



>> **Above left: WATSON** is grounds supervisor at Pine Hill, a small school district in southern New Jersey near Philadelphia. The district shares a property line with world famous Pine Valley Golf Club.

What does “safe playing fields” really mean?

I AM THE GROUNDS SUPERVISOR at Pine Hill, a small K-12 school district located in the southern part of New Jersey not far from Philadelphia. The district shares a property line with world famous Pine Valley Golf Club. The grounds department is responsible for maintaining about 60 acres of irrigated turf district wide. The Pine Hill grounds crew members are Carmelo Anguilla, Greg Bunting, Tom Crosby and Bill Loftus.

Over the course of the past year, just about everyone involved in the turf industry most likely has heard the term “safe playing fields” used by a variety of people in regards to the safety of our children. Many times sports field managers have been portrayed as being trained only to apply pesticides on a schedule to deal with pests and not someone who is aware about safer alternatives that prevent these problems long term.

I have heard terms like “careless,” “uninformed” and “misguided” to describe those of us who apply pesticides on athletic fields. These types of statements have led me to stand up and try to bring some clarity to the conversation about safe playing fields in my home state of New Jersey. Lost in this conversation are the dedication, time and energy that sports turf managers put into their craft. Most people don’t see the pre-dawn irrigation checks, the weekend visits on site, and the amount of time spent at home researching, plotting and planning updates to our turf plan, all in pursuit of the safety of the athletes that use

I have heard terms like “careless,” “uninformed” and “misguided” to describe those of us who apply pesticides on athletic fields.

our facilities. With that being said, let's look at what really constitutes a "safe playing field."

Of course I don't know if there is one true definition for a safe playing field but turf quality is a good place to start the discussion. If a field has a smooth, well-rooted and groomed surface it is more than likely to provide a safe playing surface for just about any sport. The key ingredients for quality sports turf are fertility, proper seeding, good cultural practices and responsible pest management (IPM).

In New Jersey, there is a new fertilizer law in place. Every state has different laws; it is always best to stay informed and up to date with current local laws. Our law restricts the amount of nitrogen applied per year, sets blackout dates for applications (12/1-2/28), prohibits potassium without a soil test, and sets standards for professionals and homeowners alike in regards to fertilizer applications. No matter where you are, don't use the law as an excuse to ignore fertility requirements on your fields. It takes some thought and close monitoring to comply with these types of laws but consistent fertility applications throughout the year are very important to maintain quality turf. Spring turf requirements call for moderate amounts of nitrogen (my choice is ammonium sulfate), while summer stress can be dealt with by introducing an organic or slow release product. Fall should be reserved for higher amounts of nitrogen to ensure your fields will survive the demands of the season and falling soil temperatures. This is a very important point that is often overlooked.

Fall fertility serves two purposes. First, nitrogen (again, ammonium sulfate is my choice) availability is crucial to establish new seed and also for recovery from fall sports damage. Secondly, it allows turf growth to extend into the end of the fall sports season. Too often fall fields are allowed to stop growing when temps drop but field use continues. Starting early in the spring and continuing all the way through the fall season will give you maximum results for your fertilizer dollar and provide a dense, consistent turf cover for the entire year.

DEALING WITH CRABGRASS

Dr. Dave Minner from Iowa State University and I talk often about how difficult it is to overcome the amount of seed heads produced by crabgrass. Having large amounts of seed introduced into the soil and then worked in by the athletes seems like a tough thing to deal with. Crabgrass technology can be used by the sports field manager in the same manner. From August through November we live by the motto, "If you see brown, throw it down." This means introducing perennial rye seed any time you see bare soil.

Broadcasting seed during the fall sports season is the key to keeping turf coverage all year long. A common perception is that you are wasting money if you seed during field activity. I disagree. Due to unpredictable weather in the spring and hot/humid conditions in the summer, fall is the season of choice for overseeding. Unfortunately, this is when athletic fields absorb the most abuse and wear. I take a nothing ventured, nothing gained approach. If you don't seed during the fall, you will

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» LEFT TO RIGHT: Bill Loftus, Carmelo Anguilla, Tom Crosby, Brad Park (Rutgers University), Rich Watson and Greg Bunting.

end up with a good deal of bare soil at the end of the season. I believe that it is easier to grow turf from seed during moderate fall weather conditions than any other time of year. Perennial rye is my choice for use during this timeframe due to its wear tolerance even as seedlings.

As the season winds down, we start to introduce turf type tall fescue into the fields. This is done later because tall fescue doesn't hold up to traffic upon emergence as well as perennial rye does. Tall fescue however, has displayed more disease resistance on our fields. It is not a common mix, but it has been working for us. My friend Scott Bills, CSFM, also points out that overseeding regularly allows for the introduction of multiple generations of seeds, including newer varieties. The amount of seed planted in the fall allows our fields to emerge from winter with almost full turf cover. This gives us a better chance of fighting off pests and stress as we enter the height of the growing season.

