IN THIS ISSUE: Building a new softball field in Tennessee

THE OFFICIAL PUBLICATION OF THE **SPORTS TURF MANAGERS ASSOCIATION**

JANUARY 2019

SportsTurf

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FIELD OF THE Year

See pg 52

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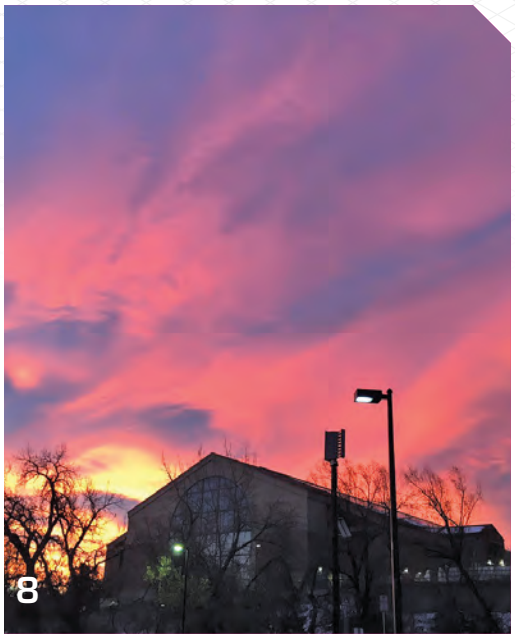

FEATURES

DEPARTMENTS

ON THE COVER

pg 52

On the cover: Field of the Year winner Shane Hohlbein, CSFM, Precision Turf LLC, said that last May a 100% Kentucky bluegrass was put in at 5/3 Stadium. "We faced a challenge installing Kentucky bluegrass field this far south. This was a huge risk, but with all of the research, new varieties, and trails in past years we thought we could pull it off. The thought process with us going to Kentucky bluegrass was to eliminate the transition periods between bermudagrass and perennial ryegrass in a venue with little to no downtime."

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FROM THE SIDELINES

"Turf" means what?

Eric Schroder / Editorial Director / Eschroder@epgmediallc.com / 763-383-4458

A FEW YEARS BACK during her presentation at an STMA Conference, the venerable Mary Owen, University of Massachusetts' Extension Turf team leader, decried how the word "turf" was becoming too synonymous with synthetic fields. I doubt there's even one person reading this who hasn't heard "civilians" use "turf" when referring to synthetic, for example, "Is that game going to be played on turf?"

This is an important subject to professional turf managers, so much so that the STMA Board of Directors has officially adopted specific nomenclature addressing it. Moving forward, all communications from STMA HQ will use either "natural grass fields" or "synthetic turf fields" (goodbye to "artificial"!), with the understanding that in the academic world, "turfgrass" will continue to be used. Getting this terminology used much more broadly is one of the Board's 2019 initiatives. The intent is to help non-technical audiences ("civilians") like parents, coaches, administrators and others, including I hope broadcasters, better understand the types of playing surfaces and how to accurately reference them.

Rosy outlook for 2019

DESPITE MY PREVIOUSLY, oft-stated disenchantment with our digital world today, especially the negative effects of social media, I sure do appreciate the World Wide Web. How else would I have come across an interesting interview from the *New York Real Estate Journal*?

The interview subject was Mike Ryan, president of The Landtek Group, the 40-year old New York-based contractor that specializes in sports facility design and construction. Here's what he said in response to a question about how he sees business in 2019:

"There is a lot of optimism in the sports construction industry. Builders and others are very positive about short-term and long-term opportunities. Growth will be strong. We are still in the early stages of this industry; we are only a few decades old. The sector will grow, products will continue to improve and projects will certainly become more complex. The full-year cycle of athletic training and preparation has had an impact. The yearlong demand requires more and better facilities on all levels. It's also fantastic to see that sports for girls and women are growing rapidly. We have to build facilities to meet these demands."

If that positive outlook comes to fruition, we're talking continued growth in sports turf management jobs as well. Perhaps municipal managers and K-12 administrators will create some of those jobs for the reasons Brad Park of Rutgers details starting on page 10 of this issue. And on page 34 Joe Churchill of Reinders Inc., explains why improper spec-writing, construction, grow-in or unrealistic project completion dates will create ongoing issues for any manager long after the architect, engineer, general contractor and seeding/grow-in contractor are gone. More fields is good, but remember if you are the person with the responsibility to maintain these new fields to the high standard you and your administration have established, getting involved early might save you from having stakeholders ask, "Why don't we just go artificial?" ***/ST/***

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// January 2019

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10405 6th Ave. N., Ste 210
Plymouth, MN 55441

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SALES REPRESENTATIVES
Chris Pelikan
Senior Account Manager - East
Phone: (763) 383-4408
cpelikan@epgmediallc.com

Peggy Tupper
Senior Account Manager - Midwest
Phone: (763) 383-4429
ptupper@epgmediallc.com

Leslie Palmer
Senior Account Manager - West
Phone: (763) 383-4460
lpalmer@epgmediallc.com

EDITORIAL
Group Publisher:
David Voll
Editorial Director:
Eric Schroder
Technical Editor:
Dr. Joey Young
Managing Art Director:
Dodi Vessels
Associate Art Director:
Phil Tippin
Sr. Creative Services Project Manager:
Angela Scott
Production Coordinator
Samantha VanKempen

SUBSCRIPTION SERVICES
Phone: (847) 513-6025
Sportsturf@omeda.com

REPRINTS
Brett Petillo
Wright's Media
bpetillo@wrightsmedia.com
(281) 419-5725, ext. 118

DIRECT MAIL LIST SALES
Kris Grauer
NPS Media Group
kgrauer@npsmediagroup.com
(203) 822-7933

EPG MEDIA& SPECIALTY INFORMATION

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SportsTurf
MANAGERS ASSOCIATION

STMA Office
805 New Hampshire, Suite E
Lawrence, KS 66044
Phone: 800-323-3875
Fax: 800-366-0391
Email: STMAinfo@STMA.org
www.STMA.org

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PRESIDENT'S MESSAGE

A thank you from Phoenix

Sarah K. Martin / CSFM / sarah.martin@phoenix.gov / @neongrapefruit

CONFERENCE! It is one of my favorite things in the entire year! This is when I get to renew my love of everything natural grass! I cannot express my gratitude for seeing "old" friends, and making new ones who share the passion for what we do. It never fails that I leave Conference refreshed and ready to take on another year of managing the fields at my facility.

As this is my last "President's Message," I want to take a moment to say thank you to all the Board members with whom I have had the pleasure of serving with (and yes, you are still stuck with me for one more year as Past President, so don't get too excited). You have all made this ride eventful and fun, but not the upside-down twisty scary kind!

To everyone who has ever been on the Board, or sat on a committee, thank you, without your hard work and dedication, this organization would not be what it is today. You are all simply THE BEST!

And if you have ever thought about running for a Board position, DO IT! You will not regret the experience! I have learned more than I thought possible about this organization, about management in general, about how other regions and membership categories are affected by the goings on in the world, and made some truly amazing friends in the process. I admit I was concerned in the beginning about how much time it would require, etc. Please don't let those thoughts stop you from trying. The four board meetings a year, and committee work are well worth the time (which I admit was not as crazy as I expected!) and you won't regret the decision.

There are too many people in this organization that have made huge impacts on my life to try to list out names. From my very first interaction with the Colorado Chapter, to today, I can not express my thanks for all that you have helped me do and become. This organization is my sounding board and my rock, for which I am eternally grateful.

In the words of Marcel Proust, "Let us be grateful to people who make us happy, they are the charming gardeners who made our souls blossom." ***/ST/***

Sarah K. Martin, CSFM

@NEONGRAPEFRUIT

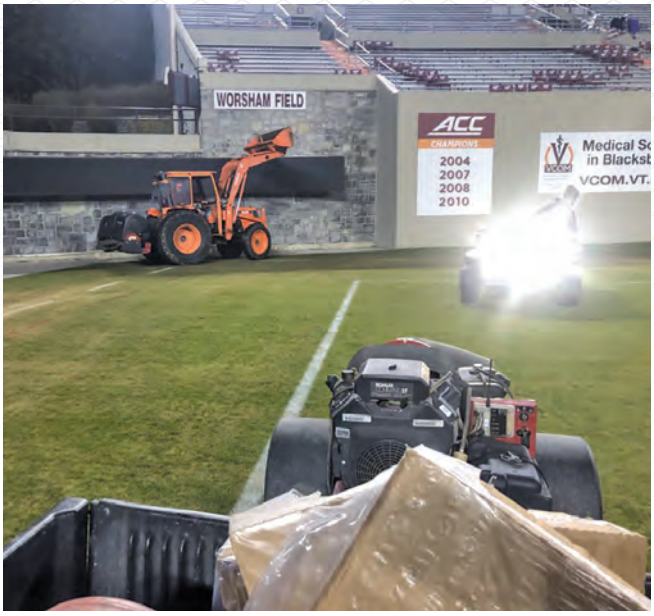
Phoenix, AZ October 25

What nightmares are made of #rattlesnakes #Reach11 #FieldExperts

@IUSPORTSTURF

Bloomington, IN October 25

If you had any questions about whether grow tarps worked see picture below.



@FIELDEXPERTS

Blacksburg, VA October 25

Blow, aerate and seed all in a #DayInTheLife as #FieldExperts!

@BIGCUZELSWICK

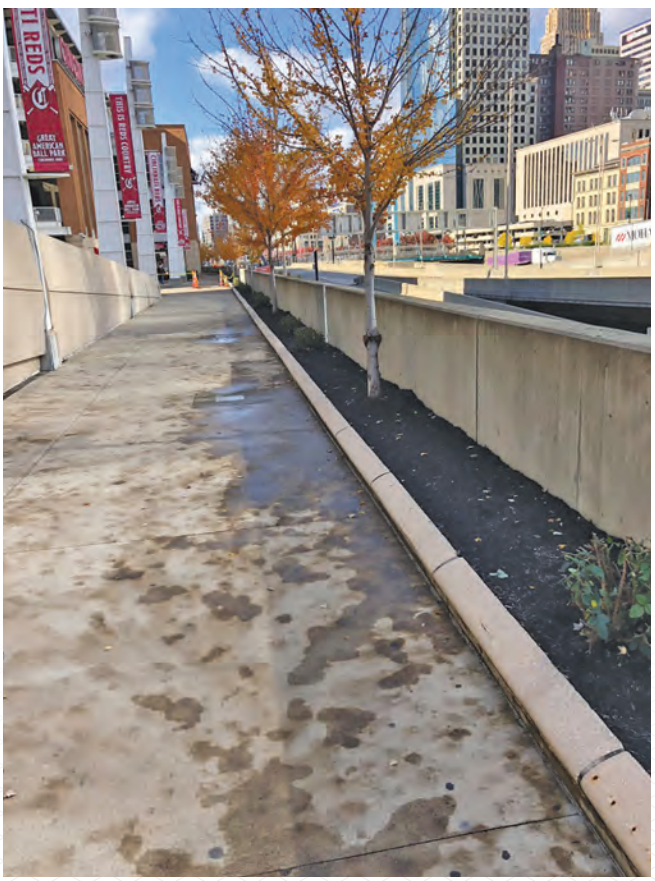
Lexington, KY October 29

SpiderWeb might be one of the cooler things we've came up with @UKsportsturf

@IOWATURFGUY

Iowa City, IA November 5

This is the one day I don't mind working in the rain. Three systems blown out, and six remain!! #blowout18



@TURFSPARTANLORD

Cincinnati, OH November 7

With maintenance slowing down on the field at #GABP we turn our attention to fall cleanups outside the stadium. #MoreThanGrass

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Fort Worth, TX November 2

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@CUBUFFSTURF

Boulder, Colorado November 16

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The correlation between poor playing surface conditions and the absence of experienced sports field management staff is prevalent at the school and municipal level. Playing surface quality expectations should be lowered in the absence of an experienced, trained sports turf manager.

THE IMPORTANCE OF SPORTS TURF MANAGERS FOR SCHOOLS & MUNICIPALITIES

// By BRAD PARK

Trade magazine articles and educational presentations frequently address solutions to agronomic and skin surface management problems faced by sports turf managers. An infrequently addressed problem involves the lack of trained sports field managers at the school and municipal level – sectors of the turf industry that comprise the vast majority of sports field acreage and are used by athletes of all ages and skill levels. General grounds, including common areas and lawns, planting beds, and even trees and shrubs are routinely within the purview of personnel working at schools and other public sector entities. While the job title "sports turf manager" will be used throughout the remainder of this article, "sports turf and grounds manager" is likely a more accurate description of the position.

I frequently perform site visits to sports fields in a University Extension capacity and have made the following anecdotal observation concerning schools and municipalities with high quality sports fields: These institutions have personnel that include a sports turf manager with a high level of autonomy and significant decision-making authority (including purchasing) and a crew whose primary responsibility is the management of **outdoor** assets. This position may exist as a Foreman or Parks Superintendent and report to a Supervisor of Buildings and Grounds, Public Works Manager, or Recreation Department Administrator.

Among the most challenging visits are those where there are high expectation levels for sports field quality but limited investment in personnel and resources to meet those standards. Playing surface quality expectations should be lowered in the absence of an experienced, trained sports turf manager. Administrators, coaches, and athletes are often uncomfortable with the concept of having to accept less-than-ideal field conditions; however, sub-par playing surface conditions are a nothing less than a reality where field use is high and trained personnel and adequate resources are not present.

The correlation between poor playing surface conditions and the absence of experience sports field management staff

is so prevalent at the school and municipal level that I will frequently incorporate the following verbiage (or similar) into my follow-up report writing:

"Athletic Directors, coaches, athletes and others with a vested interest in playing surface quality must understand that the delivery of such a surface will be most likely achieved by an experienced sports field and grounds manager who is onsite on a daily basis and can react and adjust to changes in the surface as they occur. As such, expectations for playing surface quality must take into account the current turf management model that does not involve such a position."

