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Photo courtesy of GMB Architecture + Engineering, Holland, MI

Irrigation systems: care and maintenance

One of the many reasons field owners embrace the idea of synthetic turf is the fact that it will save on water bills since it doesn't need irrigation.

This is true; the field will stay green despite not having a regular drink. However, it's a rare synthetic field that doesn't need irrigation. And while synthetic turf does not need to be watered in the same way natural grass does, an irrigation system is essential. It helps to clean the field, settle the infill and reduce static electricity. It also helps reduce the much complained-about "heat island" effect common to synthetic fields in hot weather.

So while we can all agree that irrigation systems help fields function more efficiently, the question becomes this: what can be done to help irrigation systems themselves function more efficiently?

The good news: it's not all that complicated, really. Like all other aspects of a sports facility, an irrigation system will work as well as it is designed to, as long as it is maintained well and checked often. Taking a step back from this point, it's essential to remember that the better designed the system, the less likely

The investment of money on the front end to use the services of a quality professional such as a Certified Irrigation Designer can mean savings in the efficiency and integrity of a system.



information is available at
www.irrigation.org

John Mascaro's Photo Quiz

John Mascaro is President of Turf-Tec International

Answers from page 17

The green circle is not the problem, but it is pointing out the problem. The athletic field manager, who is responsible for 47 fields with a crew of four, was not invited to be involved in the reconstruction phase of this municipal athletic field by the contractor. The reconstruction included new irrigation, drainage and new sod. At the time, the city also had two separate crews, one in charge of the irrigation and one in charge of the turf. No one talked with each other and no one could figure out why the grass just wasn't growing well on this field. One day after some department "shake ups" and the combining of the irrigation and turf department guys, the athletic field manager was looking at a new Google Earth picture recently taken of the field and bingo, the problem became apparent. There was not enough water pressure to the irrigation system to give the heads a full pattern. The inner green circle was from the lower nozzle and the outer green circle was from the outer nozzle. As it turned out, a booster pump that was installed on the system was in another room full of piping that no one knew was there. Once they turned that on, the coverage was great and the grass began to grow well and the circles disappeared.

Thanks to Ethan Owens, Athletic Facilities, Playground & Courts Manager at the City of Portland (ME) for allowing me to use this photo. Photo taken by Matt Tobin, Pioneer Athletics. ■



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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Photo courtesy of Stantec Sport, Boston, MA

it is to have problems down the road. The investment of money on the front end to use the services of a quality professional such as a Certified Irrigation Designer (information is

available at www.irrigation.org) can mean savings in the efficiency and integrity of a system.

Once any system is installed, however, regular maintenance is your friend. None of it is too difficult; as long as it is done on a regular schedule, it will become easier.

At least on a seasonal basis, remember to do the following:

- Test the irrigation and drainage systems to ensure there are no leaks, breaks or blockages. If problems are found, consult construction diagrams to locate and investigate them.
- If the irrigation system has been winterized (drained or blown out), it should be reopened carefully, allowing water to flow slowly into the system zone by zone. Next, at a minimum, check the day and time on the controller to ensure it is correct and then run the controller through one full cycle.
- Check for the proper opening and closing of each valve.
- Check the spray pattern to make sure it is fully covering each zone.
- Check the operation of each sprinkler head. Do pop-ups function correctly? Do rotary heads rotate? Are heads at the correct height and are they adjusted correctly?

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- Is any sprinkler head allowing water to flow out (rather than spraying)?
- Is water being sprayed in the direction you intend? (In other words, the only place water should be falling is on the playing surface; it should not spray the dugout, spectator stands, areas outside the fence and so forth). Remember that water falling on other areas is (a) going to waste, and (b) may ultimately damage or waterlog those other areas if they don't have sufficient drainage systems. (And that's a story for another time).

Take the time to readjust, repair or replace any damaged elements in the irrigation system. If unsure of any of the workings, contact the designer or builder of the original system, who can provide information.

