

staff that needs to help get it right.”

He has put together a team of professionals who help him out in challenging situations.

“I have developed a network of people and relationships who can come help me out. How good is the groundskeeper if his mower breaks down? I have known the guys I deal with for years, and they are dedicated to finding solutions for me. That’s especially important when you have a new field.”

TURF TEAMWORK

The turf at BBVA Compass Stadium is not yet a year old, so Griffin is always alert to new or developing problems. “Keeping bermudagrass healthy and green is a challenge. I focus on the strength of the rhizomes and root system to make sure it stays healthy.”

So far the shadows and sunlight are a daily challenge but one that the turf is meeting. “The benefit of bermudagrass is its strength,” says Griffin. “But it’s not always beautiful. How it performs is something we watch closely as well as how it looks, too.”

To help find the right type of treatments to keep his turf vibrant and healthy, Griffin part-

ners with turf seed and chemical supplier WinField. Together they diagnose any turf problems quickly and remedy the situation before the turf is affected. Griffin has worked with WinField at all of his former venues.

John Cabori, with WinField, is also watching this new turf closely. “While we have seed available, this project involved washed sod and the new TifGrand seed. This system was chosen by the Houston Dynamo because of typical stadium issues such as shade, and TifGrand has some strong advantages in these settings. As with any new variety, I have to be ready for any challenges that might pop up.”

To help ensure the field remains a bright shade of green, the kind soccer players and fans prefer, Griffin uses Mikropak, a crystalline micronutrient that is applied every 2 to 4 weeks to maintain color and vibrancy. Each application creates a wave of green on the field and enhances the beautiful but strong field that Griffin wants and needs for his players.

Cabori adds, “We simply prepared ourselves for the unknown since it was such a new variety. We all learn something in these cases that ends up helping others who decide to use it down the line.”

“For instance, others will be watching and learning from Rodney since he is using a relatively new product, TifGrand,” says Cabori.

“While proven methods were used, some new methods may be needed to maintain the high quality and that’s where Winfield comes into the picture. Rodney is like an experienced NASCAR driver, and I am like his crew chief. He communicates to me what he needs and I work to make sure he gets the best setup for the event.”

So far, the turf and the teamwork are paying off.

“Any good groundskeeper knows his own field,” Griffin says. “I see every square inch of the field and know that any big problem starts out with a small one, so I have a team who can come in and help me approach the small problems too.” The field is performing well, in his estimation. And so is his team.

“A lot can be learned from Rodney and his approach,” Cabori says. “Keep it simple is Rodney’s number one rule. Second is, understand it is a team effort. Rodney surrounds himself with people he can trust.”

For this first year field, turf and teamwork are the big payoff. ■



Cool and Clean Synthetic Turf

With The World's Most Powerful Perimeter Sprinklers

Underhill's built-to-last metal Mirage Series sprinklers "cannon out" to 174 ft, the longest throw of any sports head. Robust construction outlasts the life of turf change-outs. Installed in top universities and Olympic stadiums worldwide.

Underhill®
Products that work...smart.™
1.866.863.3744 • www.underhill.us



Hit 'em year round.

Indoor. Outdoor. Tensioned. Free-standing. Batting Cages.

Beacon's **TUFFframe** & **Phantom** batting cage systems are not only tough, but quick & easy to setup and adjust. Quite simply, these batting cage systems have no equal.

Use your smart phone to scan this code to see the **5-minute setup** in real time!

BEACON BUILT
MADE IN THE USA

BEACON ATHLETICS

800-747-5985 BeaconAthletics.com

FOR FACILITIES . FIELD MAINTENANCE . GAME-PRACTICE EQUIPMENT



PRINCETON FIELD HOCKEY TURF *GOES HIGH TECH*

This article was supplied by Creative Services, Encinitas, CA.

» THE PRINCETON TIGERS women's field hockey team plays a fast and furious game on the new AstroTurf 12 JG surface at the campus's recently renovated Bedford Field.

PRINCETON UNIVERSITY has fielded a championship women's field hockey team for more than three decades and this season has been a banner year for the Tigers. For the first time in

program history, the women's field hockey team won the NCAA Division I National Championship Title in November in a 3-2 victory over #1-ranked University of North Carolina. The Tar Heels had been six-time national champs.