A sports turf manager is likely to anticipate and address the inevitable loss of turf by budgeting for and executing end-of-season re-sodding of high traffic locations such as goal creases.

Sports turf managers can play many roles within municipal and school organizational structures; the entirety of roles are too numerous for the scope of this article. The objective of this article is to highlight several key roles played by sports turf managers to illustrate the importance of this position.

Communicating field conditions and managing high traffic surfaces

The proliferation of synthetic turf at schools and municipalities has provided administrators/event schedulers significant latitude in moving events from natural turf fields to synthetic surfaces when natural turf conditions necessitate such a move. Few public entities will ever have the resources to have a 100% synthetic sports field inventory; natural turf surfaces will always be part of the equation and require active management, including the implementation of time-sensitive cultural practices and traffic management.

Among the most high profile sports fields in any school system is the varsity football "game" field. North American football is played late into autumn, a time of the year turfgrasses in many regions of the United States are highly susceptible to damage caused by traffic. Bare soil (i.e. muddy surface when wet; hard surface when frozen or dry) is the end-of-season norm for those school systems that do not invest in quality sports field management personnel or do not value the judgment of their existing experienced staff. A sports turf manager is likely to anticipate field damage and proactively overseed prior-to and in-season to offset the inevitable loss of turf. He/she is better able to anticipate the need for end-of-season re-sodding or strategic core cultivation, seeding, and covering with a winter turf cover compared to a passive or nonexistent grounds department.

While a coach or administrator may ask the question, "How many events can be held on a natural turf sports field?" and the answer is never black-and-white, an experienced sports turf manager is the principal authority on the durability of his/her field(s). Coaches and administrators should view a sports turf manager with a track record of providing quality playing surfaces as a valuable resource on the question of field durability; that manager is in a prime position to communicate the "costs" associated with holding an event on a field when weather/field conditions could adversely affect playing surface integrity. His/her attempt to negotiate moving an event to a lower priority field in order to protect the higher priority field or perhaps advocate for pushing back a game time to allow surface conditions to improve should be viewed as an act of due

diligence in the eyes of those with field scheduling authority.

Managing contracted services

For many municipalities and school systems, contracted sports field and grounds services involves little more than a public bidding paperwork exercise. There is typically little understanding on the part of municipal or school administrators concerning fertilizers and pesticides, particularly as it relates to what is being applied, why it is being applied, and at what rate. Complicated applicator licensing requirements, confusing state-level regulations, product storage issues, expensive application equipment, and insufficient in-house technical knowledge are frequently cited reasons for outsourcing pesticide and fertilizer applications to a contractor.

Sports turf managers who regularly attend STMA Chapter-affiliated field days tend to have higher quality sports fields and a more extensive network of fellow turf managers, University personnel, and vendors to call upon for assistance compared to disengaged grounds departments.

In many instances, the application of one-size-fits-all fertilizer and pesticide programs to institutional sports field and grounds properties may be the only source of turf nutrition and necessary weed and insect control these surfaces ever receive; elimination of these services could result in the deterioration of sports fields and grounds over time. Other routinely contracted services include custom cultivation (e.g. deep tining and slicing), and field renovation projects that may involve surface milling, laser grading, and seeding and sodding.

A sports turf manager can play a key role in the school/municipality-contractor dynamic by establishing relationships with contractors such that the contractor becomes a contractor-partner. The end result is better matching of facility needs with contractor services.

The hiring of a sports turf manager, and performing more tasks in-house, can provide greater facility-level control of functions otherwise outsourced. For example, performing fertilization in-house can give schools and towns greater control over product selection (e.g. nitrogen source; nutrients and lime relative to soil test results, etc.), rate, and application timing relative to rainfall and field use. In instances where fertilizer applications are outsourced and taking the operation in-house is simply not an option, a qualified sports turf manager is routinely in a much better position compared to a business administrator to communicate the needs of the property to a contractor-partner and guide or author site specific application specifications.

It is recognized that broadcast liquid pesticide applications are not feasible for many schools and towns to complete in-house. A sports turf manager with appropriate pesticide licensing is capable of using a backpack sprayer to perform spot spay applications and/or chemically trim using nonselective herbicides. In many states, a pesticide applicator is required to obtain continuing education credits to maintain his/her license; the ongoing credit accumulation process requires license holders to remain up-to-date on new and existing herbicides, fungicides, and insecticides and how/when to appropriate apply these materials within the scope of applied, practical sports field and grounds management.

A sports turf manager with an active pesticide applicator license is a valuable resource even for those schools and municipalities that outsource all pesticide applications. A manager can work with his/her pesticide contractor-partner to adjust application programs such that appropriate control materials are applied to specific sites when pest thresholds are exceeded. This is a fundamental Integrated Pest Management (IPM) strategy that can ultimately reduce school/municipality-wide pesticide use.

Where to find help

An additional anecdotal observation entails those sports turf managers who regularly attend Sports Turf Managers Association (STMA) Chapter-affiliated events and/or state level University-partnered turfgrass association field days and conferences: These managers have higher quality sports fields compared to disengaged grounds departments. Industry-engaged sports field managers have an extensive network of fellow turf managers, University personnel, and vendors to call upon for assistance. The network expands even further for those sports turf managers who serve on the board of directors for state or regional STMA Chapters, regularly attend the STMA Annual Conference and Exhibition, or have achieved Certified Sports Field Manager (CSFM) accreditation.

It is critical that administrators and supervisors support the continuing education and industry involvement of their sports field and grounds staff by providing the resources and paid-time away from the workplace to attend conferences and meetings and acknowledge that this engagement ultimately enhances sports field and grounds quality.

While sports field management priorities differ widely among individual schools and municipal cultures, where playing surface expectations are high and a qualified sports field manager is not present, a resourceful administrator (e.g. Athletic Director, Business Administrator, Mayor, Councilperson, etc.) is the most probable person within an organizational structure to recognize the importance of a sports turf manager and potentially making the position a reality.

Among the many resources available on the STMA website are sample job descriptions for the role of Sports Turf Manager and Assistant Sports Turf Manager. These documents can serve as templates for the hiring of a new position or re-titling/restructuring of a position vacated by someone who has retired or moved on to a different role. **/ST/**

Brad Park is Sports Turf Research and Education Coordinator, Rutgers University; a member of the Sports Field Managers Association of New Jersey (SFMANJ) Board of Directors; and 2016 recipient of the New Jersey Turfgrass Association Recognition Award.

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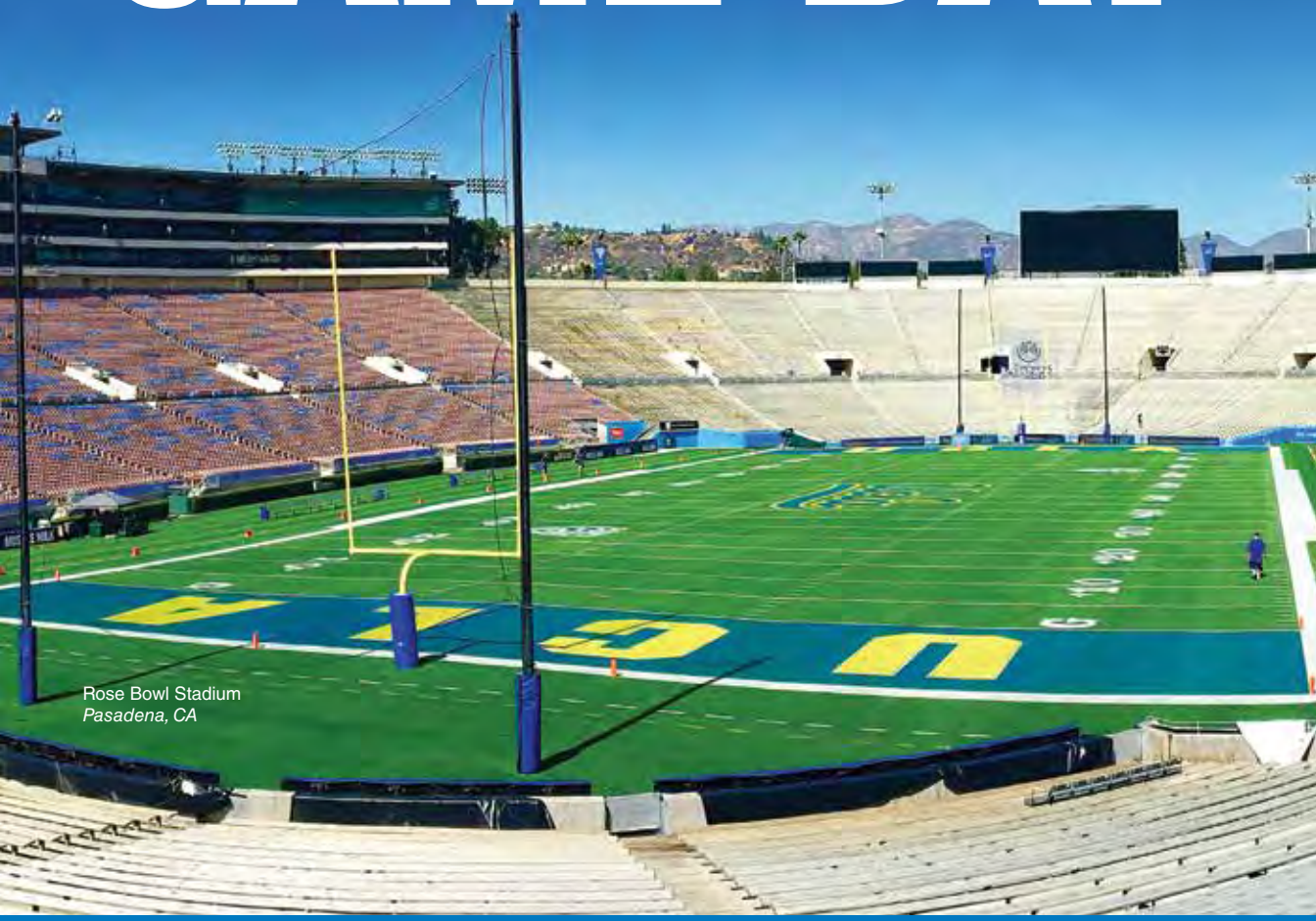

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GET CHECKED OUT!

// By JEFF SALMOND, CSFM

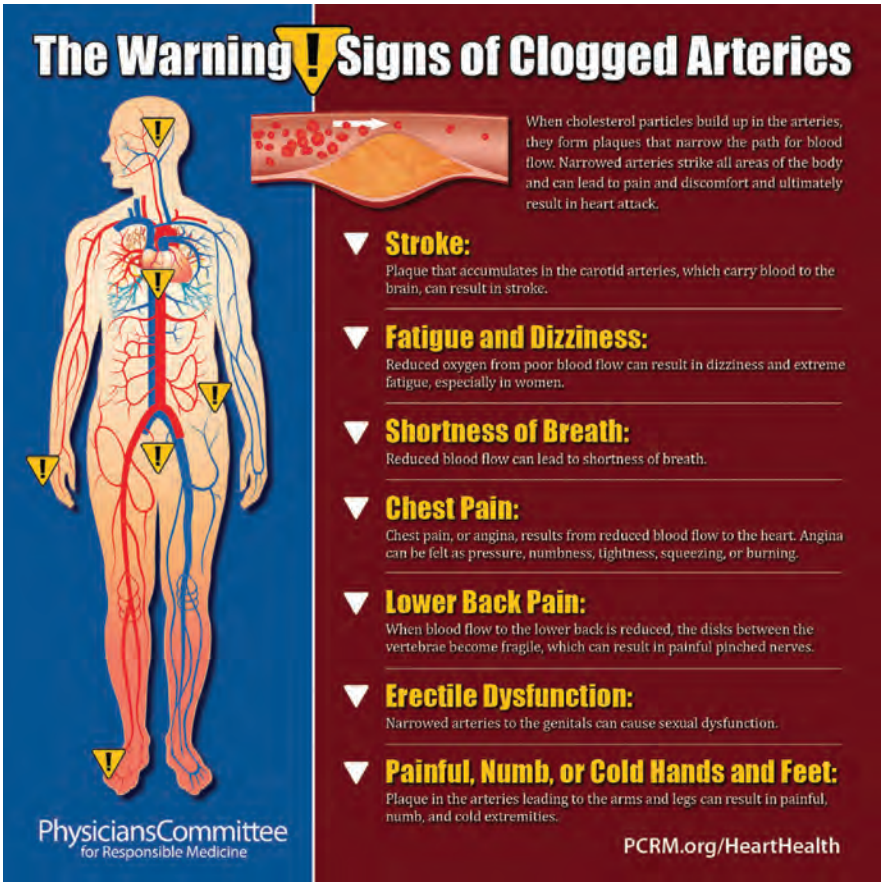
On August 28, 2018, my life was turned upside down . . . for the better. The story begins last year when I turned 45 years old; at my annual physical in May, I asked my doctor about checking into a few things.

I have spent a better part of my life outside. When I was a kid growing up farming I was outside working all the time. Through college and my career as a sports field manager, more than 20 years, I have spent outside working. During my 20's and 30's I thought I was invincible, I didn't need to get checked out, right? I'm young and in shape, I don't have time anyway, etc. We as turf managers take care of our natural grass fields with our lives, let's make sure that we take care of ourselves and our bodies for the success of both.

But over the past 10-12 years, I have thought better about it and have had an annual physical, with about the same results every year. Cholesterol not bad, with a slightly elevated blood pressure. Over the years I thought I could manage my elevated blood pressure with exercise and diet, but let's be honest, sometimes that is hard to do. And I do have some hereditary links such as my grandpa quite possibly died of a heart attack, and my father and younger brother take blood pressure medicine. So I got on blood pressure medicine this past July. Check #1.

