rolling the large rolls of turf into place across the base structure. In less than 3 hours the team had the turf positioned, trimmed and ready for seam glue. Our molded (patent pending) turf barb system reduces any unwanted turf movement during installation and play. These tiny barbs stop filled or non-filled turf during play but allow for natural expansion and contraction of the turf and panels. The turf was carefully seamed, rolled and allowed to dry.

After drying overnight, the next step was to secure the turf to the top edge of the panel system between first and second base. The turf grain was running in this direction so this was the starting point. Stainless steel staples shot directly into the panels secure the turf without the need for a nailer board installation. The panels act as a nailer board, base structure, drainage system and shock pad all in one.

The process of filling the turf was accomplished by moving across the field from first and second to the third base line with a SandMatic machine; a total of 6 pounds of rubber and sand per square foot was deposited. The final step was to staple the entire perimeter of the turf into the panel’s top surface and edge. The turf is only secured around the perimeter of the panel mass and around the pitching mound; the weight of the infill and the molded turf barbs keep the turf in place. Lastly, the base paths were groomed, backfilling the small gap in which the turf was tucked, in essence burying the rolled turf edge and creating a finished look.

A true testimonial to the system is that immediately after a 2-inch rain fall, the field was completely drained and the only area at the facility that was playable. Rick Nafe, vice president of operations for Tropicana Field, said, “The field installation was completed extremely fast with no mess to our facility. This field feels great underfoot, and the ball bounces and rolls just like real grass, what more could you want from a synthetic turf field. We love it!”

Update on irrigating synthetic turf

Editor’s note: We asked several NFL and Football Bowl Subdivision program turf managers about their maintenance routines with regard to irrigation on synthetic turf fields; specifically, Do you irrigate your synthetic infilled field(s)? Why or why not? And, if you do, what’s your normal routine for irrigating on days when there is activity on the field? Here are their responses:

DARIAN DAILY, Head Groundskeeper, Paul Brown Stadium, Cincinnati
We have tried watering our fields in the past to lower the heat, but have not found the proper method to keep it cool.

We do water our field early in the football season. Our goal is to get water down in the rubber/sand to allow the rootzone to “not grab” as much. Our players often comment that after playing in a dome, the indoor field has “too much grab” and they felt sorier than after a game on an outdoor synthetic field.

The comments I hear from our players are the wet/damp synthetic fields seem to allow for their shoes to get good traction, but will allow the cleat to release when a great force is applied, thus dissipating a lot of energy and allowing less force into their joints. I have not seen any research to this effect, but if our players say they like a wet field, I try to give them a wet field.

Our normal watering schedule for August through October is to irrigate the field Wednesday, Thursday, and Friday before a game. We apply about 1 inch of water over those 3 days. We do not water on Saturday or Sunday because the TV people are setting up and I don’t want to hurt or destroy cameras. Once November arrives, we usually get enough rain to keep the field “wet” and typically don’t have to irrigate the field.

SEAN KAUFFMAN, Field and Grounds Supervisor, Baltimore Ravens
We do irrigate our Sportexe surface; we use the Nelson SR Big Guns. Since the majority of our events take place in the spring and fall, we don’t typically irrigate to cool the surface, but more so to knock the crumb rubber down and give the field a “clean” look as well as to wash off the surface. And then, as a rule of thumb, we spray the synthetic with a microbial disinfectant mixed with fabric softener, which also aids in cleaning the surface as well as keeping the crumb rubber from pulling back up to the surface.

ABBY MCNEAL, CSFM, Director of Turf Management, Wake Forest University Athletics
We irrigate our football stadium field to assist with knocking the rubber particles that are on the surface to be dragged back into the field surface as well as to assist with cooling the surface temperature on warm game days.