Under coach Kristen Holmes-Winn, the Tigers (21-1) have become known as the "team of destiny," as they also clinched their 21st Ivy League trophy in 2012 and count two Olympians and four US National Team players on the squad.



Giving the Tigers home turf advantage is a new state-of-the-art facility at Princeton's Bedford Field. The field is a model of advanced technologies—from the custom-designed synthetic turf/drainage system to an innovative irrigation control and watering program.

"In field hockey the condition of the field is critical to the playability of the game," says Princeton Associate Athletic Director for Facilities Jeffrey Graydon.

"The surface has to be wet so that the ball moves without bouncing. A faster, more consistent playing field ensures a challenging game that allows the players to compete at the highest level," he says.

BEDFORD: A TWO-PHASE PROJECT

The Bedford Field project was planned in two phases: Phase 1 included new turf, updated drainage and irrigation systems, perimeter fencing and PA. It also features a new field hockey-specific scoreboard with PCS (penalty corner

shots) called out and portable grandstands for 1,200 spectators. Phase 2 will see the construction of permanent grandstands, team rooms, event lighting, a press box, shared filming platforms, improved concessions and landscaping. After 2 years of effort, Phase 1 opened in summer 2012, ready for pre-season practice.

Before the Bedford revamp, the Tigers shared the nearby Class of '52 Field with men's and women's lacrosse teams. That field's synthetic turf had seen 9 years of relentless varsity action, yet the toughest challenge was prepping the site for field hockey.

Every day, 2 hours before practice or a game, a grounds crewman rolled out two portable water cannons, fired up the engines and saturated the field for 80 minutes, laying down nearly 12,000 gallons of water. This created a wet surface that reduced bounce, but lacked uniformity due to the inconsistencies of the water cannons and the time required to irrigate the field. Most of the water drained through to a subsurface elastic cushioning layer.

At half-time, the grounds crew went through the drill again, this time shooting water from the end zones toward the middle of the field.

"It was extremely labor-intensive, wasted a huge amount of water, and usually resulted in patchy wet and dry areas," says Graydon. "There was very little consistency."

Conferring with the coaching staff during the Bedford Field redesign, Graydon was charged with creating a best-in-the-nation fa-

Princeton University is one of the eight universities of the Ivy League, and one of the nine Colonial Colleges founded before the American Revolution.

cility that would be a model for the league and a future site for international competitions.

"Thanks to the generosity of Princeton's alumni, we were able to realize our dream of developing one of the finest field hockey facilities in the world," says the associate director.

Graydon is well-known in college athletics and has been affiliated with the university since the 1970s. He originally joined the school as a consulting entomologist, then oversaw field maintenance for nearly 10 years as assistant director for facilities and events. In 2005 he was named associate athletic director and oversees capital projects and manages the athletics facilities staff.

SYNTHETIC TURF: 18+ YEARS AT PRINCETON

Princeton installed its first synthetic field in the mid-1990s and now has six artificial turf surfaces for men's and women's lacrosse, baseball, track, football, field hockey and soccer, while also sharing the facilities with club sports, intramurals and summer camps.



TIFSPORT DELIVERS

Any sport played on natural grass is a natural for TifSport Bermudagrass, whether it's indoors on the fields like Reliant Stadium in Houston TX, or outdoors like FedEx Field in Landover MD. If you're looking for a sports turf that can handle non-stop action, a transition zone climate and heavy overseeding, TifSport's your answer. It's ideal for intramural fields, practice

fields and game-day venues, where everything has to be perfect. Coaches and players love the way it looks and plays and you and your crew will appreciate how easy it is to manage. TifSport can only be sold as certified sod or sprigs and only by licensed members of the TifSport Growers Assoc.

TIFSPORT
CERTIFIED BERMUDAGRASS
www.tifsport.com

For more information call 706 552-4525 or visit us at www.tifsport.com.



>> MIRAGE HEADS “cannon out” irrigation coverage to 174 feet. Within 12 minutes the entire field can be irrigated for cleaning, cooling and prepping for field hockey practice and games.