I also wanted a skin cancer screening, for good reason. We sports turf managers of all people should be getting checked out, because working outside is what we do. I have always wanted to do a screening at the annual STMA Conference booth is set up, but never made it there. But I was worried that I was going to have to have chunks cut out of my face and arms. I hardly ever wear sunscreen even though I make it available at work for our employees, and have plenty at home. So when I saw the referred dermatologist I was surprised to hear that this fair skinned kid of Scottish descent kid had no issues. Check #2.

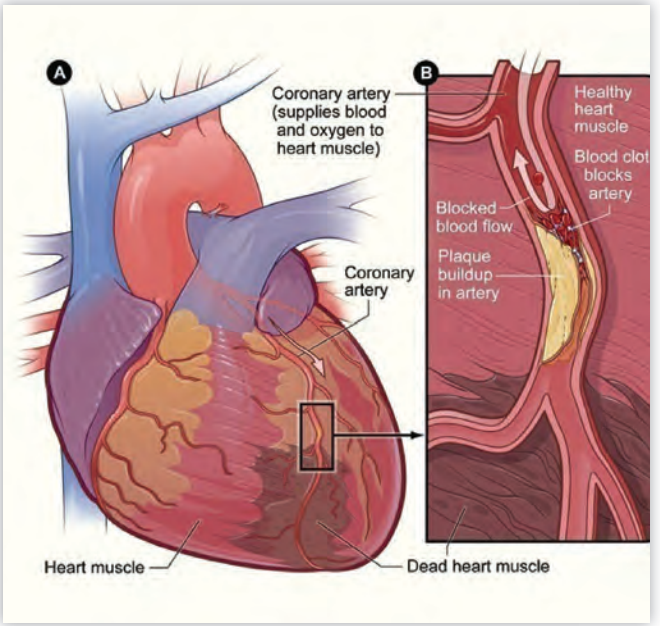
I also asked my primary care physician when do I need to get checked out for "wink-wink" those things men my age are supposed to get checked out. My doctor said not until I was 50. Whew! Check #3, I get a pass for 5 years.

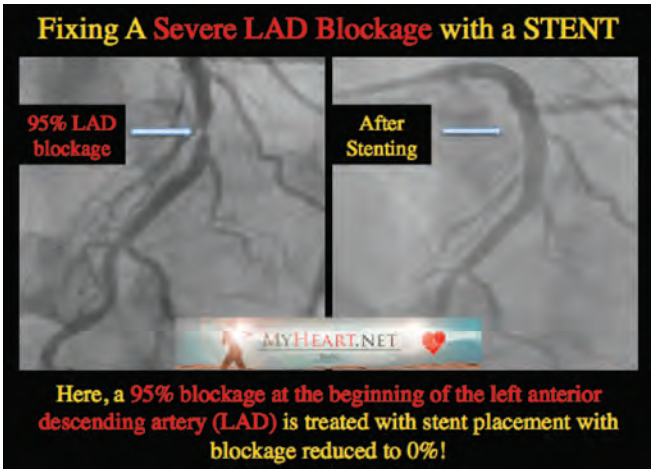


The last thing I asked my doctor about was a stress test. I had heard about them, but really didn't know what they were all about, and frankly didn't think it really applied to me. Not that we work in high stress jobs or anything! For a stress test they hook you up to about 50 cords to your torso and make you run on a treadmill, and they make you run pretty hard, as they monitor your heart. I hadn't run so hard since wrestling practice at Fort Osage High School in Independence, MO.

A couple weeks go by and I revisit my cardiologist to discuss my results. I puff my chest out thinking I overachieved for those 11 ½ minutes and everything is going to be

Jeff Salmond, CSFM





fine, and she tells me that they didn't get all the information they were looking for. Great, gotta run again, I think. But she says no; this time they are going to inject me with dye and scan my heart, like an MRI. Ok cool no problem, I think.

In a few weeks I visit my cardiologist again. She tells me that they just want to double check and do an angiogram on my heart, just to make sure everything is good. What is an angiogram/cardiac catheterization? This is where they stick a tube with a camera into your artery either through your leg or your wrist so that they can, in this instance, check your heart. I asked, "Do I have to?" She tells me if that if she was my wife, she would say yes. And of course my wife, Loida, said yes too.

A couple more weeks go by and it's the last week of August, the week of the home opener at OU. I'm thinking, "Oh this will be a simple procedure and I will be back to work the next day, no problem." This was my mindset. And that was my wife's thoughts as well, because the cardiologist was "just checking." So I get all prepped for the angiogram and in the process, fill out some paper work that definitely elevated my blood pressure. The doctors sedated me pretty good and sure felt like I was in a good deep sleep, finally relaxed and was on the operating

table at noon. Before I was awake and headed to recovery, the cardiologist told my wife that while they were scoping my heart they had put in three stents! My wife's jaw hit the ground. Three stents. Wow. I had 90% blockage and two other places of 80% blockage in my left coronary artery, better known as the widow maker. I was on borrowed time. My cardiologist said most people with 90% blockage have already had a heart attack.

Needless to say I missed my first football game in my career that weekend after my surgery. Not that big of deal that I almost orphaned my wife and kids, right? My wife and I were shocked, how did this happen? I give a lot of credence for my being proactive in getting checked out to the late Darian Daily, as his tragic early passing served as a wake up call.

How did I get this way? Let's be honest. We sports turf managers worry a lot, work long and irregular hours, often have bad eating habits, and work under a lot of stress. And if you are unlucky with the genes like me, there may be some hereditary history that complicates things even more. After my episode, I am now on a carb-free diet, getting regular cardiovascular exercise, and taking multiple medications to keep my blood pressure in check and blood flowing through my stents. I am very lucky, but need to continue this regiment to alleviate this condition in the future.

So I urge you that if you haven't recently, go get checked out. It could save your life. **/ST/**

Jeff Salmond, CSFM, is Director of Athletic Field Management, University of Oklahoma, and a Past President of the Sports Turf Managers Association.

CORONARY ARTERY DISEASE

Coronary artery disease develops when the major blood vessels that supply your heart with blood, oxygen and nutrients become damaged or diseased. Cholesterol-containing deposits (plaque) in your arteries and inflammation are usually to blame for coronary artery disease. When plaque builds up, it narrows your coronary arteries, decreasing blood flow to your heart. Eventually, the decreased blood flow may cause chest pain (angina), shortness of breath, or other coronary artery disease signs and symptoms. A complete blockage can cause a heart attack. Because coronary artery disease often develops over decades, you might not notice a problem until you have a significant blockage or a heart attack. But there's plenty you can do to prevent and treat coronary artery disease. A healthy lifestyle can make a big impact.

Symptoms. If your coronary arteries narrow, they can't supply enough oxygen-rich blood to your heart, especially when it's beating hard, such as during exercise. At first, the decreased blood flow may not cause any coronary artery disease symptoms. As plaque continues to build up in your coronary arteries, however, you may develop coronary artery disease signs and symptoms, including:

Chest pain (angina). You may feel pressure or tightness in your chest, as if someone were standing on your chest. This pain, referred to as angina, usually occurs on the middle or left side of the chest. Angina is generally triggered by physical or emotional stress. The pain usually goes away within minutes after stopping the stressful activity. In some people, especially women, this pain may be fleeting or sharp and felt in the neck, arm or back.

Shortness of breath. If your heart can't pump enough blood to meet your body's needs, you may develop shortness of breath or extreme fatigue with exertion.

Heart attack. A completely blocked coronary artery will cause a heart attack. The classic signs and symptoms of a heart attack include crushing pressure in your chest and pain in your shoulder or arm, sometimes with shortness of breath and sweating.

When to see a doctor. If you have risk factors for coronary artery disease, such as high blood pressure, high cholesterol, tobacco use, diabetes, a strong family history of heart disease or obesity, talk to your doctor. He or she may want to test you for the condition, especially if you have signs or symptoms of narrowed arteries. Of course if you're having heart attack symptoms, call 911!

Coronary artery disease is thought to begin with damage or injury to the inner layer of a coronary artery, sometimes as early as childhood. The damage may be caused by various factors, including smoking, high blood pressure, high cholesterol, diabetes or insulin resistance, and sedentary lifestyle.

Risk factors for coronary artery disease include:

Age. Simply getting older increases your risk of damaged and narrowed arteries.

Sex. Men are generally at greater risk of coronary artery disease. However, the risk for women increases after menopause.

Family history. A family history of heart disease is associated with a higher risk of coronary artery disease, especially if a close relative developed heart disease at an early age. Your risk is highest if your father or a brother was diagnosed with heart disease before age 55 or if your mother or a sister developed it before age 65.

Smoking. People who smoke have a significantly increased risk of heart disease. Exposing others to your secondhand smoke also increases their risk of coronary artery disease.

High blood pressure. Uncontrolled high blood pressure can result in hardening and thickening of your arteries, narrowing the channel through which blood can flow.

High blood cholesterol levels. High levels of cholesterol in your blood can increase the risk of formation of plaque and atherosclerosis. A low level of high-density lipoprotein (HDL) cholesterol, known as the "good" cholesterol, can also contribute to the development of atherosclerosis.

Diabetes. Diabetes is associated with an increased risk of coronary artery disease. Type 2 diabetes and coronary artery disease share similar risk factors, such as obesity and high blood pressure.

Overweight or obesity. Excess weight typically worsens other risk factors.

Physical inactivity. Lack of exercise also is associated with coronary artery disease and some of its risk factors, as well.

High stress. Unrelieved stress in your life may damage your arteries as well as worsen other risk factors for coronary artery disease.

Unhealthy diet. Eating too much food that has high amounts of saturated fat, trans fat, salt and sugar can increase your risk of coronary artery disease.

Prevention. The same lifestyle habits that can help treat coronary artery disease can also help prevent it from developing in the first place. Leading a healthy lifestyle can help keep your arteries strong and clear of plaque. To improve your heart health, you can: quit smoking; control conditions such as high blood pressure, high cholesterol and diabetes; stay physically active; eat a low-fat, low-salt diet that's rich in fruits, vegetables and whole grains; maintain a healthy weight; reduce and manage stress.

JOHN MASCARO'S PHOTO QUIZ

JOHN MASCARO IS PRESIDENT OF TURF-TEC INTERNATIONAL

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ANSWER ON PAGE 33

CAN YOU IDENTIFY THIS SPORTS TURF PROBLEM?

PROBLEM:
Patch of odd-looking grass after first fall frost

TURFGRASS AREA:
Varsity baseball field

LOCATION:
Paramus, NJ

GRASS VARIETY:
Kentucky bluegrass/ryegrass mix

HYBRID SYSTEM BLOWS HOT AND COLD IN ATLANTA

// By MARY HELEN SPRECHER

Listening to Ed Mangan, field director for the Atlanta Braves, discussing the new technology that keeps his field in SunTrust Park emerald green and healthy, you're struck by one thought: why hasn't anyone thought of this before?

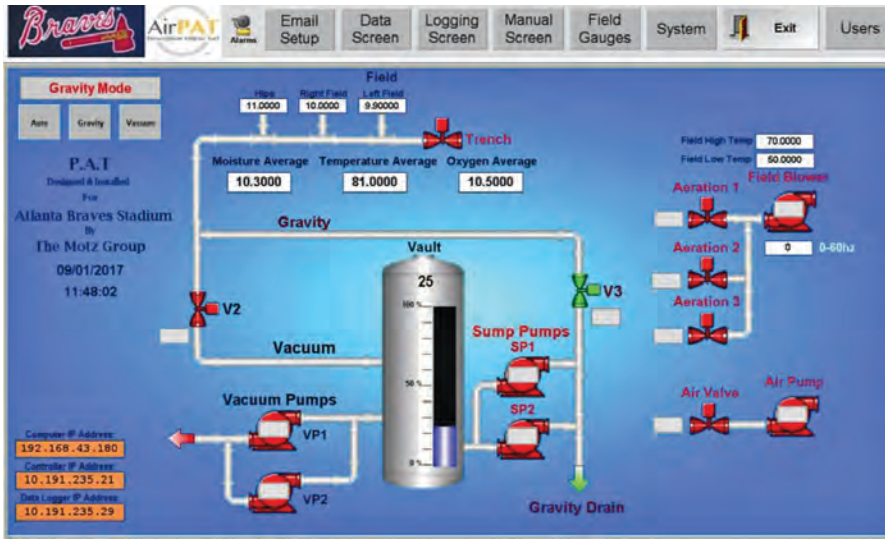
It's not like there haven't been developments all along leading up to this moment. Clay tennis courts have had subsurface irrigation for decades now, and pop-up sprinklers are commonplace. Even athletic field heating isn't new.

But the new home of the Braves has a unique hybrid of all these systems: irrigation from above, in addition to subsurface, plus a drainage system to handle excess water. It also has the advantage of a fan-forced air system that creates an improved environment in the rootzone and a vacuum system that helps pull air down through the field profile and accelerates drainage rates above what gravity is capable of.

The system, called AirPAT, was designed by The Motz Group and rooted in the Prescription Athletic Turf (PAT) system, which was invented at Purdue University by Dr. Bill Daniel in the 1970s (and acquired by The Motz Group in 1994). It was installed in more than 50 stadiums worldwide.

And it is such a striking development that the American Sports Builders Association named it the Outstanding Single Field Facility of the Year. And while the award was presented in December, the technology was several years in the making.

In 2015, Motz added rootzone aeration technology. "Although rootzone aeration was available in the market, we had seen that the uniformity of air distribution across the field could be suspect. Our goal was to understand



BECAUSE THE PIPE SYSTEM IN AN AIRPAT SYSTEM ACTS TO CONVEY BOTH AIR AND WATER, IT WAS CRITICAL TO OPTIMIZE BOTH FUNCTIONS.