Speaking of pests, sometimes even with your custom fertility plan in place and an overseeding program enacted things can still go wrong. In New Jersey, the School IPM Act is the law that guides schools through pest issues.

Integrated Pest Management is often a misunderstood term. The EPA has a great definition for IPM. It is an approach to pest management that blends all available management techniques-

nonchemical and chemical- into one strategy: Monitor pest problems, use nonchemical pest control and resort to pesticides when pest damage exceeds an economic or aesthetic threshold. Our school IPM law in New Jersey is a little more restrictive than that. If pest problems persist with non-chemical options (proper mowing/irrigation, aeration, seeding with appropriate varieties and soil monitoring/testing) being implemented, the law requires that you consider a low-impact pesticide from a predetermined list of products before making a restricted pesticide application. In my mind it is a very simple process.

The educated field manager is moving away from blanket spray applications and beginning to treat the field within the field. Every field is different with its own needs and requirements.

By performing good cultural practices in conjunction with proper fertility and a good seeding program, you can do some impressive things with your turf. However, it is the sports turf manager's job to take responsible action when pest stresses start exceeding thresholds and put field safety at risk. Gaining an understanding of pest

problems through education and knowing where to set your thresholds are the keys to a good IPM program.

We live with a lot of things on our fields and choose to treat only after thresholds are exceeded and field quality as related to safety is in question. We have considered the limited list of low-impact pesticides provided in the law. Reading the Rutgers report: "Managing Turf Using Low Impact Pesticides" was very helpful in shaping our decision. Last year the cost and efficacy of these products did not allow us to use them in our turf program. We are currently evaluating this decision for the upcoming year. To help us make this decision, we asked Brad Park, the sports field extension agent for Rutgers, to come to our site and evaluate our pest issues and the products that are available to deal with them. In the future, I hope there will be an expanded list of products to choose from.

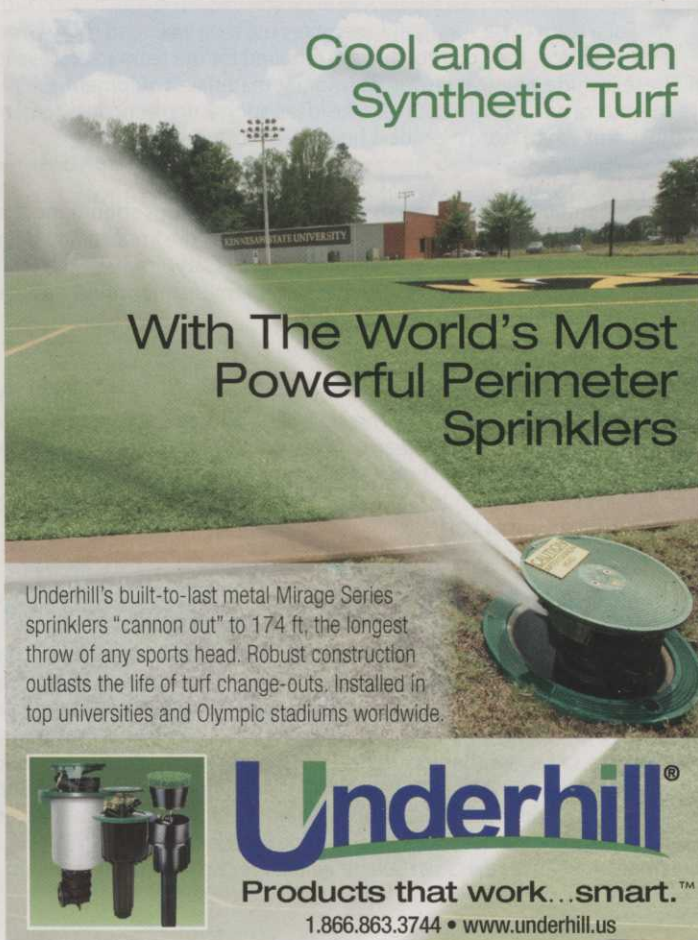
When the decision is made to apply a pesticide, we give consideration to reduced risk products first if they are available. After a product is selected, we look at the field's history to decide what part of the field needs to be sprayed. A spot application may be in order or maybe just the middle of the field is compromised. Sometimes it may be necessary to spray the entire playing surface, but not the buffer areas surrounding the field.

The educated field manager is moving away from blanket spray applications and beginning to treat the field within the field. Every field is different with its own needs and requirements. They need to be treated accordingly. Having a field history report for each field is

a great help. In fact it is part of the law for schools. Having a hard copy pest sighting log is too. This is a portion of the law where I have fallen short in the past. Having a field's history in my head or in a notebook does not fulfill the requirements of the NJ school IPM Law.