With nearly 13 acres of artificial turf on the campus, Graydon knows the subject. Bedford Field became his research lab for cutting-edge technologies.

“Working with the AstroTurf company’s fiber, coatings and urethane technical team, we created a system that we believe will meet the challenges set by the FIH (International Hockey Federation) to retain water while providing the most consistent surface for play,” says Graydon. AstroTurf 12 JG is engineered with a premium knitted nylon system designed to provide uniform traction and consistent footing. It enhances playability when wet and absorbs water to maintain wet conditions longer.

“Synthetic turf has changed the game of field hockey by speeding up the sport, inspiring new tactics and techniques, and rules to accommodate a faster game,” he says.

Along with the new turf, a central feature of the Bedford Field improvements is a drainage system designed to hold a consistent amount of water over a longer period while providing fast surface drainage to prevent puddles.

“Vertical drainage is a major component of any synthetic turf plan,” says Graydon.

“There is a need to balance that drainage with field hockey’s requirements to retain some water by the hydrophilic turf. A wet but not soggy surface is the key to top-level performance. In addition, we had to balance water retention and drainage with environmental concerns. Storm water management is critical to Princeton’s sustainability goals,” he says.

The university originally considered a storage tank to retain rainwater for field irrigation, but instead chose to improve the water-holding capacity of the turf, along with a fast, efficient drainage system.

AstroTurf engineers worked with Graydon to devise AstroTurf 12 JG, a system with a 3mm urethane backing created with a uniform pattern of drainage holes in the turf. This allows the field to retain the right amount of water, while still allowing it to drain quickly and efficiently during periods of heavy rainfall.

Large test plots were installed adjacent to Bedford in fall 2011 and evaluations continued through spring 2012. These tests demonstrated that the new turf and drainage systems worked efficiently and met expectations for moisture retention, planarity and resilience.

NEW TURF AND BASE SYSTEM

Clark Companies installed the new Bedford Field base system, while the under-drain layout was designed by Van Note Harvey Engineering. The base measures 210 feet x 330 feet with a clean stone subsurface retaining area that tapers to nearly 7 feet deep (most base systems are 9 to 12 inches deep). The under-drain system, along with the volume of stone, allows 100% of irrigation and rainwater collected on the field to vertically drain through the turf and elastic layer down into the stone base.

The depth of the stone base allows water to infiltrate back to earth, recharging ground water and eliminating runoff into the campus storm water system. The base is designed to retain 100% of the water from a 100-year rainstorm, exceeding Princeton's sustainability goal for storm water management.

Princeton called on Underhill International to supply the automated irrigation, which featured the company's long-throw Mirage 160 sprinklers. The Mirage heads propel water out to 174 feet at 321 GPM, prepping the entire field in minutes. The Bedford Field installation required eight long-throw Mirage heads placed on the sidelines, away from the areas of play. The 90° corner and 180° field heads run in rotation before every practice and home game, delivering uniform water distribution over the entire field surface.

"With Underhill Mirage sprinklers we use just 1,200 gallons of water to saturate the entire field, compared to 12,000 gallons with the traveling water cannons. And it just takes 12 minutes, a sixth of



>> **NEW HYDROPHILIC ASTROTURF 12 JG** features a premium knitted nylon system that provides traction and consistent footing. It enhances playability when wet and absorbs water to maintain wet conditions longer.

the time we spent with the water cannons," he said.

Even on a very hot day, when two passes of water are required for prep, the Mirage heads cover the field with less than 2,500 gallons.

Before deciding on an irrigation system, Graydon had a set of criteria. "It's critical to cool and clean a synthetic field before events for player safety, and with field hockey we also need a wet playing surface. Additionally, the sprinklers had to be powerful enough to irrigate from the sidelines for safety reasons.