> "THE SYSTEM MONITORS FIELD CONDITIONS THROUGHOUT THE YEAR WITH SENSORS IN THE ROOTZONE THAT COLLECT DATA EVERY 5 MINUTES ON MOISTURE, OXYGEN, TEMPERATURE AND DIELECTRIC CONSTANT,"
>
> *– Mark Heinlein*

and solve that issue," says Mark Heinlein, director of technical projects and research for Motz. Enlisting the help of engineers from Advanced Drainage Systems and Ohio University's Russ College of Engineering, they set about the research to meet that goal.

One of the things that Motz came to understand better was how the relationships between pipe configuration and placement, air pressure and flow volume, and aggregate characteristics affected the uniformity of air distribution, as well as drainage rates and patterns, throughout the field. Because the pipe system in an AirPAT system acts to convey both air and water, it was critical to optimize both functions.

Designing with ADS's AdvanEdge panel drain proved the difference. Jim Goddard, chief engineer with ADS (ret.), said, "The use of AdvanEdge, custom perforated only on the bottom for the AirPAT system, provided two to five times more openings than a typical 4-inch round pipe. When laid directly on the watertight geomembrane, it allowed the total overall drainage gravel profile to be thinner. These added up to more air flowing through less gravel, which increased the efficiency of the system."

As part of their research, the team investigated the use of geothermally modified air to increase or decrease the rootzone temperature. In Atlanta, the average annual ground temperature at 10 feet below the surface fluctuates between about 55⁰ F and 65⁰ F, while the average annual air temperature

ranges from a more widely varying 400 F to 850 F. By moving high volumes of air at low pressure through a 1,200-foot horizontal loop of pipe installed below the field, cold winter air is warmed and hot summer air is cooled. Once that energy transfer takes place, the air is pushed up through the profile to moderate the rootzone temperature.

Mangan says that Motz's approach to sustainability means the field isn't the only thing that's green.

"This system gives us the absolute availability of being completely able to recycle all the water that falls on the field," he notes. "Whether it's rainwater or irrigation, we can capture it and pump it back onto the field. And the aeration system uses geothermal air to warm and cool the rootzone, something I don't think as been done before in sports fields.

"Once our temperatures get down – we can have chilly weather in November, and December, with January and February as our coldest months,

"THIS SYSTEM GIVES US THE ABSOLUTE AVAILABILITY OF BEING COMPLETELY ABLE TO RECYCLE ALL THE WATER THAT FALLS ON THE FIELD."

– Ed Mangan

we're almost always using the air," Mangan says. "It can be in the teens but once we put the winter covers on the field and push the air up through, we can easily keep the surface above 36 degrees, regardless of the air temperature."

The Braves field is turfed with Paspalum Platinum TE, which ultimately does not start to thrive until temperatures are consistently in the fifties. "The air system definitely helps green it up a lot sooner," says Mangan. "The more I can keep the soil temperatures up, the better my grass is coming out of winter."

"The system monitors field conditions throughout the year with sensors in the rootzone that collect data every 5 minutes on moisture, oxygen, temperature and dielectric constant," says Heinlein. "The AirPAT system provides grounds personnel with a set of customizable tools that they can use to make more informed management decisions. Better and more detailed information help them produce optimal agronomic conditions, which result in a superior playing surface."

Mangan lauds all the advantages that the AirPAT system gives him: real-time data on growing conditions, water recycling, rootzone aeration, customizable controls, but at its most basic, for him it's about drainage. He notes that Atlanta is famous for its sudden rainstorms, but even when they're heavy enough to flood streets, they aren't a problem for the field.

"We can pull up to 200,000 gallons an hour off the field," he notes. "Once we uncover the skinned areas, we're ready to play. Drainage is key, it's absolutely key. It's the engine that runs the rest of the complex. You need every advantage you can have to move water because if you're not playing, nothing else you have is going to matter. Look at this venue; there are 200 events alone on this field. If we couldn't host something because of field conditions, it could be a huge monetary loss. If you think about how much it costs to lose one event, you can see the system paying for itself. With proper design and management of a field, you have better quality and you can host more events. Field events are revenue and that's what everyone is looking for." **/ST/**

Free-lancer Mary Helen Sprecher wrote this article on behalf of the American Sports Builders Association (ASBA), a non-profit association helping designers, builders, owners, operators and users understand quality construction of many sports facilities, including sports fields. One of the Association's resources is the book, Sports Fields: A Construction & Maintenance Manual. The ASBA sponsors informative meetings and publishes newsletters, other books and technical construction guidelines for athletic facilities including running tracks and sports fields. Info: 866-501-ASBA (2722) or www.sportsbuilders.org.

BUILDING A NEW SOFTBALL FIELD IN UNION CITY, TN

// By STEPHEN CROCKETT, CSFM

Editor's note: *We asked Stephen Crockett, the Director of Turf Management and Athletic Facilities for the City of Union City, TN some questions about the city's building new softball fields. Here's what he said:*

Why did you have to re-build these softball fields?

"In 2017, we began a major park project in which we removed one youth baseball field and a parking lot, to install two new softball fields. This project was undertaken due to the lack of field availability within the park. Initially, the project called for one softball and one baseball field but was later changed, due to the fact that we could play youth baseball or softball on the fields. The project was scheduled to begin in July 2017, but a number of problems in the engineering phase led to a late start date. The actual project would not begin until September, thus causing numerous weather-related problems. These problems would be a recurring theme during the project. "

Did you lead the project? If not, who did and what was your role?

"The only aspect of the project under direct supervision of the Union City Sports Turf Department was the actual

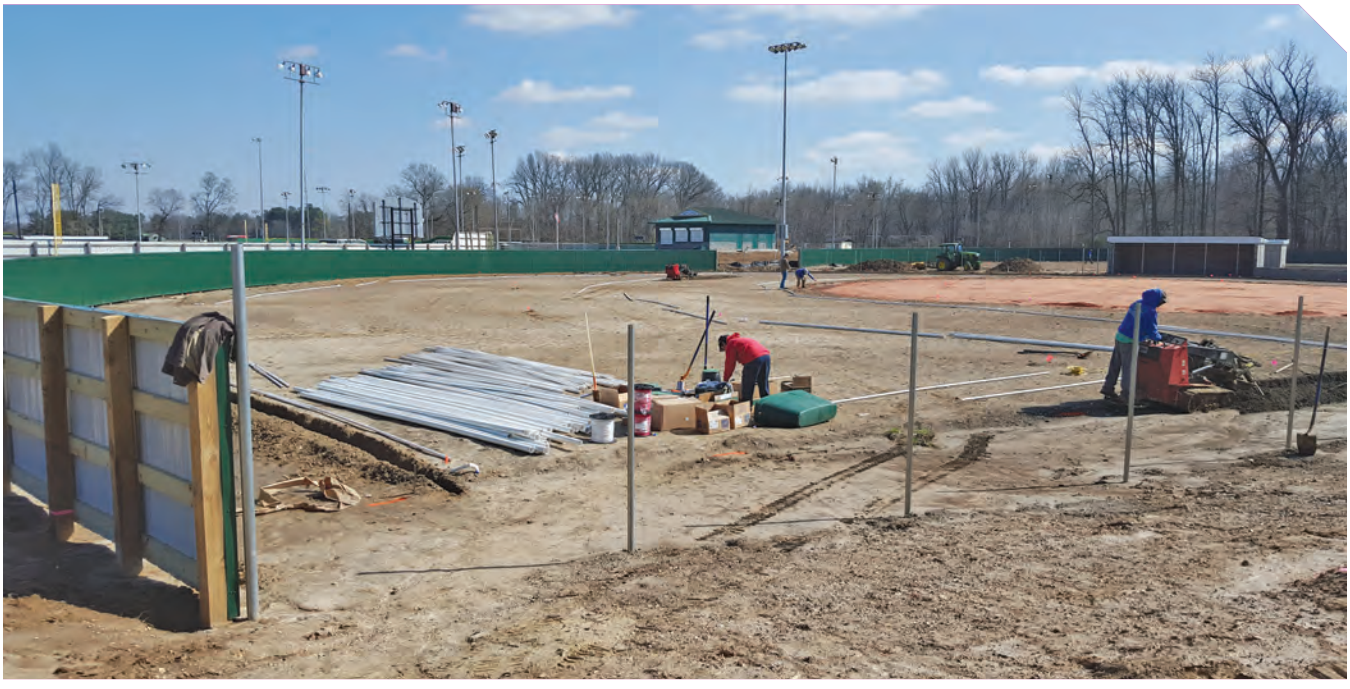
playing surface. The department made all decisions in regards to clay, grass, warning track material and irrigation. The City contracted directly with Tri-Turf Sod Farms of Paris, TN for on-field grading, grass, clay and warning track installation. The department had no control over any infrastructural aspects of the project outside of the fields. Due to the late start date, this would be a major problem as the inside the field was directly related to what was going on around it. As tree removal and outside grading was running behind, the target field date was initially moved to November. The various sub-contractors had major weather issues and the field date was scrapped, and moved to April 2018. The upside of the delay was having a full summer to grow in with a target date of July 2018 for beginning of play."

What kind of grass did you choose and why?

"Initially the project called for Latitude, but this was changed to 419 prior to the actual beginning of the process, as a cost saving measure. 419 is on all of our athletic fields so this was not a major problem. In the beginning with the November target date we overseeded a rye blend on the actual sod farm site; this would become an unnecessary action as the project pushed back to April, and we would have a quality growing period following installation."

Describe how the weather affected the timing and completion of the project.

"The weather in Union City was brutal in winter 2017-2018, and project delays outside of the playing surface led to continued target date changes. The park flooded at one point during the winter creating a major delay. The lights where installed during a hard freeze when cranes



and other equipment could move in. Even as April arrived and the playing surface was installed, contractors outside of the playing surfaces had failed to install sidewalks, backstops and other major infrastructural aspects of the project."

Describe mistakes that were made during con-struction and how they were fixed.

"Initially this project should have been on go in July of 2017, break downs in communication with the engineering firm, failure to complete permit paperwork and several other problems would arise outside of the control of the Sports Turf Department. The project not starting on time is what led to the major weather-related problems.

"The fields were designed for over-the-top drainage, and it was evident that this would not work due to another, non-related project adjacent to the site, where currently drainage is a problem. But on-field drainage could not be installed during the project due to the contract and change order process. Now that the contract has been completed there are plans to retro install on-field drainage."

How are the fields doing now?

"The playing fields and all of the infrastructure around them where completed in August, the usage target date was missed and the fields have still not been open [as of November 27, 2018]. The playing surfaces are in excellent condition, as they have never been played on. They have been overseeded for spring and will go into full use in March 2019."

What other comments do you have re the project?

"The field project was done at the same time as a concession stand/restroom project, and done by the same engineering firm. The projects where not overlaid prior to the beginning of the project. The concession stand is 6 feet above the grade of the park, this has created a quality viewing area of the new fields, but it has also dammed up two of the outfields that where supposed to be over-the-top drained. The actual slope of the concession is adjacent to an outfield wall.

"Two contractors and two projects that overlap do not work out well for anyone; we spent some time as mediators between the two contractors, for example in one location their silt fences crossed one another. A failure to overlay the two projects and communication breakdowns hurt the project.

"This entire process has been taxing on our staff, administrators and everyone involved. The fields will be considered successful, and they will be very nice for the community, but the process was a complete disaster from beginning until end, and I would say personally the worst year that I have had in this business, and it had very little to do with field management." ***/ST/***

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With the iconic farmhouse from "Field of Dreams" in the background, volunteers work on the field last spring. Photo courtesy of Reid Olson.

OFF-SEASON PLANS FROM YOUR PEERS

Tom Nielsen
Louisville Bats

Once the field is put the bed for the winter, I catch up on all the things that have neglected at home. For instance house repairs and yard work. But most importantly, I spend more time with my wife, especially now the kids are grown up and out of the house. We have been doing a lot more things to reconnect for instance going to movies, sitting down and eating dinner together, going for walks, and just really enjoying our time together.

My wife has always has said being the wife of a groundskeeper is like being a single parent for 6 months. We both go into a little depression when the baseball season starts so once the season is over like to take advantage of our time together. I have gotten better at spending more time during the summer with family also but it's taken a long time to learn that.

Field-related things that I do during the offseason include working on my yearly calendar. It is very important to be prepared for the next season so every event and everything I do on the field is put on my yearly calendar so I don't forget anything. I also work on my equipment, order all my supplies, which includes fertilizers, fungicides, clay and conditioners, and anything else I need to be prepared for the next season. My motto is always be prepared for the worst and hope for the best so I work all winter long on being prepared for the next season.

Last but not least I tried to go to the national STMA Conference. I find it the best way to keep up with continuing education, networking and finding my next employees. Going to the Conference is the best way for me to rejuvenate my enthusiasm; each year I see other facilities and enjoy talking with new, young turf managers. It helps my motivation to become mentally ready for the next season.

EDITOR'S NOTE: We note the irony in our having published an article recently about how there is no off-season any more, yet here we are sharing what some STMA members are doing this winter.

Ryan Newman
University of Colorado

Here are some of our work responsibilities in the "off season":

- Snow removal at athletic department parking lots and buildings (entries, sidewalks, and docks)
- Snow removal on synthetic fields for WLAX and CU Rec Center
- Vehicle/equipment preventative maintenance
- Indoor track meet set up and strike (we currently host two meets)
- Clean paint stencils/sleds
- Manage tree lines adjacent to facilities
- Various winter projects on fields/at facilities that will either improve the facility or improve our efficiency

During this off-season, I also will spend time with my family and tackle various projects around the house.

Jeremy Driscoll
St. Marks HS, Wilmington, DE

My off season/winter month activities list is endless. However, here is a short list:

- Snow removal
- Cleaning and repair of miscellaneous equipment and tools
- Build and repair stencils, strings
- Inside work like painting, filter changing, gum removal, setting up and tearing down for various events
- Inventory everything: hardware, tools, supplies, etc.
- Strategize about ways to improve next year
- Go to educational events

Ben Polimer
Town of Weston, MA

Wintertime has come early here in the Northeast (late November). Our first snowfall was in mid-November, and has been unseasonably cold. Leaf work has extended into December and the wet fall has eliminated our deep tine aeration on our high use athletic turf.