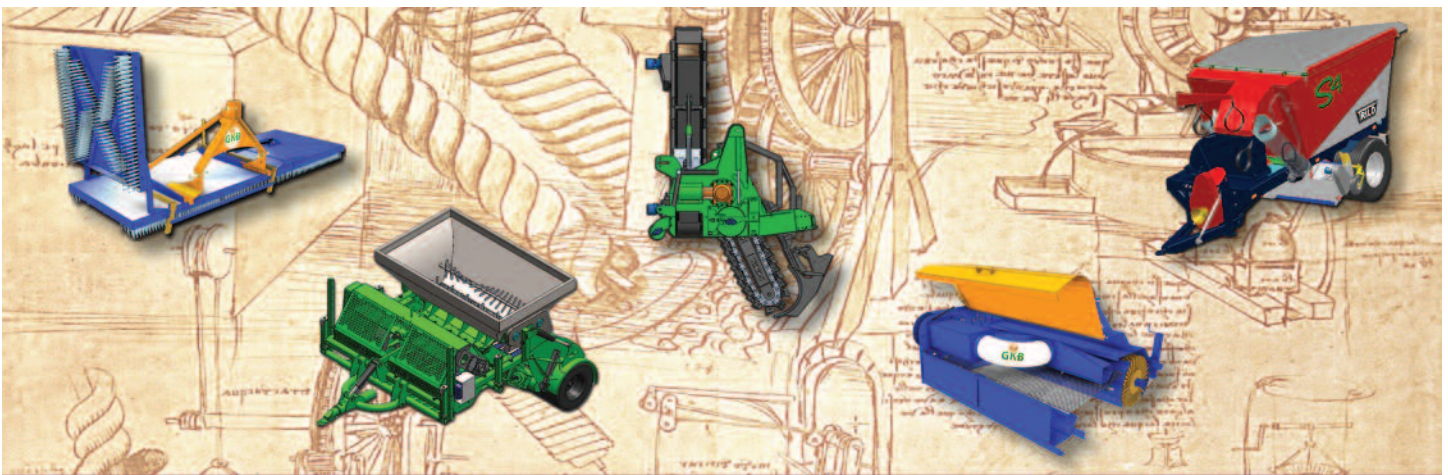
The efficiency of an irrigation system is irrevocably tied to the drainage system beneath the field. So once the irrigation system has been given its check-up, take the time to make sure it's working well with the drainage system. Irrigate the field heavily (or, if the weather is right, you can use a heavy rain as your yardstick. Either is fine; what you're looking for is a good soak to help you test the drains).

Once the field is saturated, carefully inspect the surface to ensure it drains as quickly as expected and there are no areas where

water collects or where the field does not drain. If you spot standing water, check how deep it is. Does this area drain more slowly, or not at all? Take pictures of the problem and contact your field builder, who can help you determine what is wrong. It may take a simple fix; it may be something more complex. One thing is for certain, however: whatever is wrong is not going to remedy itself, and will require some kind of assistance.

Keeping a field performing at its optimum level means putting in the extra time to make it work that way. No facility thrives on neglect and a field with excellent irrigation and drainage will remain playable, comfortable and hassle-free for years to come. ■

Mary Helen Sprecher is a free lance writer who wrote this article on behalf of the American Sports Builders Association. ASBA is a non-profit association helping designers, builders, owners, operators and users understand quality athletic facility construction. ASBA publishes Sports Fields: A Construction and Maintenance Manual, a comprehensive guide to the design, construction and maintenance of sports fields. The book is available for purchase either in hard copy or in electronic form. Information is available at www.sportsbuilders.org.



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▲ Ripken Stadium, Aberdeen, MD, home of the Single A IronBirds



▲ Neuroscience Group Field at Fox Cities Stadium, Appleton, WI

TIPS ON MOWING PATTERNS IN YOUR BASEBALL TURF

PATRICK “IRISH” COAKLEY, CSFM, sports turf superintendent, Ripken Baseball, Aberdeen, MD

“I don’t map out anything ahead of time for the mowing I do. I try to keep my patterns all straight lines, mostly for practical reasons such as providing a guide for fertilizing or spraying. We have two mowers we use, John Deere 2653 models, and the width of cut matches my boom sprayer, for example. It makes for more efficient and quicker work.

“This year for our stadium field (home of short-season Single A Aberdeen IronBirds), we’ll be using a Deere walk-behind reel mower for the infield, which we got to minimize the amount of traffic on the infield.

“I can mow a straight line; it’s just a matter of picking a spot and making sure you stay symmetrical. Keep it simple. When you have straight lines it also is easier to change out the pattern, especially if you have constant play like we do at Ripken Baseball.

“Reel mowers have a ‘spiral’ roller on the front that lays the grass in one direction so when the light reflects off it the grass appears to be a different color. It’s like vacuuming a carpet in different directions; the reflecting light can make it appear to be two different colors. When grass keeps getting pushed in one direction, it lays down and can create a ball that zig zags. You mow in a different direction to stand that turf back up

“During homestands, especially if they last more than three games, we change up the patterns because if you let it go too long that mowing in the same direction will affect the roll of the ball, especially in the outfield. I’ve become a fan of the ‘blank slate’ look in the outfield as well, where there is no pattern. This is the best for playability. But

if you’re going with patterns, it’s best to choose two or three in advance so that it is easier to change from one to another without having to mow all day. It’s a matter of efficiency, and simpler.