On a game day after the marching band has practiced for 2 1/2 hours we will perform a quick drag to “stripe” the field surface, smoothing out the displaced rubber from the band feet and then follow with about 5-10 minutes of water to further “knock in” the rubber particles and give a clean appearance before the teams take the field to warm up. The watering to “cool” the surface is done only as needed and based on current environmental/weather conditions at the time. Both of these practices are assessed and preformed

IN FEBRUARY Dr. Andy McNitt of Penn State spoke at the Keystone Athletic Field Managers Organization’s annual conference. During his presentation, McNitt, director of the Center for Sports Surface Research at PSU, touched on the issue of heat and synthetic turf fields. Saying that blacktop is cooler than crumb rubber infilled surfaces, McNitt said it was the fibers of the fields, not the crumb rubber that creates the heat. McNitt said irrigating the surface does cool down fields for about 40 minutes, and then only by about 10 degrees. He noted that that different colored crumb rubber doesn’t make a difference in field temperatures.


**John Mascaro’s Photo Quiz**

**Answers from page 17**

THE REASON WHY THIS TURF IS BROWN in a rectangular area can be traced back to a rule in turf that says “Turf never dies in a straight line.” Therefore this dead turf must be caused by people. This school’s multipurpose field is used for lacrosse, practice football, science classes’ outdoor experiments, day camp, and even as a special event/winter parking lot that gets snow plowed and salted!

Before this photo was taken, the Nobles School Day Camp decided to set up a children’s “slip n’ slide” on one of the hottest days of the year for the kids to keep cool. Unfortunately the plastic slide scorched the turf beneath it leaving this interesting pattern of fried turf on the practice field that was just recovering from wear from the spring sports season and also the car parking from the previous winter.

Photo submitted by Ryan McGillivray, a student in Turfgrass Management at UMass Amherst. Peter Thibeault CSFM is Sports Turf Manager at Noble and Greenough School in Dedham, MA where this photo was taken.

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.
as the conditions of the each event occur; in other words we don’t always water the field before a game.

We can apply water to our new synthetic baseball surface, and I tend to think of it as a tool to assist in achieving a clean field surface from the players that spit (whatever they have in their mouth at the time) like most baseball players do. I have a philosophy that you will rarely find a baseball player that doesn’t spit something. This is just one tool that we use to help keep the surface clean from that biohazard.

I am certain that there will be requests to use the system to help in “cooling” the field surface temperature during camp sessions this summer. I am anticipating some education on how we can achieve a lower surface temperature with the use of our irrigation system knowing that it has its limits to accomplish the cooling effect.

Irrigating synthetic fields is a learning curve to all; to the coaching staff and users along with the turf manager it’s a tool that some have and then it’s up the turf manager to assess the situation and determine the best use (or not use) of the system. Just like with most tools, all have their time to be useful in certain situations.

________________________________________

BRIAN GIMBEL, 
Athletic Grounds Supervisor, 
The Ohio State University

We do not water our synthetic fields to reduce heat. We have tried it and it does work for a little while, but not long enough to be useful. There is no in-ground irrigation system, so we use a Kifco water reel to irrigate the fields. These units do a great job of covering the area, but it takes a long time to accomplish it. By the time the irrigation has been completed, the temperatures where we started are typically rising again. At this point all we have done is add moisture to the air, which increases the relative humidity.

We do irrigate the field as part of our maintenance program, however. The mono-filament systems are especially prone to displacement of the infill. This decreases over time, but when they are new, this is a big concern. To ensure our athletes are competing on a smooth surface, we will groom these fields regularly to redistribute the rubber and sand evenly. This leaves the field a little fluffy afterwards so we will irrigate it once or twice to help settle the infill down. This helps us to provide the team with a consistent playing surface that feels the same every time they are out on it. The irrigation also removes some of the static electric charge that is generated during the grooming process and also helps keep the field clean. This process has worked very well for us and has generated good feedback from the team.

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KYLE CALHOON, 
Groundskeeper, New Meadowlands Stadium Company

I do not irrigate our Field Turf for a couple of reasons. The majority of our big ticket events played directly on the FieldTurf are played later in the year when temperatures are mild. I understand people like to irrigate to lower temperatures in the heat of summer with temperatures rising above 160 degrees F; but for the most part we have been lucky come September when international soccer and concerts make up the majority of our events; soccer is played on natural grass while concerts are on top of protective flooring.