Winter for me can be fairly quiet. I do report in for snowstorms but unless it's a blizzard, rarely plow with the crew. More just help with cleanup. Coordinating my guys for removal, after storm cleanups and moving snow around the campuses takes a good amount of time depending on how bad the winter is. I spend most of my time preparing for spring, e.g., putting my bids together for fertilizer and spraying applications, lawn care applications bid, and core aeration. Another bid going out this winter is resurfacing the high school tennis courts.

Other work this winter is working with a designer on a new irrigation system for our JV football field, and lawns surrounding my stadium. Preparing my FY20 budget, which for us starts on July 1 that includes operating budget and capital budget. We are starting a new master plan for our indoor and outdoor athletic facilities. We will be working with a landscape architect and engineers on this.

I will attend STMA Annual Conference in Phoenix this year; I will be speaking on smart irrigation systems. I will also attend the New England Regional Turfgrass Conference in March. NESTMA has their annual meeting during the conference and is rich with 2 days of sports turf education and the largest turf trade show in the Northeast. As NESTMA President, I will be working hard with our Board of Directors in developing our education programs over the winter for 2019.

On a personal note, I have a great vacation with my wife planned in mid-December, fun in the sun. My 4-year-old son will have swim lessons and gymnastics over the winter, and maybe a few day trips on the weekends. Hoping to watch the Patriots into February this winter!

Marcus Dean, CSFM
Advanced Turf Solutions

In college athletics I don't think there is ever an off-season. When I was at Kentucky we would spend our time putting our fields to bed (snow mold application, irrigation winterized, mounds rebuilt and compacted, infields rolled and rerolled, a light topdressing, some fresh seed, and growth covers) and ready for spring, beginning in mid November and completing them after bowl practice in late December. At the same time we were trying to get all the annual maintenance done to our equipment as well. When we came back from Christmas break there were softball and baseball players on campus ready to workout and get ready for the season.

Away from work I just try to spend as much time as I can with my family and friends. I honestly have no hobbies.

On the sales side of the world, I am going to make it around and see all of my customers, check in to ensure they have everything they need and set up for a successful 2019.

Joshua Bertrand, PWE

City of Glendale, CO

My winter months are typically spent managing and preventing seasonal affective disorder (SAD). With the cold days and long nights, it's a challenging transition from the warm and lively summer months. Fortunately, rugby is a bit different as there is an extremely short off-season. The rugby season is over at the beginning of November; however players report for team training during the first week of December, to prepare for the regular season games starting in mid-January. We perform the majority of our safety training courses, educational training and equipment preventative maintenance during the winter months.

Away from work, I wish I were able to say that I have some cool hobby or project which I devote my time to during the off season. However, with such a short off-season and having a family, it's not realistic to try and start something new. I am blessed with a family, so it is great time to use earned vacation leave to reconnect with the wife and kids.

Tim Van Loo, CSFM

Iowa State

- Get home to Michigan for Christmas
- Go to the bowl game
- Turf conferences, national and local
- Go through all equipment (oil changes, sharpen blades, power wash/detail)
- Snow removal
- Trim trees
- Take time away when possible and prepare for the next growing season!

Chris McGinty

City of Framingham, MA

We downsize staff from 24 to 14 with the seasonal work force being suspended at the end of December until March. Since football ends at Thanksgiving for us here in the Northeast we concentrate on fall clean ups at all of our properties. Leaf pick up will continue till the first snow. Hardscape products like picnic tables, park benches and steel trash receptacles, tennis standards are removed, repaired and stored until early spring. All our turf and grounds equipment is inspected and necessary repairs are scheduled and worked on in the winter season. Limited snow removal is handled with remaining staff members. Tree and brushwork will be undertaken as the weather allows during the winter season.

I will be heading to STMA in Phoenix in January and the New England Turf Show in Providence in March.

Looking forward to the Christmas season and some vacation time with my wife who is a schoolteacher and has time off. We're heading to the Ansel Adams exhibit at the Museum of Fine Arts in Boston that vacation week and the Boston Pops Christmas Show. ***/ST/***

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JOHN MASCARO'S PHOTO QUIZ

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ANSWERS FROM PAGE 17

This patch of odd-looking grass was spotted by this groundskeeper in the late afternoon on this varsity baseball field after the first heavy fall frost. He was curious as to what may have caused this off-colored area, so he began to take a closer look. At first he was thinking the area might be yellow nutsedge, as this has always been a problem at this particular sports complex and because they had an extremely wet, warm, and humid summer this year. When the groundskeeper examined the brown area more closely, he discovered that the off-colored patch was actually Kyllinga grass. The heavy frost from the night before had really taken a toll on it and caused it to brown out very quickly as compared to the surrounding grass. To exacerbate things, the temperatures and rainfall amounts at this complex had been above average for the fall and the cold snap came in rather suddenly. The Kyllinga grass started showing up on the complex about 2-3 years ago in their parking lot cracks and curb lines that are adjoining the baseball field but had never invaded the fields until this year.

Photo submitted by Brandon Schmidt, groundskeeper for Paramus Board of Education in Paramus, New Jersey.

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.

Building a new field? Be your own advocate

// By JOE CHURCHILL

ALL PHOTOS COURTESY OF PETERSON COMPANIES, WYOMING, MN

With the proliferation of approved bond referendums fueling the charge, many public school districts are renovating tired ball fields or building new ones. Most often, this work is part of a large-scale project that includes adding new classrooms, art centers and auditoriums, updating HVAC systems, improving existing structures, etc. After reviewing countless vague or ill-written grassing specs penned by architects, engineering firms and other specifiers, I feel it's time to offer some guidance. I don't claim to be a "big picture" expert on writing specifications related to the construction of new ball fields, but over many years, I've seen multiple missteps in the process that should be addressed.

Most times, architects and engineering firms focus most of their attention on the "brick and mortar" pieces of the project. They'll be the first to acknowledge this. They have professional resources that help keep their specs updated and current when it comes to building materials, electronics, security systems, lighting and other major components.

When it comes to understanding the fundamentals of building a new ball field, my experience has been that specifiers focus more on master planning and less on details associated with actually grassing the field. Specifics that detail proper turfgrass selection, establishment and grow-in protocol don't appear very often. Most specifiers rely on sources that oftentimes are not offering detailed, thorough specifications that are, well, specific!

This isn't meant to be a rap on the folks providing the info used to write the specs, rather to point out the need to provide agronomically sound and updated info to these specifiers. Making sure turf varieties best suited for natural sports turf use and ensuring rapid establishment

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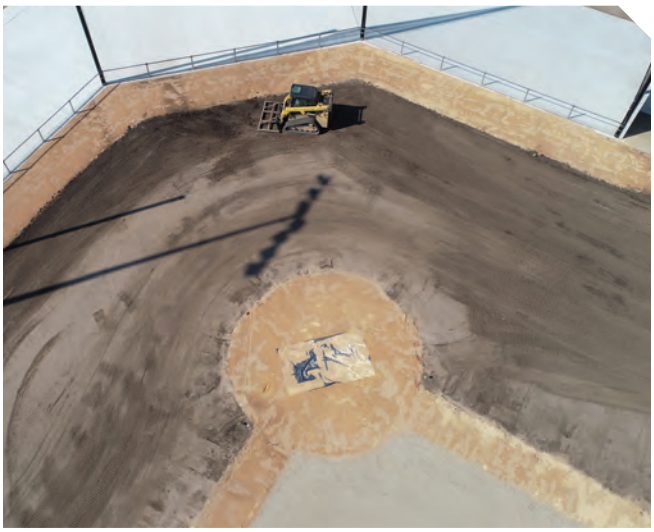
to fit the school district's aggressive timetable usually gets overlooked.

Many architects will partner with engineering firms that have a basic understanding of how a natural sports turf differs from general campus grounds or a home lawn. Yet, like the architects, many engineering firms aren't up-to-date on seed genetics and grow-in practices. "Master" planners may have a limited understanding of how to grow grass.

Architects, engineers, other specifiers

- Enlist the services of a local third party, or at the very least, a responsible source who will help you navigate through field preparation, turfgrass species/variety selection and grow-in procedures keeping the client's best interests in mind.
- Major turf seed companies are excellent resources and willing to help you select seed cultivars that are suited for use on ball fields. Who is better equipped to provide this info than the plant breeder who developed the varieties or the scientist who has spent months and years evaluating them? If your seed specs are more than 10 years old, you're potentially using old genetics that fall short in terms of performance, color, density, speed of recovery and/or pest resistance. And not all varieties within a species are alike. Don't make the mistake of selecting varieties that are not intended for use on high-traffic, intensely used surfaces. You don't know what you don't know!
- Consider using the A-LIST (www.a-listturf.org) to select turf seed varieties that fit your BMP's. The Alliance for Low-Input Sustainable Turf is a consortium of five major turf seed companies and eight major universities with turfgrass breeding or evaluation programs that work collaboratively to support the professional turf industry. Using the A-LIST will help keep your seed specifications genetically current, agronomically sound and environmentally responsible.
- Resist the temptation to fall back on suspect grassing references you have used in the past. For example, state



MEET BIG LEAGUE GROUNDSKEEPER, DAVID MELLOR

David Mellor, Senior Director of Grounds for the Boston Red Sox, will be at **STMA in booth #237 on Thursday, Jan 24, from 1:00-3:00 p.m.**

Be one of the first 100 people to stop by and get a signed copy of his book *"The Lawn Bible: How to Keep It Green, Groomed, and Growing Every Season of the Year."*

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LITTLE WONDER®

Departments of Transportation are not good resources, unless you're seeding roadways, native areas or simply looking for ground cover and erosion control.

- Be mindful of specifying species/varieties and recommended seeding rates in the "spirit" of reducing project costs. Most often, the cost of grass seed and grow-in fertilizer are a mere fraction of the project's total cost. Don't be pennywise and pound-foolish.
- Re fertilizer, don't overlook this important specification component. All too often, the type and analysis of a "starter" or "grow-in" fertilizer is discounted. Many architects and other specifiers are ill equipped to make proper grow-in fertility recommendations. They may insert language like "fertilizer and application rates recommended by the seed supplier" into the written specs. You may be making a big mistake by assuming the seed supplier knows anything about fertilizers and growing grass.

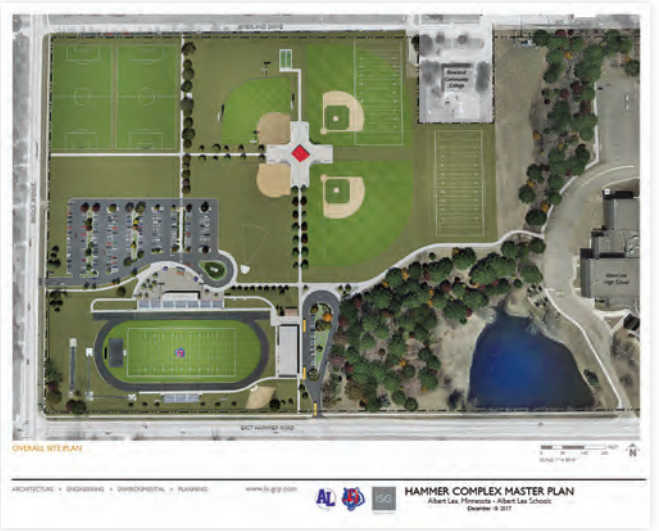


PHOTO COURTESY OF I+S GROUP, INC.

Clients

- Do your homework. Don't assume the architect, engineering firm or third-party contributor know anything about the fine points of turfgrass selection, establishment and long-term ball field maintenance! Talk to other sport turf managers in your area who have recently undergone a similar project. Learn from their mistakes. Ask them to share a couple of successes and to share what things they would have done differently. Avoid pitfalls by learning from your peers.
- Be involved from the very beginning of the design stage. Ask questions, use professional resources such as the STMA and local chapters, local academicians, trusted suppliers and peers to provide information so you know what questions to ask and what red flags to look for during the design, specification and construction stages. Rely on fellow professionals who have experienced the work that you're about to. They can prep you on project details that are so often overlooked or missed.
- Once the project has begun, make every effort to monitor progress regularly. Be involved. Make your own daily inspections, keep asking questions, and make sure the job is done according to the specifications you and the architect have so carefully written. This is your most important job from the day rough drawn plans are sketched to the day you paint the first lines.
- Have discussions about the project completion date and when the fields are expected to be ready for play. It is not uncommon for new field establishment to be rushed and opened for play before the turf is "playable." Premature use of fields can cause irreparable damage in less than a month of use. It is one of the biggest reasons new ball fields fail.
- Remember, you are the person left with the responsibility to maintain these new fields to the high standard you and your administration have established. Improper spec-writing, construction, grow-in and unrealistic project completion dates will create ongoing issues for you long after the architect, engineer, general contractor and seeding/grow-in contractor are gone. **/ST/**

Joe Churchill is a 40-year veteran of the professional turf industry. He serves turf professionals in the sports turf, golf and lawn care markets for Reinders, Inc., a major commercial turf distributor in the Midwest marketing Toro equipment, irrigation, seed, growth products and landscape supplies.

MONITORING AND DOCUMENTING PLAYING FIELD CONDITIONS

// By TOM SERENSITS

EDITOR'S NOTE: This article first appeared in the Pennsylvania Turfgrass Council publication *Pennsylvania Turfgrass*'s Summer 2018 issue. Thanks to Tom Serensits and editor John Kaminski, PhD for allowing us to reprint it.