“If the homestand is only 3 days, you can get more intricate because you might only cut the grass one time in those three days, especially if you’re using PGRs.

“It’s all about efficiency for me; not taking too much time on the mower while not compromising playability.”

EDDIE WARCZAK, manager, grounds, Milwaukee Brewers*

“Over the years I have done many different patterns in both the outfield and the infield ranging from simple straight lines and checkers to team logos and baseballs. I have learned different methods from a variety of people in the industry but I have also learned a lot through trial and error.

“We try to change the pattern at least once a month however with our harsh spring and busy tournament schedule the first half of the baseball season the pattern doesn’t always get changed out as frequently.” — *Eddie Warczak*



Photo by Mike Irvins



Photo by David Mellor



Photo courtesy of
Briggs & Stratton Power Products Group

“Mapping patterns depends greatly on the type of pattern. If we are doing straight lines, a checker board, or diamonds a simple string line to follow for the first cut does the trick. After the initial line is down I just work out from there. If however, we are doing something such as the team logo, then we use graphing paper followed by a grid of string lines on the field. We draw the logo on graphing paper, the graphing paper helps in converting the measurements you want. From there we will decide how large we want the logo in the turf, after that it is just simply staking out the string line to the correct measurements on the field and following the line with a mower.

“We try to change the pattern at least once a month however with our harsh spring and busy tournament schedule the first half of the baseball season the pattern doesn’t always get changed out as frequently. We usually have a schedule of when we want to change the pattern and that includes what type of pattern. I like to start out the early season with just simple straight lines due to lack of staffing, weaker turf, and a busier schedule. By mid-season the turf is stronger, we have more staff, and our schedule plateaus, which allows us to lay-out more intricate designs.

“To layout a pattern we generally use a walk behind greens mower (Jacobsen Greens King) to cut the infield turf as well as any outfield logos. When we do not have a logo in the outfield we will use a Jacobsen Tri-King to mow the entire outfield as well as foul territory. Another tool to help put in the pattern is a push broom. The push broom allows us to simply broom the turf the direction we want it which assists in designing the tight areas of a logo or a star.”

*Warczak was promoted to MLB this winter; his response here was referring to his time as head groundskeeper for the Wisconsin Timber Rattlers, a Class A team located in Appleton.

DAVID MELLOR, Director of Grounds, Boston Red Sox

“We create patterns using line strings, irrigation flags and tape measures, and we step away or get above to see how our outlines are shaping up. We ‘connect the dots’ with a walk-behind greens mower’s roller; it’s the roller that etches in your design. While we use Toro Reelmaster mowers we also use Simplicity lawn and garden tractor.

The full width rollers on the free floating Simplicity mower deck bend in the grass design.

“What tools we use depends on how intricate the pattern is. Other tools we use could include push brooms, rakes, and small round carpenter rollers, which we push to bend the grass down and can then be picked up at the end of the pattern section where a larger piece of equipment can’t turn around because of limited space. We use this when we are putting the stripes in the toes of the hanging sox logo and also when making the B STRONG pattern for 2013 MLB post season for example.

These are great for tight areas where there is no room to turn, and it can cut down on turf wear.

“For those on a budget, you can build your own roller too. Get some PVC pipe 4 to 10 inches in diameter and 24-36 inches long, fill it with concrete and connect it to an old mower handle. You can usually find one of those at a dealer’s ‘mower graveyard’. Then you can use electrical conduit pipe to extend the length and/or width and attach the roller to the mower handle. These are great for tight areas where there is no room to turn, and it can cut down on turf wear.

“If your field drains very well you also can use water pressure to bend in your design but you must take care to keep safety and playability your first priority. The first time we put in a unique design 3 days before a game we may also use a 1-inch hose with an adjustable nozzle, to help create a unique pattern. Always be careful to not create any safety or playability issues from using any water.

“We change our pattern every 7 to 10 days because we don’t want the grass to start growing sideways affecting playability, and changing the pattern spreads out the wear. When we are considering patterns we can’t work too far in advance though, because you have to take into account the weather, whether there’s been or will be an external event on the field and so on. You certainly don’t want to add any stress to the grass.” ■

Continued from page 19

I had not damaged as many brain cells over the years as I had feared, so I applied and was awarded the fellowship and studied under Dr. James Beard. I found a copy of Turfgrass Science and Culture at a used bookstore, read it from cover to cover, and realized that I had a latent turf gene that was now being expressed.

ST: What about going to grad school as an older student?

Gilstrap: Well that I certainly was since I had just turned 40! The R. C. Potts Fellowship paid \$15,000 a year, and while it was a significant pay cut for me, I was able to afford my own apartment and a bicycle. All I did was study except for going to the Dixie Chicken for Friday happy hour. I approached grad school like it was a full-time job.

