who adds that the company invested in the equipment 2 years ago and also uses the system to grade the base for concrete floors for buildings, such as retail stores.

"We have used a laser system on a dozer for other projects, but the grading requires a lot of backing up, which creates a lot of track wear," says Dimke. "The compact loader can also turn much more quickly than a dozer."

Dimke says his crew has also used grapples, pallet forks and sweepers. The grapples removed a plastic membrane that was under the turf of the old field and the pipes of the old drainage system, the pallet forks move bundled materials, and the sweepers clean up around the site, particularly in the concourse. Dimke estimates the loader fleet switches attachments as many as 20 times a day. ■

John Mascaro's Photo Quiz

>> Answer: from page 15

These round indentions in the clay were not the result of a 'Dizzy Bat' summer camp in the rain; they were the result of quarter size hail stones. This stadium infield had just been laser graded and screened and then it received some rain so it was left to dry before the top layer of calcined clay was applied. When the base material was just about dry, another storm hit. This storm produced 50 mile an hour winds as well spawning a F1 tornado that touched down about 15 miles southwest of the stadium (which is rare for Pennsylvania). It also produced rainfall that turned into a hailstorm that lasted 10 minutes. Because the base material was uncovered, it received these dents from the hail stones. The turf areas were fine and the damage to the infield was easily removed by spiking and re-screening the entire area. The stadium did not suffer any major damage, other than some pine needles being shredded off some white pines. It was a good thing the hail was not baseball-sized.

Photo submitted by Dan Douglas, Director of Stadium Grounds at FirstEnergy Stadium, Reading, PA.

If you would like to submit a photograph for John Mascaro's Photo Quiz please send it to John Mascaro, 1471 Capital Circle NW, Ste # 13, Tallahassee, FL 32303 call (850) 580-4026 or email to john@turf-tec.com. If your photograph is selected, you will receive full credit. All photos submitted will become property of *SportsTurf* magazine and the Sports Turf Managers Association.

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Tools&Equipment

Gravely introduces Treker UV

Ariens Company introduces the new Gravely Treker utility vehicle, is available through the Gravely Turf product distribution network. Without leaving their seat, operators can push a button on the standard electric bed lift and the actuator elevates the bed to deposit payload where needed. Also standard is the front brush guard which provides added durability and offers protection against front impact damage to the vehicle. Additional features include a four-wheel independent suspension integrated to deliver a comfortable ride, and an auto-lock rear differential which works when the rear tires slip.

www.ariens.com

Broadleaf herbicide approved

PBI/Gordon Corporation announced EPA approval of their new T-Zone broadleaf herbicide that contains triclopyr, sulfentrazone and phenoxies to control broadleaf weeds in cool-season turfgrasses. T-Zone will be marketed under the ProForm brand. "Triclopyr gives T-Zone an extra kick for controlling problem weeds like wild violets," says Doug Obermann, product manager for Gordon's Professional products. "The "T" is triclopyr; the "Zone" is the sulfentrazone which provides enhanced speed as well as yellow nutsedge suppression." Other weeds including ground ivy, oxalis and black medic are also controlled. Other ProForm products include SpeedZone, PowerZone, SpeedZone Southern, Surge and Q4.

pbigordon.com

Gawryla Grip helps line artificial turf

Lining an artificial turf field in preparation for painting lines used to mean puncturing the turf with nails or stakes, damaging the turf backing and sometimes the sub-surface. The Gawryla Grip is made from PVC plastic and allows for accurate lining on artificial turf infill systems. No interruption to sub-surface. The product also saves labor and time spent. A grid of pins on the bottom of is designed to sink into the turf fibers and infill, providing a safe, solid anchor for tying lines, and spreading the force of a taught string over an area of 36 square inches. Comes in a set of 2.

www.pioneerathletics.com

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TM-62 aerator from Turfco Direct

The TM-62 Aerator attaches to the tractor for general-purpose aeration and is available as a three-point hitch or tow-type aerator. An independently mounted wheel set allows for easy turns without tearing turf, and deep-coring action to depths of 4 inches. Built-in storage legs slip into place so the unit can be stored without a pallet.

http://www.turfcodirect.com

"Finest pitch in America" wins Pro Soccer category

DAVID MOYES, head coach of the English Premier League's Everton Football Club, said it best: "Dick's Sporting Goods Park is the finest pitch in all the places I've been in America so far. The pitch here is magnificent. Some of the places we've been in America, they don't treat their pitch right . . . here they have American football lines, they have concerts on the field. But [Dick's] is the finest set-up I've been to and we've been coming to America for the past 5 years. You guys should be really proud."