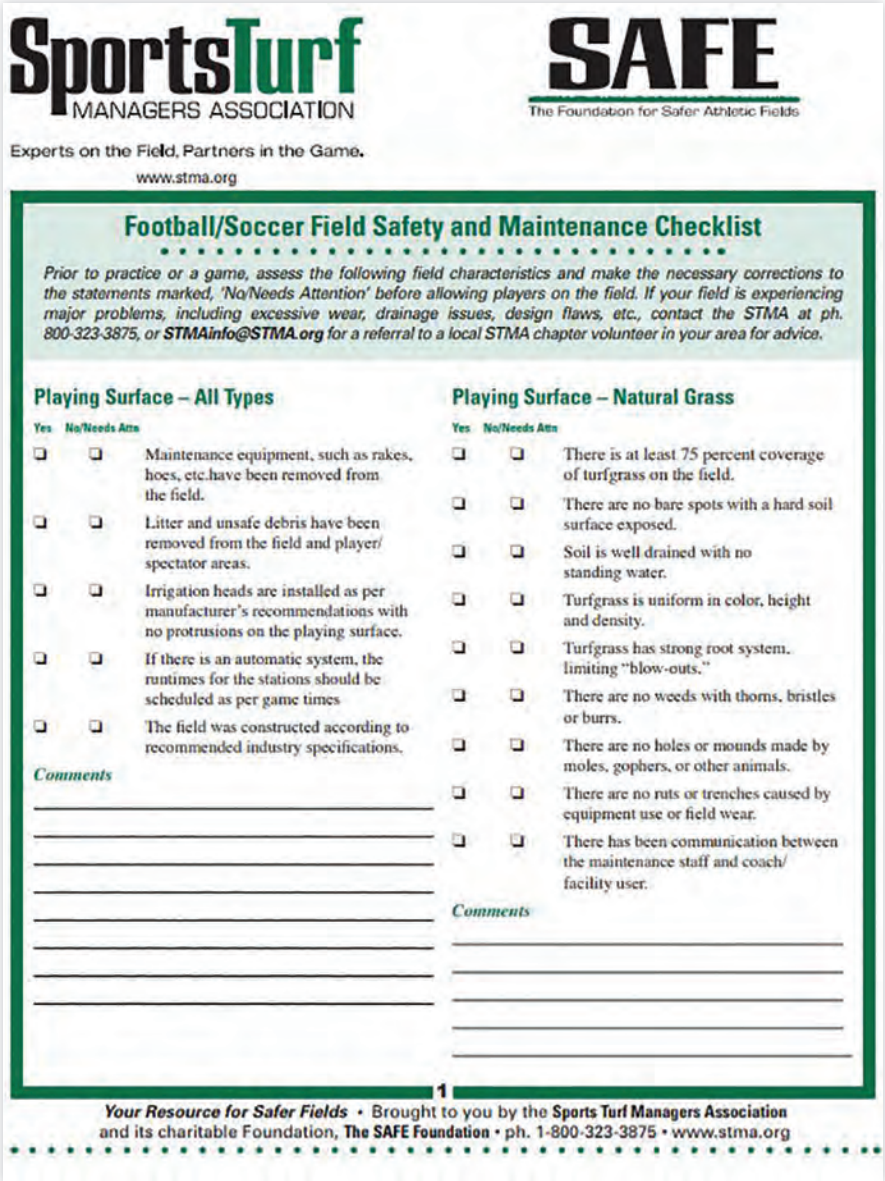
With another fall sports season on the horizon, many of you are likely checking field use schedules, readying your field painters, and making sure you have enough seed to get you through the season. A field manager's "to-do" list certainly grows as the calendar changes to fall. One key aspect of preparing for the upcoming season can sometimes be overlooked – a proper and thorough field inspection.

Field inspections help reduce injury risk and liability by identifying issues and allowing time to correct potential hazards before the players hit the field. In fact, the NFL now mandates that all fields be inspected prior to all games based on league-mandated criteria. Each field manager is then required to submit an official report following the inspection within 72 hours prior to kickoff. Following a similar program of routine field inspections demonstrates a proactive approach and commitment to athlete safety.

Natural turf fields

There are a number of potential hazards that require attention on natural turf fields. Holes and depressions can increase injury risk and should be filled in as soon as possible using sand and/or soil. When time allows, the area should be preferably sodded if it is large or, at a minimum, the area should be seeded as soon as possible. Perennial ryegrass is often the species of choice as it germinates and matures quickly.

Be on the lookout for any debris and/or foreign objects such as metal helmet accessories and nails used to string out the field during the painting process.



SportsTurf MANAGERS ASSOCIATION

SAFE
The Foundation for Safer Athletic Fields

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www.stma.org

Football/Soccer Field Safety and Maintenance Checklist

*Prior to practice or a game, assess the following field characteristics and make the necessary corrections to the statements marked, 'No/Needs Attention' before allowing players on the field. If your field is experiencing major problems, including excessive wear, drainage issues, design flaws, etc., contact the STMA at ph. 800-323-3875, or **STMAinfo@STMA.org** for a referral to a local STMA chapter volunteer in your area for advice.*

Playing Surface – All Types

Yes	No/Needs Attn	
❑	❑	Maintenance equipment, such as rakes, hoes, etc.have been removed from the field.
❑	❑	Litter and unsafe debris have been removed from the field and player/spectator areas.
❑	❑	Irrigation heads are installed as per manufacturer's recommendations with no protrusions on the playing surface.
❑	❑	If there is an automatic system, the runtimes for the stations should be scheduled as per game times
❑	❑	The field was constructed according to recommended industry specifications.

Comments

Playing Surface – Natural Grass

Yes	No/Needs Attn	
❑	❑	There is at least 75 percent coverage of turfgrass on the field.
❑	❑	There are no bare spots with a hard soil surface exposed.
❑	❑	Soil is well drained with no standing water.
❑	❑	Turfgrass is uniform in color, height and density.
❑	❑	Turfgrass has strong root system, limiting "blow-outs."
❑	❑	There are no weeds with thorns, bristles or burrs.
❑	❑	There are no holes or mounds made by moles, gophers, or other animals.
❑	❑	There are no ruts or trenches caused by equipment use or field wear.
❑	❑	There has been communication between the maintenance staff and coach/facility user.

Comments

1

Your Resource for Safer Fields • Brought to you by the **Sports Turf Managers Association** and its charitable Foundation, **The SAFE Foundation** • ph. 1-800-323-3875 • www.stma.org

The STMA's field inspection checklist is available at stma.org.

If the field has an in-ground irrigation system, check that all sprinkler heads have fully retracted below the surface as designed and that any quick-coupler keys and similar items have been removed and valve caps have been properly placed in the closed position. It is a good practice to cover plastic valves box covers and similar covers with synthetic turf or another 'non-slip' covering as there is a potential for

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P2 Series Sprinklers | *T7 Series Rotors* | *TS90 Series Rotors* | *TS120 Series Impact Sprinklers* | *TS170V Series Rotors*

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Monitoring surface hardness with a Clegg impact soil tester.

players to slip on these items, especially when wearing cleats. Also check to be sure there are no depressions in the area around each irrigation head and valve box.

High-use areas like goalmouths and the middle of the field require extra attention as these areas are at high risk for turf loss and elevated surface hardness. Monitor the amount of turf cover and overseed regularly. As on synthetic fields, surface hardness can be tested using a Clegg Impact Soil Tester. All areas of the field should be under 100 Gmax when measured with this device. As hardness levels increase, be sure there is adequate soil moisture since a dry field is typically a hard field. On synthetic fields, surface hardness can be tested using a Clegg Impact Soil Tester. All areas of the field should be under 100 Gmax when measured with this device. As hardness levels increase, be sure there is adequate soil moisture since a dry field is typically a hard field.

Goal posts and sideline areas should be inspected, and potential obstacles should be moved away from the immediate sideline area to create a buffer zone. After non-football events, the field should be checked for metal debris as previously described in the synthetic turf section.

Also be sure to inspect fences and any transition areas such as a transition from turf to a running track surrounding the field. The transition between surfaces should be smooth with minimal change in elevation.

Synthetic turf fields

If you have a synthetic turf field, there are several potential hazards that require regular inspection. The first is carpet seams. Properly functioning (non-separating) seams do not pose an elevated risk. However, if the seams begin to fail and separate, they create potential tripping hazards.

When a synthetic turf field is installed, large sections of carpet are rolled across the width of the field. These carpet pieces are 5 yards wide and extend completely across the width of the field. As a result, seams are typically located on every 5-yard line. However, that is not always the case; sometimes the seams are located at the 2.5-yard lines or other locations. Once you locate the seams on your field, walk along each seam and check for separation, paying particular attention to high-use areas.

In addition to the seams going across the field, there are seams at each inlay. While inlays reduce or eliminate the need to paint field markings, careful inspection is needed to ensure they are flush with surrounding turf. All inlay seams should be inspected regularly for separation. Common inspection guidelines state that any seam that has separated more than 3 mm should be remediated according to the field manufacturer's recommendations.

Particular attention should be paid to complex logos that contain many small inlays as these contain many seams and are

Separating or uneven seams and inlays should be fixed using manufacturers' recs.

often located at the highly used center of the field. Any separation, peeling, or unevenness should be addressed immediately.

Wrinkles in synthetic turf can sometimes develop over time. Wrinkles can also create a tripping hazard. Again, follow the field manufacturer's recommendations for repair.

Check for depressions on high-use areas of the field resulting from low levels of infill. If the field is used for lacrosse, pay extra attention to the goalmouth areas. Lacrosse goalmouths are notorious for crumb rubber infill displacement and resulting depressions. If holes and depressions are found, additional crumb rubber infill should be installed in these areas.

A few buckets of crumb rubber likely can do the job. Spread a thin layer of rubber onto the area, brush it into the fibers with a broom and repeat until the infill is level with surrounding turf.

For bigger areas, larger pieces of equipment such as a topdresser can be used to spread crumb rubber across the field. No matter the size of the area, it is important to use the same size and type of rubber originally installed by the turf manufacturer.

Infill depth testing is also an important component of a field inspection. An easy way to measure infill depth is with a fire-proofing depth gauge. These gauges are available online and typically cost less than $20. Be sure to obtain your target infill depth from

A magnet removes potentially dangerous metal objects from the field.

your field manufacturer. Maintaining proper infill depth is important for the longevity of synthetic turf fibers and is key to keeping field hardness in check.

Field hardness can be measured with a Clegg Impact Soil Tester. All areas of the field should be under 100 when measured with this device. A guide detailing testing and managing surface hardness can be found at *http://plantscience.psu.edu/research/centers/ssrc/resources.*

The field should be free of any and all foreign objects and debris such as garbage, leaves, etc. Blowers and sweepers specifically designed for synthetic turf can help clean the field before and after games.

If the field has been used for any non-football events, such as a graduation, walk the field and look for nuts, bolts, screws, nails or any materials that may have been used in construction of the stage or a similar structure. The amount of metal debris that is sometimes found on fields can be both surprising and dangerous. At professional stadiums, field managers typically go over the field with a large magnet after events such as concerts to remove metal debris. Magnets capable of being pulled by utility carts are available for purchase and are a useful tool if your field regularly hosts non-football events.

Be sure to inspect sideline areas for obstacles such as trashcans and benches. These types of items should be far enough away from the playing surface that a player has a chance to stop before coming into contact with them. A minimum buffer zone of 25 feet is commonly recommended.

As with natural turf, goal posts should be checked to ensure they are properly anchored. Goal post pads should be installed for all games and practices.

Document your inspections

A field inspection checklist is a great way to be sure to not overlook any elements of your field inspection. It also provides a record that the field was inspected should an injury occur and the safety of the field be questioned. It is also a good idea to take pictures as a way to document field conditions throughout the year.

You can make your own field inspection checklist or use one that has already been created. The Sports Turf Managers Association has a thorough field checklist that is available under the 'Knowledge Center' on their website, stma.org. The website also contains "how to" videos for inspecting synthetic, natural, and baseball/softball fields.

Routine field inspections demonstrate a proactive approach to athlete safety. Hazards both on the field of play and the surrounding area can be identified and remediated before they pose an injury risk, creating a safer environment for all field users. **/ST/**

Tom Serensits is manager of the Center for Sports Surface Research on the Penn State campus at University Park, https://plantscience.psu.edu/research/centers/ssrc

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The Cub Cadet Infinicut is the future of turf management. A user-adjustable cutting system and dynamic return floating head design provides a uniform quality of cut and appearance every time, even under varying conditions. The Infinicut's customizable configuration, environmentally friendly electric drive, and unmatched versatility offer a cost-effective solution to overall turf management and improved health of any playing surface.

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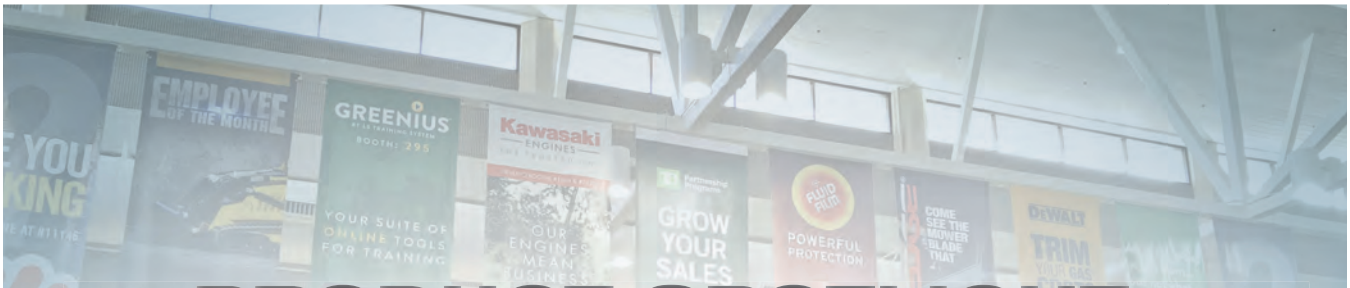

PRODUCT SPOTLIGHT: STMA CONFERENCE 2019

The Sports Turf Managers Association's 30th Annual Conference and Exhibition is January 22-25 in Phoenix. As the premier event in the sports turf industry, its Exhibition brings STMA Commercial members and other companies together to display more new products. The following special advertising section provides a look at a few companies that will be exhibiting with a sneak preview of products they will have in Phoenix.