FEBRUARY 4-7
Marriott at City Center • Newport News, VA

2013

Mid-Atlantic Horticulture Short Course

INVITED SPEAKERS

Diane Blazek, All-America Selections, National Gardening Bureau
Rolfe Carawan, President, Lifematters International
Linda Chalker-Scott, Horticulture, Washington State University
Bernie Erven, HR Management, Ohio State University
Billy Goodnick, ASLA, Columnist & Garden Educator
Robert "Buddy" Lee, Breeder of the Encore® Azalea
Monica Muir, QuickBooks ProAdvisor, Muir & Associates
Darrin Nordahl, ASLA, Author, *Public Produce, Making Transit Fun*
Ellen Ecker Ogden, Kitchen Garden Designer, Co-Founder, Cook's Garden
Daniel Potter, Turf and Landscape Entomologist, University of Kentucky
Bob Von Bernuth, Irrigation Association, Education Director
Maria Zampini, President, UpShoot; Dir. of Plant Dev., Agricola Mgmt Group

\$95 PER DAY • CEUs & CERTIFICATIONS
 Add Lunch & Learns or Evening Workshops to increase your CEUs!

Detailed schedule available in late fall.
(757)523-4734 | www.mahsc.org

WE MAKE THE GAMES LOOK BETTER

quality bulk paints

custom windscreens

bright aerosols

custom stencils

painting equipment

JOIN THE

WORLD CLASS TEAM

STOP BY AND VISIT US IN DAYTONA BEACH

Find it all on our website:
www.worldclasspaints.com
 1.800.748.9649

FIELD SANITATION JUST GOT A WHOLE LOT EASIER

The day has arrived when field safety can be achieved without the use of harmful chemicals and scarce water resources. Facility Managers can now address the risks of MRSA and HIV on all sports surfaces and do so in the most cost effective manner possible, as low as \$25 per application*. Designed by GreensGroomer WorldWide®, the GreenZapr® uses the power of UVC technology to destroy harmful germs inherent in sports turf surfaces.

STERILIZATION WITHOUT CHEMICALS

SAFE & EASY TO USE

PROVEN BY INDEPENDENT STUDIES

DELIVERS 99.9% KILL FACTOR

OBLITERATES THE ORGANISM'S DNA

RELIABLE ON-BOARD POWER

The high cost of current sanitation techniques makes it virtually impossible to address needs on a frequent or on-demand basis. The GreenZapr makes pre or post event sanitation possible and rapidly pays for itself by avoiding high cost, repetitive chemical treatments. Over the long haul, the fiscal argument is clear — not to mention that ultimate safety is addressed with such a simple, proven solution.



GreensGroomer®
WORLDWIDE

*The estimated \$25 application cost is calculated from the original equipment cost, based on three applications per week for the life of the bulbs.



Germicidal UVC has been used in the eradication of pathogens, viruses, mold, and fungus for over 100 years. Now adapted for mobile use, the GreenZapr uses the strength of UVC in a simple tow-behind unit. With an on-board generator with intelligent power regulator, the GreenZapr efficiently sends and controls power to the light banks. The spring tine rake module lifts material, preparing it for exposure. Total immersion in the UVC is executed with a three-pass technique that results in a 99.9% kill factor.



The spring tine rake attachment is equipped with 42 tines that comb through the turf surface, lifting fiber and infill, preparing the turf for exposure.

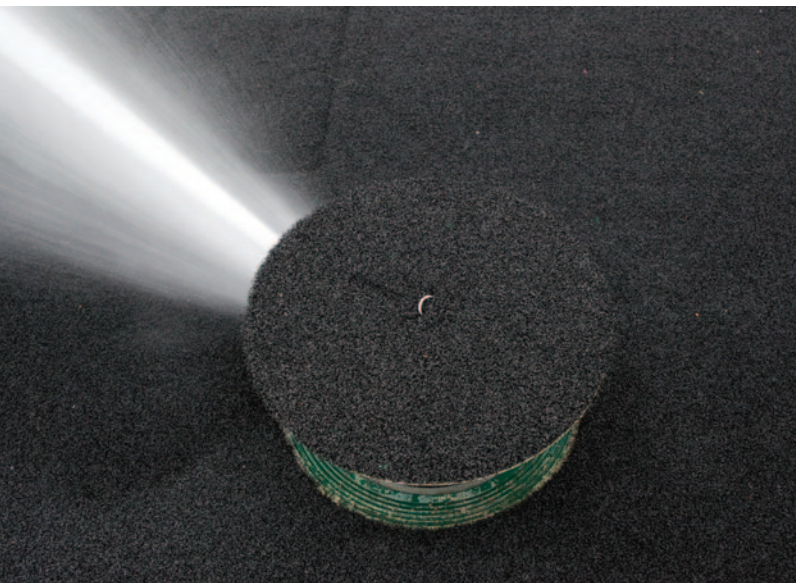


The two 3' x 3' light banks, housing 16 shatterproof bulbs, provide the UVC energy required to kill dangerous MRSA & HIV.