Dick's Sporting Goods is billed as "the world's largest and most state of the art professional stadium and fields complex" and is composed of the 18,000-seat home stadium of the Colorado Rapids and its surrounding 24-field, fully-lit soccer complex. Dick's Sporting Goods

Monthly maintenance and fertility program

January
Field dormant

February
Turn on field heat and cover field.

March
Verti-cut field in one direction. Aerate with 5/8-inch tines on 2 x 2-inch centers. Drag in cores, sweep tufts. Topdress field at rate of 10 tons of sand per acre. Apply gypsum and humates at the rate of 15 lbs/1,000 sq. ft. Apply 1 lb. N with organic fertilizer. Apply ½ lb. N with a methylene urea-based fertilizer. Spray field with micronutrients, soil amendment, amino acids, and wetting agent.

April
Apply ½ lb. N with a methylene urea-based fertilizer. Spray field with micronutrients, soil amendment, amino acids, and wetting agent.

May
Apply ½ lb. N with a methylene urea-based fertilizer. Spray field with micronutrients, soil amendment, amino acids, and wetting agent.

June
Apply insecticide for grub control. Apply ½ lb. N with a methylene urea-based fertilizer. Spray field with micronutrients, soil amendment, amino acids, and wetting agent.

July
Apply broad spectrum fungicide. Apply ½ lb. N with a methylene urea-based fertilizer. Spray field with micronutrients, soil amendment, amino acids, and wetting agent.

August
Apply ½ lb. N with a methylene urea-based fertilizer. Spray field with micronutrients, soil amendment, amino acids, and wetting agent.

September
Aerate with 5/8-inch tines on 2 x 2-inch centers. Drag in cores, sweep tufts. Topdress field at rate of 10 tons of sand per acre. Apply ½ lb. N with a methylene urea-based fertilizer. Spray field with micronutrients, soil amendment, amino acids, and wetting agent.

October
Apply ½ lb. N with a methylene urea-based fertilizer. Spray field with micronutrients, soil amendment, amino acids, and wetting agent. Apply gypsum and humates at the rate of 15 lbs/1,000 sq. ft.

November
Apply ½ lb. N with a methylene urea-based fertilizer. Spray field with micronutrients, soil amendment, amino acids, and wetting agent.

December
Apply 1 lb. N with 21-0-0 as a dormant feeding. Apply fungicide for snow mold protection.

The same crew that takes care of our stadium field is also responsible for the rest of the complex which includes a sand-based practice field, two synthetic fields, and 21 native soil fields.

Park's 917-acre site is a public-private partnership between Kroenke Sports Enterprises and Commerce City. The site also hosts the brand new city offices of Commerce City, lots for retail outlets, offices for the U.S. Fish and Wildlife Service, and a new visitors' and educational center for the Rocky Mountain Arsenal Wildlife Refuge, among other entities.

Michigan State turf management product Bret Baird runs the show, along with his assistants Phil McQuade and Dean Pearson. Manuel Garcia is the irrigation systems maintenance tech and Torrey Batts is the turf equipment tech.

Baird began his turf career working under STMA Board member Troy Smith, CSFM, at the Denver Broncos training center and there also learned from turf icon Ross Kurcab, CSFM at Invesco Field at Mile High. He was hired in 2006 by Kroenke Sports Enterprises where supervised construction and departmental start-up for the Dick's Sporting Goods field and complex. The field was completed in April 2007.

The field is 100% Kentucky bluegrass featuring these varieties: Brilliant, North Star, Moonlight, and Blackstone. It features a SubAir forced hot air system and the drainage is perforated pipe consisting of 6-inch pipes on 10-foot centers.

From Baird's award entry: "Our largest challenge this year has been budget cuts. Our overall budget was cut considerably; the hardest hit has been zero tolerance for overtime. We have to find ways to get all of our work done in 40 hours where last year (2007) we could have all the overtime we wanted. Where this gets difficult is during a game week. I need to have a minimum of three people here to get the field prepared for a game. If the game is on a weekend, which almost all of them are, I have to comp time during the week. On an average game week I have to comp at least three people a full day. This takes away almost 25% of my crew to get the rest of the complex ready for the weekend's events.