We do not have a quick method to get the coverage and amount of water we need. There are two 2-inch hose lines at field level. From those lines it would require hundreds of feet hose to reach two water cannons placed on the field. These water cannons can only cover 1/8 of the field. With the water coming out and the amount of moves we would need to make to get proper coverage, it would be an effort in futility.

The only time I irrigate the field is after international soccer events when we put place natural grass on top of the FieldTurf. The FieldTurf sits on top of geo-textile filter fabric, but does not catch everything. We end up with a lot of dust that needs to be washed away.

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The Toro Reelmaster 5210 features Dual Precision Adjustment cutting units to deliver an exceptional quality of cut and aftercut appearance. Powered by a 28-hp, 3-cylinder Kubota diesel engine, this unit offers a nimble and maneuverable design for mowing in a wide range of conditions. The Reelmaster 5210 is lightweight and productive with a 100-inch width of cut. It is available in standard 2 wheel drive or add on the CrossTrax® all-wheel drive system.

The Toro Company

Versatile Turf Tidy from Redexim

The Turf Tidy from Redexim North America is one of the most versatile machines built today. It incorporates verti-cutting, flail mowing, core collection and debris clean up applications into one machine. The Turf Tidy’s fully floating cutting head follows the ground’s contours ensuring accurate cutting and pick-up. The unique turbo fan makes a clean sweep of leaves, pine needles, paper, aeration cores and grass clippings. The large hopper means less time emptying and its high lift allows greater clearance when tipping; it will easily dump into a utility vehicle or dumpster. The large turf tires mean less ground pressure even with a full hopper.

Redexim North America

Terra Clean by Wiedenmann

The Terra Clean M by Wiedenmann is a self-contained artificial turf sweeper that efficiently collects debris on the surface and can also be adjusted to reach the top layer of infill. The infill is then separated from the debris with a vibrating sifter and is redistributed back onto the field. The debris is collected in an easily removable hopper. The Terra Clean M is powered by a Honda GX 240 gasoline engine and can be pulled by most vehicles.

Wiedenmann North America
Multi Groomer from Heying Company

The MG72 Multi Groomer sweeps and grooms natural and artificial turf, among many other functions, such as pulverizing aeration cores, de-thatching, aerating, leveling top dressings, and more. At 6 ft. wide it grooms and sweeps efficiently. Heavy duty steel construction. Built-in electric lift system with wireless remote control saves down time and labor. No tools needed to adjust.

Heying Company

New Toro synthetic turf groomer for Sand Pro 3040/5040

Toro is introducing the Synthetic Turf Groomer for use on the Toro® Sand Pro® 3040/5040. This attachment grooms and redistributes infill material on synthetic fields and is designed to provide adjustable down pressure from the onboard hydraulics to help evenly distribute infill from high spots to low spots. Additional features include quick-adjust pitch, which allows operators to change the grooming aggressiveness, and a unique brush design for increased distribution of material. An optional spring tines kit attaches in front of the brushes to loosen synthetic turf before grooming. In addition, an optional magnet behind the groomer is available to pick up unwanted ferrous debris on the playing surface such as pins, nails and clips.

The Toro Company

Gravely ProVac 1060

Gravely offers the ProVac 1060 featuring a large 3.5 cubic yard hopper capacity for large leaf collection jobs. In addition, the 60-inch adjustable intake scoop allows the operator to pick up pine cones, trash, leaves and more. Debris can be removed from turf or cement. An optional hand vac unit provides an extra 10 feet of reach to vacuum leaves from under shrubs, along a fence line or between stadium bleachers. The unit features an 18 HP Kohler® Command Pro Engine and a 6-gallon fuel tank for less refueling stops. The self-contained ProVac can be pulled with a utility vehicle or anything with a pintype tow bar since no PTO is needed to drive the unit.