The miniZapr is also available, which is a great solution for hard to reach spaces, locker rooms, weight rooms, fitness areas, bathrooms, and all athletic surfaces.

greensgroomer.com



» **UNDERHILL MIRAGE M-160 SPRINKLERS** were fitted with a JG Top Cap covered in AstroTurf 12 for a seamless appearance and improved player safety. Heads can be adjusted from 30° to 360° of coverage. Rotation speed is also adjustable from 100 to 240 seconds.

Mirage sprinklers have been installed on Olympic stadiums and university fields around the world. The heads have a pop-up height of 2 ¾ inches and can be adjusted from 30° to 360° of coverage. They have a 23° trajectory and the rotation speed is precision adjustable from 100 to 240 seconds.

NEW JG TOP CAP

Graydon suggested several modifications that helped achieve a perfect, seamless appearance while also ensuring that the “carpet” was never disturbed or compromised by the high-pressure heads.

“First, we trimmed back the edge of the AstroTurf to 1 ½ inches from the sprinkler case. This allows all four Mirage upper and lower nozzles to completely clear the turf when operating. If turf is too close to these high pressure nozzles, the carpet can be abraded or separated from the base by water exiting the nozzles.”

A second suggestion was the modification of the Mirage sprinkler cap. Since the AstroTurf was now installed further away from

the sprinkler body, a new Underhill accessory, the JG Top Cap, was introduced. The new Top Cap (essentially a thin, 4-inch wide metal pancake) was screwed onto the existing Mirage cover and crowned with the synthetic turf. When retracted, it matches up perfectly with the carpet all around for a seamless appearance and unobstructed play.

Underhill and Sports Field Specialties also provided eight new Turf Box Kits, one for each zone, that house all the irrigation components in a single metal vault. Neatly packaged and out of sight, the Turf Boxes include all system components, including the isolation valve, electric sleeve valve, ductile iron swing joints, fittings and assemblies, along with the sprinkler. Easy through-the-top access allows routine maintenance without disturbing the turf.

The irrigation package also features an Underhill 2Wire controller with remote capabilities. Before practice and games, Program A is run, setting off the eight Mirage sprinklers in rotation. The 90° corner heads run for one minute each and the 180° field heads run for two minutes each, for a total of 12 minutes. At half-time, Program B is run, launching four Mirage sprinklers in sequence to clean, cool and wet the playing surface again in 8 minutes.

With its showcase field hockey facility, Princeton is at the forefront in presenting a new model for international field hockey competitions.

“We are currently working with FIH representatives and reviewing the traditional standards, which require complete watering within an 8-minute window at halftime. Bedford Field is consistently hydrophilic, fast and ready for play with a lower volume of water,” says Graydon.

“Our experience in working with AstroTurf and Underhill is that these companies are innovative thinkers who have the same goals of excellence and high performance that we value at Princeton. It’s been a great match-up of teams and talents.” ■

» **PRINCETON’S** Associate Athletic Director for Facilities Jeffrey Graydon oversees capital projects and manages the athletics facilities staff. He oversaw the design and construction of the Bedford Field facility.



24th Annual Conference & Exhibition
Tues., Jan. 15 - Fri., Jan. 18, 2013
Daytona Beach, FL

SportsTurf
MANAGERS ASSOCIATION

Experts on the Field, Partners in the Game.

Get On Track for More Education, More Trade Show, More Value

New This Year!