The fellowship also paid for up to 15 credits tuition per semester. So, I foolishly signed up for a full load my first semester. It was only later that I found out that most grad students only took two or three courses at a time. Anyway, after the first round of exams my highest score was a 76, so I really put the work ethic in play and ended up acing every course. Dr. Beard couldn't believe it and really took an interest in me after that, which still exists to this day and for which I remain most appreciative.

Dr. Beard retired in 1992, so I hold the illustrious distinction of having been his last grad student. You might say it was me that drove him out of academia.

ST: Do you want to tell us a little more about your other life before turf?

Gilstrap: Sure, at least what I wouldn't mind my kids knowing if they end up reading this. I was the lead singer in a high school combo. We played mainly soul music and some early Stones and stuff like that. Besides school dances we had a good job playing at Gulf gas station grand openings in around Arlington and Ft. Worth. I started banging on the guitar when I was going to UT in the late 60's and got good enough to play along at house parties.

I transferred to Tarleton State University since my parents had bought some land west of Stephenville. I lived in a run down farm house and really only traveled the 18 miles into town to attend classes and sell firewood I had cut. So, it was there that I started writing songs. I would go back down to Austin from time to time and sing them to anyone who would listen.

After graduation, I took a job with a seed company up in the panhandle. Feed lots and sugar beets were big business and the aromas masked each other so that it smelled like a cow had eaten a Hershey bar. One day I got a call from Austin informing me that Jerry Jeff Walker was going to record one of my songs called "Ro-deo-deo Cowboy," and that I should think about getting back down there and getting my own thing going.

So, I quit my job and did move back to Austin. Jerry Jeff did record my song, albeit 5 years later. Anyway, it was the heyday of the cosmic cowboy, and I also got to know pickers like Willie, Doug Sahm, Michael Murphy, B W Stevenson, Jimmy Dale Gilmour, Joe Ely, and all the musicians, roadies, groupies, and assorted hangers on. The blues scene was emerging also, so I got to know many of them, too, including the Vaughn brothers. Along the way, several more of my songs were

recorded by me and others, but I only had the one that got on a major label, so far.

In later years, I joined Alvin Crow and the Pleasant Valley Boys and we played all over Texas, Oklahoma, and Louisiana. Then, I took a job as Jerry Jeff's stage manager and got to travel to 38 states until that fateful cab fare got me off the road.

ST: How did you get the job at MSU?

Gilstrap: While at A&M, I thought I could use some of Beard's connections in France and Italy hoping to land a job as a grow-in superintendent. Because of his retirement, I got to teach a course for non-turf majors called Recreational Turf, which would later have as many as 1,500 students a year and would also serve as the model for my World of Turf course here at MSU. MSU was advertising for two positions, one was Environmental Education Specialist (which Dr. Frank Rossi, now at Cornell had just left) and the other was the lawn care program coordinator. I was invited to interview in February, which I thought would be good since, as a native-born Texan, I thought I needed to see how bad the weather really was up there.

I did a 2-day, intensive interview for the first position and gave a seminar. Then, I turned around and did the same thing for the second position, except this time I met with the lawn care constituency rather than the golf people. I was 45 by then, so I suspect they wanted to see how I held up for those 4 days. I even stayed over the following weekend since I wanted to get more of the feel of East Lansing.

I had expressed my desire to go on for a Ph D, and after the interviews were completed, Dr. Bruce Branham (now at Illinois) said that wouldn't be possible if I became the environmental specialist. This was because it was an extension-type job where I would be out working with the state's golf courses and wouldn't be able to complete my course work. However, if I was interested in the lawn care position, then perhaps I could start grad work after I got the program on its feet.

Earlier in the year, I had interviewed for a sales position with Milorganite and a teaching position at Horry-Georgetown Technical College in Myrtle Beach. However, each March here in Michigan, I think about whether I'd been better off in Myrtle Beach. I had standing offers from both of them, but they each said they would wait until I had interviewed in Michigan. In early March, I was offered the coordinator position. I thought of it as having been with the Rangers or Astros and the Yankees wanted me.

ST: And you didn't get your Ph. D. until you got to MSU?

Gilstrap: Yes, and it took quite awhile. Turf pathologist Joe Vargas was my major professor. He and Beard had a great friendship that started back when Beard was at MSU in the 70's. Back when I was in sales, I had developed an interest in diseases and fungicides, which were very expensive. And I knew I could deliver a higher-priced order with just my pickup. I knew from listening to Vargas give talks and then later interviewing with him, that he and Beard were very different in personalities and approaches toward life. So, in my mind I thought if I could synthesize some qualities from two giants in the turf industry, I might end up with something pretty unique. Vargas