Gravely Turf Products

Harper self-propelled sweeper/vacuum

Equipped with a 44-hp Kubota turbo charged diesel engine and a 3.25 cubic yard hopper, the new TV30 offers maneuverability that cannot be matched by any tow-vehicle or pull type unit. The TV30 provides the same patented Recirculating Air System performance as our towed models. This unit also offers a new level of adaptability due to a line of attachments for raking tall grass as well as a verti-cut rotor that performs two jobs in one pass. The hopper lifts to a height of six feet three inches to dump directly into a cart or waste dumpster, eliminating the need to handle the material twice.

Harper Industries

Parker Vac-35 litter vacuum

Parker offers the Vac-35® Litter Vacuum, an all purpose litter vacuum designed to pick up plastic and glass bottles, debris and cans on either hard or turf surfaces. An aerodynamic deflector design controls airflow directing debris downward for greater degree of fill and operator protection. Fully pneumatic rear tires are deeply cleated and mounted on heavy duty steel wheels for better traction. A lightweight, high impact molded polyethylene housing contains a foam-backed settle liner in critical wear areas which reduces noise and vibration. Vac-35 accessories include: 24-, 30- or 36-inch intake housing, industrial floor wheel kit, pneumatic turf wheel kit, hose kits, bag platform, various bags, dust bag cover and a disposable bag liner. The Parker Vac-35 has a one-year parts and labor warranty.

Parker Company, Inc.

RedMax backpack blower

This backpack blower and features the Strato-Charged 2-stroke engine with ultra-low emissions and high power. The Max Cooled back pad uses air from the fan housing to cool operators and keep them comfortable during hot days. Super wide straps and contoured back pad are oversized for greater comfort. The EBZ8050 is also equipped with wide-sweep elbow rotation for full operator mobility and maneuverability, even in cold weather and RedMax’s Free Flow Air Net, a two-way air cleaner system that reduces air intake blockage providing maximum blowing performance.

RedMax

Husqvarna sweeper, blower

Husqvarna’s sweeper features notched height adjustment changeable from tractor seat. Di-chromate hardware resists rust. 14-gauge welded housing, 17 cu. ft. hopper capacity; (6) 12” diameter brushes. Large aluminum wheels with bar type tread. Hitch pin included.

The Husqvarna 380BTS is a powerful commercial back pack blower with tube-mounted throttle control. Large air flow and high air speed are provided by an efficient fan design together with the powerful X-Torq® engine. Commercial grade air filter gives long operating time and trouble-free use. The harness has wide shoulder straps and hip belt for best ergonomics.

Husqvarna

For more information on any of these products, please visit www.greenmediaonline.com/productportal
ARC MORAN, THE HORTICULTURE/TURFGRASS INSTRUCTOR for Atlee High School in Mechanicsville, VA led his student staff to an STMA Field of the Year Award for the second consecutive year, this time for Schools/Parks Soccer Field of the Year. His student crew also was honored with the 2009 Softball award for Schools/Parks.

Moran began working on the school’s practice field in 2000 as part of a landscape class project, which led to the athletic administration and booster club asking him to take over managing

Atlee High School became the first in the state to teach Turf Science as a recognized course. Given the available access to the school’s sports fields, Moran adopted them as his “land laboratory.”

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all the sports fields the following year. In 2002 Moran worked with other hort instructors in Hanover County to develop a county-based turf science curriculum, which was adopted by the Virginia Department of Education as a state-based curriculum.

Later that year Atlee High School became the first in the state to teach Turf Science as a recognized course. Given the available access to the school’s sports fields, Moran adopted them as his “land laboratory.”

**SPORTSTURF:** Has anything changed for your program in light of your winning a Field of the Year Award last year?

**MORAN:** As a program we have always prided ourselves on trying to maintain expectations that far exceed that of administration, coaches, and athletes. I think the degree of credibility the students and the program have gained has been most noticeable. My students often are the ones who answer the questions that we get from members of the community, coaches, and student body. Most of the students in the program have a strong understanding of the little details that have allowed our fields to perform at a Field of the Year level.