GRIGG™ GARY'S GREEN ULTRA® - PROVEN FOLIAR® NUTRITION FOR TURF

Gary's Green Ultra is a sophisticated, fully loaded foliar product that contains a full nutrient package, sea plant extract, natural surfactants and a buffering agent. The sea plant extracts contain natural bio-stimulants and amino acids. Gary's Green Ultra is an excellent tool to boost turf health and stress tolerance. It is a customer favorite due to the quick visual response and built product safety it provides.

GRIGG has been a leading provider of science-based, research proven nutrition technology for turf since 1992. All GRIGG products are proven and tested, and undergo rigorous university trials in the lab and on the field. When the world is watching and turf managers need a brand they can trust to perform, they turn to GRIGG. GRIGG is used on many of the world's most notable golf courses and sports fields – including the granddaddy of them all, The RoseBowl® Stadium.

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BOOTH #701

KROMER FIELD COMMANDER® PAINT MIXING STATION

Developed to SAVE field painting crews TIME and EFFORT!

- 175 or 300 gallon will mix and store ready-to-use paint for weeks, now with a heavey-duty Leeson motor.
- Adjustable agitation timer, water meter, Hypro paint transfer pump with quick couplers
- Easy-clean bucket rinse and internal tank rinse nozzle, cone bottom tank for 100% positive drain
- Ultra-fine filtration system, 2"x2" welded frame with heavy-duty diamond plate flooring

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FIELDTURF GENIUS

The future has arrived! Introducing FieldTurf Genius, the world's first smart sports field. This game-changing technology is designed to help maximize the longevity, playability and safety of your sports field. As well as allow you to track maintenance, plan more efficiently and monitor usage.

How does it work? Two sensors are mounted to the facility lights or stadium press box and automatically process and convert the recordings into anonymous data for analysis. Through advanced computer vision and deep learning algorithms, live field participation is translated into tangible data. When your field reaches certain milestones, a maintenance alert is issued indicating the needed service: brushing, aerating, raking or sweeping. After the maintenance is completed, an updated heat map allows you to track the efficiency of the session.

Connect your field with FieldTurf Genius.

www.fieldturf.com

BOOTH #125

CUB CADET/MTD

Environmentally friendly, efficient and flexible, the Cub Cadet® Infinicut® is the future of turf management. Its dynamic return floating head design ensures contact between the turf and bedknife remains consistent, resulting in uniform quality of cut and appearance every time, even under varying conditions. The unique design and flexible set-up allows for infinite and precise operator tuning, providing height-of-cut adjustments within .10mm increments.

The all-electric lithium powered drive reduces noise and vibration for the operator without sacrificing power and eliminates fuel cost and potential for fluid leaks.

Coupled with a wide-range of TMSystem™ cassettes, the versatility of the unit extends well beyond simply cutting turf. The cassettes provide aeration, de-thatching, grooming, striping, and post-match debris clean-up. The vibration cassette accelerates the recovery following aeration.

The Infinicut's flexible set-up, environmentally friendly drive, and unmatched grooming versatility provide a cost-effective solution to overall turf management and improved health of any playing surface.

www.CubCadetTurf.com/Infinicut

BOOTH #117

PENNINGTON SEED

Introducing Arden 15, high quality Bermuda turfgrass with excellent color, cover, density and superior early spring green-up. This highly developed seed is a two-clone intraspecific hybrid that provides a more uniform turf compared to other seeded cultivars. Arden 15 is replacing Princess 77 as Pennington's main offering in the Bermudagrass segment and has an improved cold tolerance with finer leaf texture and faster grow-in versus Princess 77. These qualities make Arden 15 an ideal solution for planting in transitional markets as far north as Tulsa, Louisville and Richmond. This variety is replacing Princess 77 as Pennington's main offering in the Bermudagrass segment.

Arden 15 is named after the late Dr. Arden Baltensperger, who participated in the collection of the original plants used in the breeding process and served as a consultant for the program. His academic achievements for his breeding of turf-type and forage Bermudagrass have been recognized worldwide.

www.pennington.com

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ELIMINATE DUST ON EXISTING FIELDS

Hilltopper Liquid Conditioner coats, wets and binds soil particles together, mechanically similar to water. It provides a long-term, reworkable, and dustless playing surface for skin infields and soil/aggregate warning tracks.

This innovative liquid polymer can be used to enhance standard infield mixes and warning tracks or in conjunction with Hilltopper Waterless Infield or Warning Track systems.

- Penetrates the soil, coats soil particles like water
- Will not evaporate, freeze, or leach
- Remains in the soil, creates long term wetting action
- Soil remains workable and still allows water to penetrate

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BOOTH #809

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"Fast and effective large area athletic turf maintenance equipment. All fds Dethatching/Conditioning models are designed, engineered and assembled to meet international manufacturing code requirements. Operating widths vary from 46 inches to 92 inches and can be towed with either a low hp tractor or 4-wheel utility vehicle. Variable tension settings tackle the toughest of turf conditions. Free-floating sections articulate to conform to undulations and steep slopes. Attachments include drag mats for smoothing infields and a magnetic sweep to help ensure player safe playing conditions.

fds units are all engineered for consistent and accurate aeration to promote in-season healthy turf and faster spring recovery. 16-inch tines assist synthetic fibers to stand upright and reduced compaction. Long-term tine durability cuts down on operating costs - perfect for all budgets. The fds models are built for every professional field - fabulous for amateur athletic fields.

Don't waste time...work smart...the fds way!

http://www.woodbayturftech.com/

BOOTH #304

Committee sign up opens Feb. 1

STMA's many committees provide important direction to the Board and staff in implementing its three-year strategic plan. Committees and some Task Groups are appointed annually by the President early in the new year, with work commencing in March. Other Task Groups may be appointed throughout the year if the Board of Directors needs input on specific issues.

STMA is very fortunate that its membership has a strong culture of volunteerism. Each year more than 200 people sign up to serve on Committees and Task Groups. The insight that these members bring to discussions truly makes a difference in the success of STMA's programs and service offerings.

Noted below are the current STMA Committees, their charges, and the approximate number of volunteer hours needed. Please consider serving on one this year!

- **AWARDS:** To judge the association's awards program applicants selecting the Field of the Year winners and the Minor League Baseball Sports Turf Manager of the Year; to develop strategies to enhance the programs (approx. 20 hours mid-Oct. to mid-Nov.).
- **BYLAWS:** To develop association bylaws, which are fair and enforceable, and clearly define the expectations for membership, governance processes and board of director's service (approx. 3 hours per year). This Committee may or may not need to address bylaws, dependent upon Board actions that may affect the Bylaws language.
- **CERTIFICATION:** To develop strategies to grow the number of certified members; to consistently monitor the program and recommend enhancements to ensure that the program is the top achievement for sports turf managers (approx. 12 hours per year).
- **CERTIFICATION REVIEW PANELS:** (CSFM Members ONLY) To consider alleged violations of any Application or Certification Standard. Panels may be established as standing panels. Members may be assigned to one of three panels. These panels are called into operation only if there is a concern of possible violation.
- **CHAPTER RELATIONS:** To create a chapter structure that is beneficial locally and nationally; to financially assist chapters with their administrative, operations and educational efforts; to facilitate the sharing of best practices (approx. 6 hours a year).
- **COMMERCIAL ADVISORY COUNCIL:** To provide a forum to exchange ideas on how STMA can better serve and engage its commercial members and how this segment can help to advance the association (2-year commitment, approx. 16 hours per year).
- **CONFERENCE EDUCATION AND TOURS SUBCOMMITTEES:** To develop all content, sessions, workshops and off-site venues, and select speakers and moderators for the next year's conference that will make it a "must attend" event for members and nonmembers; to recommend strategies that will drive attendance to the exhibition and will add value to exhibitors (education, approx. 12 hours over 2 months, tours, approx. 8 hours per year).
- **CONFERENCE BOWLING:** To organize the aspects of the SAFE Foundation Bowling Fundraiser.
- **EDITORIAL:** To ensure that the STMA magazine contains information relevant to the sports turf manager; to provide ideas and contacts for articles for publication (approx. 6 hours per year).
- **ENVIRONMENTAL:** To develop environmental strategies that position STMA and its members as leaders in environmental stewardship and the related health and safety issues that impact fans and players (approx. 12 hours per year).
- **ETHICS:** To provide a fair and unbiased council to investigate claims of ethics violations, determine if the claim has merit, and shepherd the appeals process. (This Committee is called into operation only if there is an ethics violation claim.)
- **FINANCE & AUDIT:** To provide oversight of the STMA's financial resources by reporting information to the Board of Directors. (Approx. 5 hours per year)
- **HISTORICAL:** To preserve the history of the association and the profession (approx. 24 hours per year).
- **INFORMATION OUTREACH:** To develop educational and informational opportunities for members to enhance their personal and professional development (approx. 8 hours per year).
- **INNOVATIVE AWARDS JUDGING:** To judge the innovative awards program, ensure a fair judging process and enhance the program as necessary. (Non-commercial members only.)
- **INTERNATIONAL:** To position STMA as a global leader in sports facility management and make STMA the 'go-to' resource for those who work internationally in the industry (approx. 8 hours per year).
- **MEMBERSHIP:** To develop initiatives to drive membership growth and retention; to recommend programs that add value for each member (approx. 8 hours per year).
- **NOMINATING:** The Immediate Past President chairs this committee selects its members. It must have representation from each category of membership.
- **PAST PRESIDENT'S ADVISORY COUNCIL:** Purpose: To advise the STMA Board on issues pertaining to the past, present and future of STMA. (Limited to STMA Past Presidents.)
- **SCHOLARSHIP:** To judge the recipients of the SAFE Scholarships, the Terry Mellor Educational Grant, the Gary Vandenberg Internship Grant, the Darian Daily Legacy Award, and the Leo Goertz Membership Grant; to develop strategies to enhance these programs (approx. 12 hours over one-month mid-Oct. to mid-Nov.).
- **STUDENT CHALLENGE:** To develop the annual student challenge exam protocols and assist in proctoring the exam as needed (approx. 8 hours per year and volunteering at the conference)
- **TECHNICAL STANDARDS:** To help determine standards and best management practices needed in the profession; to guide the

work of ASTM on developing sports field and facility standards (approx. 4 hours per year)

- **TECHNOLOGY TEAM (WEBSITE, SOCIAL MEDIA):** To oversee STMA's communication and membership platforms to insure they are current, cohesive and serve members' needs (approx. 4 hours per year).

Look for information on how to sign up at STMA.org on February 1. Members will also find the link in the STMA February News Online.

STMA'S 2019 INNOVATIVE AWARD WINNER: ECHO ROBOTICS

STMA proudly awards ECHO Robotics its "Innovative Award" for their Autonomous Mower TM-2000. The self-driving, self-charging, self-sufficient unit mows up to 5 acres of turf efficiently while finely mulching clippings to promote turf health. Eight times more efficient than traditional units, this mower saves time and labor for facility managers, and can be remotely commanded via web platform or mobile app.

STMA's Innovative Award Program recognizes STMA commercial company members who've developed a product, service, equipment or technology that substantially enhances the efficiency and effectiveness of the sports turf manager and/or makes the playing surfaces safer and/or more playable for athletes. Chosen by STMA's Innovative Awards Task Group, entries are evaluated on a wide range of qualities including whether or not they fill a need; are creative; save time and resources; are cutting-edge; make a task easier or more productive; improve quality; protect the environment and improve efficiency.

STMA chatted with ECHO Robotics about their winning innovation, how it helps sports turf managers and what innovation means to the industry:

STMA: *When was the Autonomous Mower TM-2000 introduced?*
ER: The TM-2000 will officially be introduced to the North American market during the 2019 STMA Show in Phoenix. An earlier version of the product has been available in Europe under the Belrobotics brand and is currently maintaining over 1,000 soccer fields.

STMA: *What was the process like of bringing it to fruition?*
ER: Prior to introduction to the North American market the product has been completely overhauled, including a strengthened frame, improved motors, new electronics, new firmware with enhanced functionality, improved communication capability and user interface. The new prototypes have been tested in the US for more than 2 years and are now ready for release.

STMA: *What inspired you to create it?*
ER: Robotic mowing has been growing at a rapid pace in Europe, where more than 500,000 units are sold annually. However, the focus has been on homeowner applications. North America has been slow to adopt robotics even though the need exists. It is well documented that there are shortages of labor and resources for producing safe, quality playing surfaces. Sports Turf Managers are constantly asked to provide more with less, so our robots can address their concerns while providing additional benefits to their turf.

Continued on page 57

FIELD OF THE Year

FIELD

5/3 BANK STADIUM

KENNESAW STATE UNIVERSITY

LOCATION

Kennesaw, GA

Category of Submission: College Sporting Grounds

Sports Turf Manager: Shane Hohlbein, CSFM

Education: Bachelor's in Turfgrass Science from The Ohio State University

Title: Sports Turf Manager

Experience: I have had a wide array of experience in the sports turf industry. During my time at Ohio State I worked for Camargo Country Club and Golden Bear Golf Club participating in internships. Following graduation I joined the Jacksonville Jaguars as the 2nd Assistant Sports Turf Manager for two seasons maintaining the stadium and three practice fields. I then moved back home with my wife to Cincinnati where I worked for Hamilton County/Cincinnati Bengals for a season maintaining the stadium, practice fields, and landscape areas. Wanting to gain more experience, I found a job with The Motz Group in Cincinnati. Working for The Motz Group helped me learn the fields from the ground up. I got to work on several aspects of turf construction, as well as natural/synthetic field maintenance. After leaving Motz I found myself back in the Southeast working for Precision Turf LLC with whom I am still currently employed. I currently oversee our maintenance division in metro Atlanta maintaining over 70 acres of 419 bermudagrass fields (overseeded with perennial ryegrass) with six other employees and a summer intern. My crew and I also get the pleasure of installing and maintaining temporary soccer fields all over the country, which comes with a whole new set of challenges. These temporary surfaces are installed for international competition and friendly soccer matches all over the country.