2 Keynote General Sessions



Ian Hill,
internationally
known speaker who
inspires change



Dr. Michael Mann,
climatologist and
Nobel Peace Prize
winner

Education Program starts one day earlier



**Introducing the
STMA Academy**
Higher level learning
opportunities included
in full conference
registration price

90+ hours of Education - Same Low Price

- **1 day education and trade show package available for \$140!**
- CEUs awarded by NRPA, NIAAA, ASBA, PLANET, GCSAA, IA, ASLA
- Florida Pesticide Recertification Credits also awarded
- Conference includes meals and one full day of pre-conference workshops
- **Now Featuring 11 Educational Tracks:** Industry Developments, Professional Development, Facility Management, Agronomic, Synthetic, Water, Sustainability, Baseball, Pest Control, Construction, and Research



For the complete event and education schedule,
go to www.STMA.org or call 1-800-323-3875 for a brochure

EARLY BIRD REGISTRATION ENDS DEC. 15

GREENCARE FOR TROOPS

RECEIVES WHITE HOUSE RECOGNITION



» **DEN GARDNER** pictured with Second Lady Dr. Jill Biden. Gardner represented Project EverGreen and GreenCare for Troops at an event in Washington, DC honoring America's top 20 volunteer military programs.

As I walked through three separate areas of security a couple months ago at the White House (yep, Mr. Gardner Goes to Washington), my thoughts turned to September 11, 2001, and how the world has so drastically changed since that day of horror for millions of Americans.

I said to myself: "How on earth did being involved with Project EverGreen result in us getting a group to the White House? It's almost too difficult to comprehend!"

The burden on military families through two wars has been incredible. These true patriots have kept us safe for more than a decade since the death and devastation that day at the Twin Towers, the Pentagon and a field in Pennsylvania where an airplane of heroes went down to prevent another murderous attack by terrorists. But little did we know the role Project EverGreen would play the past half-dozen years in the lives of these thousands of military families.

Although the tragedy of September 11 will stay with us forever, a simple request by Project EverGreen board member Phil Fogarty 6 years ago ultimately resulted in a national program to spread the good word about the benefits of green spaces through GreenCare for Troops. Today, with a database of more than 12,000 military families and 3,500 volunteers nationwide, this Project EverGreen program is known nationally.

To this day, I'll remember that conversa-

tion with Phil (a lawn care operator in suburban Cleveland). "I've been helping some military families with free lawn care while the major breadwinner has been deployed," he explained. "Maybe we can do this nationally through Project EverGreen—help a couple hundred families and get a little publicity for our organization."

A few hundred families, huh? Well, this idea resulted in my journey to the White House back in April (with current Project EverGreen Executive Director Cindy Code and GreenCare for Troops Manager Joy Westenberg) to be recognized as one of the top 20 volunteer military programs in the nation by the White House. Through the Joining Forces Community Challenge (www.whitehouse.gov/joiningforces), Project EverGreen was recognized for its efforts by First Lady Michelle Obama and Second Lady Dr. Jill Biden.

During 2 days of tours and receptions at the Pentagon and the White House, organizations across the country were saluted for their efforts. You know you've made a difference as an organization when the Chairman

of the Joint Chiefs of Staff—Army General Martin Dempsey and his wife Deanie—pulled me aside at the Pentagon reception and remarked that they remembered reading about our program and how we've affected the lives of so many military families. "This is just the first step," General Dempsey said to me. "Now we need to meet their needs as they return and face a new life back from war."

Wow! Project EverGreen has a major role to play. And we will be there, helping families and promoting how important it is to have a managed green space from an environmental, economic and lifestyle standpoint. How proud TPI members must be to know that through their financial contribution to Project EverGreen, they are making a difference in the war on terrorism.

And don't think I didn't get goose bumps on the South Lawn of the White House when Dr. Biden, during her remarks, picked Project EverGreen and GreenCare for Troops as one of the three out of 20 she mentioned verbally to the audience. "Programs like GreenCare for Troops, a free lawn service for military families, helps make dreams come true," she said. ■

Reprinted with permission from Turf News. Den Gardner was the first executive director of Project EverGreen in 2003, and is currently is on the executive committee of Project EverGreen. He also serves as editor of the Turfgrass Producers International's Turf News. TPI has been a contributor in time, talent and funding for Project EverGreen since its first meeting 9 years ago in Minnesota. Executive Director Kirk Hunter has been active on Project EverGreen's officer committee for many years.