When you hear them answer questions from an administrator, instruct a coach on proper traffic rotation, or pick up a bit of trash that the typical adult would pass by, you get a real sense that you have done things the right way. Many positive e-mails and phone calls from coaches, parents, and even athletic directors from other schools confirm that. Our Superintendent, School Board, Principal, and Athletic Director have all expressed their appreciation to the students and they respect the work that they do and encourage them to keep building from each success.

Our goal is to communicate that the business of Sports Turf Management is a very complex and complicated industry that requires untold hours to get the job done properly. My students are quick to point out to those who think it is as easy as jumping on a mower and cutting grass that it is so much more than that. I have even heard a young man tell another student “If your dad thinks it is that easy, tell him to come by class tomorrow and push the paint machine and paint a straight line.” His dad has never shown up.

**ST:** Have any of your former students gone into turf management careers (yet)?

**MORAN:** I have had the good fortune to work with an incredible group of young men and women since we started our program in 2001. Since then I have had several students who have worked or studied in the turf and landscape industry. I currently have four graduates pursuing either a 2 or 4-year degree in the turf/landscape industry. I have a graduate who is now a college baseball coach and early in his collegiate coaching career he was tasked with managing the baseball complex as well as other sports turf areas on his campus. He told me that each day he had to call on things he did in high school and that those things he learned allowed him to be successful even though it was not part of his overall career goal.
F.O.Y. | Atlee High School

That lesson would apply to just about any career they may choose to explore in their future. I also hope they gain an appreciation and understanding of what it takes to manage safe and playable athletic fields.

**ST:** What’s your most valued piece of equipment and why?

**MORAN:** I would have to say that we have three pieces of equipment that would qualify as our most valued piece of equipment.

**Digital camera.** It allows us to keep a visual record of our challenges and successes. It typically stays in the utility vehicle so we can take pictures of the fields and their conditions. Every field we manage provides us with teachable moments, and the camera is a great tool for recording those moments and discussing them in class.

When we have success, the camera allows us to share that success with coaches, administrators, and members of the community.

**Airless line painter.** In 2003 we purchased an airless paint machine based on suggestions from STMA members who work in the NFL and NCAA. Their testimonials as to the quality of the results were exactly what we discovered after purchasing the machine. We were able to nearly eliminate our dependence on aerosol cans for marking practice fields and other areas. We also were able to reduce our paint budget significantly because the new machine allowed us to cover twice the distance with a bucket of paint compared to the machine we were previously using. The machine allows us to spray using two hand guns, and that has allowed us to expand our ability to spray graphics and logos on our field. Our previous system was severely limited and the airless sprayer provided us the opportunity to do things that most high schools in our area cannot.

**Tractors with front end loaders.** We are fortunate to have two tractors equipped with front end loaders. We use those machines to tow equipment, spread seed and fertilizer, mow, aerate and many other tasks. The tractors alone are incredibly useful, but once we purchased loaders for each of the machines our tractors allowed us to carry out tasks that were nearly impossible before. Moving material, loading topdressing, rough grading, and other tasks are made possible.

**ST:** Are you yet involved in “sustainable” management practices? If so, what are you doing?

**MORAN:** Over the past several years we have explored more and more ways that we can reduce the amount of fertilizers we apply. Through more thorough soil testing, we have been able to reduce the amount phosphorus we have needed to apply. We have...
begun a more intensive approach to liming to help our soils better manage nutrients, thus making them more available to the plant. The practices have allowed us to streamline the amount of phosphates we apply.

We are seeing a bigger bang for our buck when it comes to the overall plant response since our soils have been improved. Being in the Chesapeake Bay watershed, there is a larger focus on municipalities to reduce their potential runoff and leaching that could impact the Bay. We have tried to be proactive by not exceeding the state environmental guidelines for nitrogen applications and on some fields operating well below the suggested limits. By working to balance our soils, we have not seen a drop off in the performance of the fields. We have also tried to build in some slow release fertilizers to minimize potential leaching of nutrients.

Water conservation is another concern on the forefront, and we are planning to make irrigation upgrades in the future that will allow us to fine tune our irrigation strategy.