Full-time staff: Parker McGlone, Jared Kent, Austin Smith, and Don Farr

Original construction: May 2010

Previous Renovation: We stripped off the top 4 inches of the field to remove the 3-inch layer organic buildup from the previous 7 years. We then added 4 inches of fresh USGA sand at a grade of 1/4 percent. New irrigation heads were installed and leveled to grade. The field was then sodded with 3/4" Tifway 419 bermudagrass 16 days before the first event. We also added Acco drain around the entire perimeter of the field to catch all of the runoff from the stands.

With the use and abuse this field gets we have to be on a very, heavy quick release nitrogen program to be able to recover before each event. With that said we had built up a 3-inch organic layer since the field was built 7 years prior. We had a couple of instances with monsoon rains that we had some major drainage issues. With the field being so heavily used for major events the stadium and Precision Turf came to a decision that we had to pull the trigger

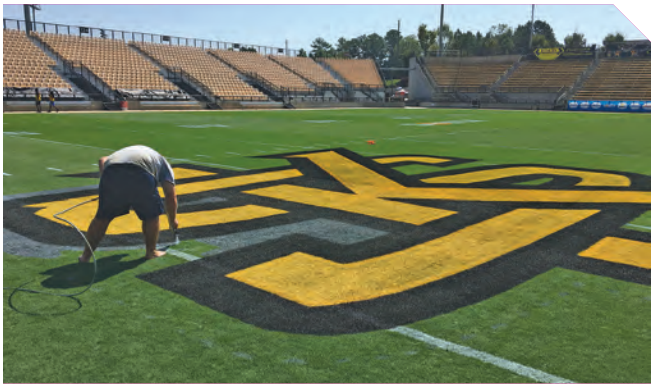
The Field of the Year Awards program is made possible by the support of sponsors Carolina Green Corp., Hunter Industries, Precision Laboratories, and World Class Athletic Services.

before it was too late. We couldn't afford to have the field flood again for a nationally televised event.

- **Turfgrass variety:** HGT Kentucky bluegrass
- **Overseed:** With the heavy event load at KSU's 5/3 Bank Stadium we are continually seed banking the Kentucky bluegrass to allow for us to recover in between events. We try to concentrate on the heavy wear areas, but occasionally we will overseed the entire surface. We try to time it right before the event, so that the athletes or user group can "cleat" it into the soil.
- **Rootzone:** 100% sand
- **Drainage:** USGA profile

Previous winner

Following the GHSA lacrosse championships on May 19 we replaced the existing bermudagrass surface with Tarkett's Playmaster hybrid system seeded with HGT Kentucky bluegrass. We faced



several challenges along the way. The first being how to harvest and install this new hybrid system. 5/3 Bank Stadium was the first Playmaster hybrid surface in the Western Hemisphere installed. During the harvesting process we used a walk behind concrete saw to slice through the backing of the synthetic turf to get our 42-inch rolls. We also used a hand held concrete saw to cut in seams during the installation process, as well as using a hole saw to cut out the irrigation heads. Our next challenge was the short time frame we had to strip the old turf, grade and install the new surface. We were finishing up installation the morning of June 2 just hours before the Atlanta Blaze lacrosse match that evening. The final and biggest challenge we faced was installing a 100% HGT Kentucky bluegrass field this far south. This was a huge risk, but with all of the research, new varieties, and trails in past years we thought we could pull it off. The thought process with us going to Kentucky bluegrass was to eliminate the transition periods between bermudagrass and perennial ryegrass in a venue with little to no downtime. We are roughly 4 1/2 months post sodding, and the field has done great thus far.

Why should STMA consider your field a winner?

STMA should consider 5/3 Bank Stadium as a field winner for the onslaught of activity the field continues to see day after day, year after year. While continuing to host all Kennesaw State University sporting events, Atlanta United, Atlanta Blaze and now the Atlanta Phoenix of the Women's Football Alliance, we play host to a few new events that make a very trying situation, even more unfriendly.

After a field renovation last summer that never had an optimal grow-in. With a very limited time frame, and less than ideal bermudagrass growing conditions, we were forced to resod our venues biggest asset once again. Collectively, we decided to try something that no one else usually does in the south. Kentucky bluegrass! We decided on Tarkett's Playmaster, which is a synthetic backing with grass fibers vertical through the rootzone. Overseeded with HGT Kentucky Bluegrass grown by Precision Farms LLC in Braselton GA. Ironically not only were we trying something different, we ended up being the first facility in the western hemisphere to use this hybrid system! Our thinking was trying to get away from the transitioning process from bermudagrass to ryegrass, back to bermudagrass every year. We wanted to put down one specific variety of grass and continue to overseed with that same variety year round. Again this year, with a very small window for installation we were forced to put down HGT Kentucky Bluegrass sod on May 30th and hosted the Atlanta Blaze June 2, and Atlanta United vs. the Charleston Battery on June 6. We are deep into Kennesaw State's football and soccer season and are just now seeing temperatures that are conducive to getting roots to penetrate the synthetic backing and anchoring into our sand profile. We've had a difficult time managing rootless bluegrass through the summer in the Atlanta area, but are confident once we get a good root system growing, it will be much easier to manage. This is why Kennesaw State University's 5/3 Bank Stadium deserves to win STMA's Sporting Grounds Field of the Year. **/ST/**

STMA Affiliated Chapters Contact Information

Sports Turf Managers Association of Arizona: www.azstma.org

Colorado Sports Turf Managers Association: www.cstma.org

Florida #1 Chapter (South): 305-235-5101 (Bruce Bates) or Tom Curran CTomSell@aol.com

Florida #2 Chapter (North): 850-580-4026, John Mascaro, john@turf-tec.com

Florida #3 Chapter (Central): 407-518-2347, Dale Croft, dale.croft@ocps.net

Gateway Chapter Sports Turf Managers Association: www.gatewaystma.org

Georgia Sports Turf Managers Association: www.gstma.org

Greater L.A. Basin Chapter of the Sports Turf Managers Association: www.stmalabasin.com

Illinois Chapter STMA: www.ILSTMA.org

Intermountain Chapter of the Sports Turf Managers Association: http://imstma.blogspot.com

Indiana: Contact Clayton Dame, Claytondame@hotmail.com or Brian Bornino, bornino@purdue.edu or Contact Joey Stevenson, jstevenson@indyindians.com

Iowa Sports Turf Managers Association: www.iowaturfgrass.org

Kentucky Sports Turf Managers Association: www.kystma.org

Keystone Athletic Field Managers Org. (KAFMO/STMA): www.kafmo.org

Mid-Atlantic STMA: www.mastma.org

Michigan Sports Turf Managers Association (MiSTMA): www.mistma.org

Minnesota Park and Sports Turf Managers Association: www.mpstma.org

MO-KAN Sports Turf Managers Association: www.mokanstma.com

New England STMA (NESTMA): www.nestma.org

Sports Field Managers Associationof New Jersey: www.sfmanj.org

Sports Turf Managers of New York: www.stmony.org

North Carolina Chapter of STMA: www.ncsportsturf.org

Northern California STMA: www.norcalstma.org

Ohio Sports Turf Managers Association (OSTMA): www.ostma.org

Oklahoma Chapter STMA: 405-744-5729; Contact: Dr. Justin Moss okstma@gmail.com

Oregon STMA Chapter: www.oregonsportsturfmanagers.org oregonstma@gmail.com

Ozarks STMA: www.ozarksstma.org

Pacific Northwest Sports Turf Managers Association: www.pnwstma.org

Southern California Chapter: www.socalstma.com

South Carolina Chapter of STMA: www.scstma.org.

Tennessee Valley Sports Turf Managers Association (TVSTMA): www.tvstma.com

Texas Sports Turf Managers Association: www.txstma.org

Virginia Sports Turf Managers Association: www.vstma.org

Wisconsin Sports Turf Managers Association: www.wstma.org

Chapter Sponsors

Continued from page 51

STMA: *Who should be using the mower?*

ER: Our target is sports fields. Our robots provide a consistent height of cut at all times while reducing watering, fertilizing and labor requirements.

STMA: *How is this an "innovation"? What makes it different?*

ER: While this is not the first product of its kind to mow areas autonomously, it is the first available to handle larger areas. The TM-2000 mower can handle up to 5 acres of turf emissions free with substantially lower energy costs when compared to traditional fuel powered mowers.

STMA: *Is there anything else readers should know about the Autonomous Mower TM-2000?*

ER: Once a TM-2000 mower is set up it constantly mows the designated area. This means that the area(s) will stay at a consistent height all the time. Since the area is constantly being cut there is no need for grass clipping management theoretically reducing fertilization and water requirements. Basic commands and performance monitoring can be handled remotely utilizing our web portal or smartphone application.

STMA: *Tell me a little bit more about your involvement with STMA. Why are you members? Why do you exhibit at the STMA Annual Conference & Exhibition?*

ER: First and foremost, we support the STMA because it is a critical component of the green industry. It supports its members with information and support that keeps them abreast with best practices. As such, we feel that the STMA show is the very best opportunity to introduce our robotics mowers. The category itself is new and the members need to understand the benefits of robotic mowing in order to make informed decisions about what is best for them.

STMA: *Why do you think innovation is important in the industry?*

ER: Innovation is critical to advance any industry. Through constant innovation, new techniques and methods can be developed to ensure sustainable, superior turf maintenance at an affordable cost.

Part of ECHO Incorporated and founded in 1972, ECHO has specialized in superior green space management products for the outdoor power equipment industry. To find out more about the TM-2000 and other ECHO products please visit echorobotics.com. ***/ST/***

Q&A *with*
DR. GRADY MILLER

Professor, North Carolina State University

Questions?
Send them to Grady Miller at North Carolina State University, Box 7620, Raleigh, NC 27695-7620, or email grady_miller@ncsu.edu

Or, send your question to Pamela Sherratt at 202 Kottman Hall, 2001 Coffey Road, Columbus, OH 43210 or sherratt.1@osu.edu

The basis of a decision

Q: "Dr. Miller, tell me if we should core aerify this ballfield (pointing at a picture on his phone) this winter? I know it is not the ideal time to aerify but it is rock hard. We could wait until the spring." A few minutes later Dr. Mike Goatley from Virginia Tech joined the conversation and got the same question, "Should I core aerify this ballfield this winter?"

A: This question was being asked by one of North Carolina's many talented sports field managers. We had just finished a great breakfast and were getting ready to listen to the morning program at the Southeast Regional Sports Turf Conference in Myrtle Beach, SC. It was November 14 and the buzz around the conference that morning was the ice and snow that was about to move through the western part of NC and Virginia beginning that afternoon.

The person asking the question knew that aerification in the winter months is generally not recommended before he even asked me. He was just looking for another opinion before making the decision. I could tell from the way he was asking the question that he wanted confirmation that it would be ok to go ahead and aerify. I should add that this person is a "semi-retired" sports turf manager. Even though he is retired, I know that he still takes a lot of pride in helping other field managers with their fields. He is frequently sought for his advice as he always produced great field surfaces. In this instance he did not want to give bad advice. So he was using the opportunity this meeting provided to get more information on the dilemma to aerify in winter or to delay until spring.

Whether it is giving advice or making decisions, we often do so based on our own experiences. Several years ago (May 2015), I wrote a *SportsTurf* "Q&A" on aerification and I suggested that field managers should aerify as often as they can, whenever they can. In that article I mentioned that having open aerification holes when there are freezing temperatures can increase the risk of winter damage, but that the risk is worth it in most situations.

A few years ago a mistake was made at our research facility and one of my bermudagrass greens was aerified in the late fall. That is a common aerification time for bentgrass greens and our field manager at the time did not think it would cause problems with the bermudagrass. We ended up having our worst winterkill ever on that bermudagrass green, partially at least because of that aerification. While a green is much more sensitive to management missteps than athletic fields, that experience was in the back of my mind when I answered that I would not aerify a ballfield this late in the year.

In my mind, his comment about waiting until spring sounded like a better option. He indicated the field was not going to be used much in the next few months, so my suggestion was to wait a few months and then aerify aggressively in the spring and summer. Although I am a big fan of being aggressive with aerification, I tempered my response due to that one negative experience with a green.

Dr. Goatley's response to the same question was much different than mine. His recommendation was to crank up that aerifier and get to it. His opinion was to get some fracturing now before winter set in and then the freeze-thaw cycles can then further loosen the soil. Dr. Goatley had heard of turfgrass problems after winter aerification, but he indicated that in Blacksburg he has not seen enhanced winterkill on a ball field due to aerification (alone). His response was influenced by his experiences.

Who had the correct response? Well, I believe we both did. Each of us brought out a bit of uncertainty, but we provided our justifications for why we made the recommendations we made. My experiences with a green may never play out on an athletic field. Dr. Goatley's experiences in an even colder climate may be different in the future, but to date his experiences suggested the potential gain far outweighed the risk. In this instance, Dr. Goatley's experiences were probably more applicable to the situation.

In the end, neither Dr. Goatley nor myself will be the person operating that aerifier winter or spring. So, what we would do is not as important as what the field manager does. I believe talking through the situation with other people was a great beginning of a good decision. I am not sure of the final decision, but my guess is the field was aerated. And while winter aerification was not my suggestion, I think that how the person came to that conclusion was probably the best decision he could have made. **/ST/**

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