"But year in and year out our largest challenge is keeping this field in the best possible condition while also taking care of the rest of the complex. The same crew that takes care of our stadium field is also responsible for the rest of the complex which includes a sand-based practice field, two synthetic fields, and 21 native soil fields. It can become very difficult scheduling daily task and prioritizing what, when, and what order things need to be done. We need to decide who needs to complete tasks and make sure they are trained on the machinery, processes, and reasoning of why things need to be done in the way and the order they are done.

"On the outer fields we host a variety of sports including soccer, football, lacrosse, rugby, Gaelic games, countless camps and tournaments. All these events require their specific lines and layouts that also take quite a bit of time to prepare. This past July (2008) was the first Mile High Music Festival, a week-long load-in that included five stages and two tents that were [huge]. There were more than 90,000 attendees over 2 days with no field protection. We had to turn off the irrigation for 5 days and it reached 100 degrees each day.

"Needless to say, we had 10 days of renovations on the outer fields to get them back in shape for play 3 weeks later. With all the work we need to perform on the outer fields throughout the year, we need to be very careful with our scheduling to make sure the stadium does not suffer and gets all the care it needs."

SportsTurf: How has the recession affected your operations?

Baird: Two years ago my budget was cut pretty hard so the recession has not affected our operation in that way too much but I have noticed we are having more and more events in our stadium to get people in here than we were before.

ST: What changes to your maintenance plans are you expecting to make this year, if any?

Baird: I have started using a growth regulator this year in an effort to reduce clippings which will slow the effects of the slime layer on top of our sand since I do not catch any of my clippings. The other thing we are really incorporating this year is a lot more solid tine aerifications. With so many events and mowing so often for aesthetics we are seeing a lot of positive results from the less invasive solid time aerification.

ST: What's the best piece of turf management advice you have ever received?

Baird: Nobody cares about your field as much as you do so don't take it personally when things don't go exactly the way you want.

ST: How do you balance your work and personal time?

Baird: I have complete confidence in my assistants, Phil McQuade and Dean Pearson. I trust them to work any event and that allows me time away.

ST: How do you handle all the different events that your field sees? How does it affect your approach, maintenance-wise or preparation-wise, if at all?

Baird: It seems like when you have all of these different events you just get it done and afterward you wonder how you did it. We basically have a set program for our field that we follow no matter what event is coming. The only things we really have to change are watering, mowing, and staffing schedules. The event load also dictates our aerification program. When we have a long enough window open we will hollow time aerate and topdress. If the windows are not long enough and we have compaction to alleviate, we will solid time aerate.

ST: What do you see yourself doing 10 years from now?

Baird: In 10 years I will probably be doing the same thing I am doing now but be a lot older and a lot grayer! ■

The STMA Field of the Year Awards Program has been made possible through the generous support of its sponsors. They include: Carolina Green Corp.; Covermaster, Inc.; Hunter Industries; Turface Athletics/Profile Products, LLC; Scotts Professional Seed; and World Class Athletic Surfaces.

STMA in action

Heat doesn't wilt success of Regional Conference and Exhibition

By Steve Adams

Best known for the cultivation of corn and soybeans, Iowa is no stranger to green growth of a more subdued variety. Thus, STMA members from eight chapters came to Iowa State, known for its premier turf research program and pristine sports fields June 24-25 to talk turf at STMA's Midwest Regional Conference and Exhibition.

Nearly 150 members from the Gateway, Illinois, Iowa, Minnesota, MO-KAN, Nebraska, Ozarks, and Wisconsin Chapters joined their peers for 2 days of national conference-level education, professional development, and networking, in addition to a trade show featuring the latest in turf products, technology, and equipment.

As Dr. David Minner, Iowa State professor in horticulture and leading turf researcher summarized it, "The sports turf managers are a practical group of people; they work with budgets, grass, and soil. So we've tried to hook them up with distributors so they can see the current equipment and products that are on the market; show them the latest information on our research plots; and give them lots of information on everything from budgeting and time management to improving their personal skills. And of course all the tricks of the trade in dealing with grass, dirt, and soil. STMA has a national conference, but it's in the winter, and this regional conference provides the opportunity to actually get outdoors and see some things hands on."

Minner was one of the main men outdoors, where he led what seemed like every attendee—scorching-hot heat-index be damned—on tours of his sports turf-specific research plots. The diverse plots, along with

>> **IOWA STATE** hosted 150 attendees to STMA's Regional Conference and Exhibition last month.