**ST:** How do you motivate students to work on fields for no pay?

**MORAN:** Well I must say if I could pay my students I would. They truly work hard and know how to get the job done. We have never been in a situation where the job did not get done before the end of the school day. I think the students in class have a tremendous sense of pride when it comes to producing a great product. It never fails that they run to the top of the bleachers at the end of the period to check out how the fields look.

I think a lot of students take the class because they know they get to work on the fields, but it does not truly click for them until they realize how hard the tasks truly are and then to see the end result and realize their efforts truly make an impact.

I also try to encourage those students who participate in the sports that use our fields, to take a stronger role in that fields success. They seem to pay extra attention to the little things that affect their sports.

In an effort to reward them for their work, our athletic director provides passes for each member of the class to all home games. He also provides funding so I can purchase “Field Staff” shirts each of the students.

I try to express my appreciation for their hard work regularly. They need to know that they are doing good work and that those efforts are appreciated.
STMA Exhibitors: Plan Now to Enter Your Innovation

IN 2010, STMA introduced a new awards program, the Innovative Award. Three exhibitors were presented with the inaugural 2011 award during the STMA annual conference in January in Austin.

Start thinking about what your company can enter. Although the entry form just takes minutes to fill out electronically, the judging panel seeks links to videos, photos, marketing brochures, or other promotional material to help them understand the innovation.

The purpose of the award is to recognize those exhibiting commercial companies that are introducing products, equipment or services that improve the profession—either by enhancing the effectiveness of the sports turf manager or making playing surfaces safer and more playable for athletes.

In addition to being innovative, as described above, and an exhibitor at the STMA conference, the product, service or equipment being submitted must be introduced for sale between the close of the STMA show in January of this year through the close of the 2012 show in Long Beach. The winners also must agree to display the innovation during the trade show.

When asked “What is innovative?” the Innovative Awards Task Group that developed the program came up with a list of how they would describe it. According to the Chair, Dale Getz, CSFM, CSE, “These qualities are descriptive, but the intent is to not limit an entry to just this listed.”

- Are creative
- Are cutting edge
- Have never been seen
- Make the task easier or more productive
- Improve quality
- Improve efficiency
- Protect the environment
- Save time and resources
- Are creative
- Are creative

Getz credits his task group, which includes Rene Asprion, James Graff, Chad Price, CSFM, Matt Tobin, Steve Trusty, and Vickie Wallace, with developing a program that has dual benefits. “Those companies that are presented with the Innovative Award receive excellent recognition and bragging rights, and STMA also benefits by being the award presenter and by being the venue where the innovation was introduced.”

Mt. San Antonio College reinvesting Student Challenge winnings

A VICTORY couldn’t have come at a better time for the turf program at Mt. San Antonio College, Walnut, CA. At the start of the spring 2011 semester the team broke ground for their new Agriculture Science building, just months after the team of Wade Andereck, Patrick Escalera, Chaz Perea and Tom Skelton, led by professor Brian Scott, won top honors in STMA’s Student Challenge’s Two-Year competition.

In previous years the school has used Student Challenge prize money to acquire a dethatcher, an aerator, and a triplex mower for student to gain hands on experience. This year the Mt SAC Turf Team will come full circle and use the winning funds to populate new plots with turf and other playing surfaces. The majority of the plots will consist of several turf varieties including hybrid bermuda, paspalum, fescue, and fescue and ryegrass blends. In these plots students will have the opportunity to test and study variables with a new fertilizer injector, soil blend bases, irrigation methods, and cultural practices.

The turf students also will be installing plots consisting of an infield playing surface, a mound, and warning track material. Here students will have the opportunity to study and practice the techniques involved in managing the soil profile, compaction issues, and moisture relationships on real playing surfaces. Finally, the tamp, rake, drag mat, and hose will take their rightful place as an integral component of the SportsTurf program.

On behalf of all the Turf and Horticulture students at Mt SAC, we would like to express our gratitude to the STMA for allowing us to compete in the Student Challenge and making us feel like part of the team. - Chaz Perea