Moving forward, I have created field log binders for all of our sports fields. It will allow me to track problems and make decisions with all of the information right in front of me. It has taken a long time to get to this point and it wasn't always easy. IPM is a 12-month process that may take some time to implement. A large part of our turf management plan for this year is based on what took place last year. Sometime you need to look back to move forward. This process may seem like a lot of work to some, but the truth of the matter is Integrated Pest Management is here to stay. For some of us it is the law. As I see it, the most important product or tool in providing quality turf isn't something you can buy. It rides on a mower, monitors pests, checks soil conditions and usually is the first one in and the last one done every day. Sports turf managers are getting educated and doing whatever it takes to provide truly safe playing fields. ■

Rich Watson is the grounds supervisor for Pine Hill Public Schools, Pine Hill, NJ. He says, "Special thanks to my facility manager Tom O'Donnell. His understanding of what needs to be done allows us to do some pretty great things here."

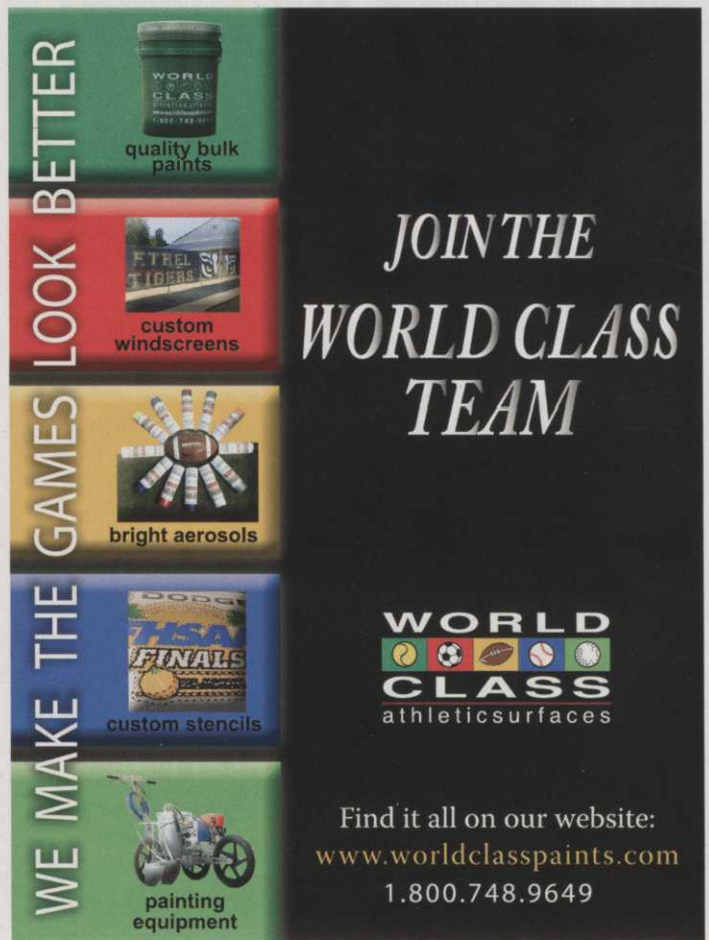


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Sports turf veterans on managing personnel

ABBY MCNEAL, CSFM, director of turf management, Wake Forest University

Have you ever had any of-
ficial training in personnel
management?

McNeal: There were no
classes that were “officially”
geared towards personnel
management during my col-
lege days, but I have taken
several at STMA conferences
and through work seminars. I
am fortunate that Wake For-
est has a strong professional
development

philosophy and provides free
classes to employees. I have
taken several classes (ranging
from half day to 1.5 hours)
that focus on team building,
leadership, and personnel
management skills.

What are the most impor-
tant qualifications you seek
when hiring?

McNeal: The main
qualifications that I look for
when hiring someone are ed-
ucation (high school diploma
and at least 2-year degree)
and varied field related expe-
rience. I want to see that the
person is committed to bet-
tering themselves through
education and experiences
after high school. Varied ex-
periences help expose the
person to the different areas
that we as sports turf man-
agers face in our jobs and I
think that they become bet-
ter contributors to the staff
because of the exposure.

How do you handle “con-
structive criticism” from em-
ployees, whether it is meant
to helpful or not?

McNeal: We all want
criticism but are not always
prepared for what we hear. A
good team/crew will give each
other good feedback on a reg-
ular basis. I am all for any
type of criticism as long as it
is for making us all better and
that it is presented in a pro-
fessional manner. Some days,
with all the work and life
stresses the timing of the criti-
cism (whether receiving or
giving) is critical. I try to be
as open as I can when receiv-
ing the feedback so that the
end result can benefit every-
one and the situation can im-
prove.

Have you found that
matching personalities with
specific tasks to be performed
works? How do you deter-
mine who does what best?

McNeal: I do try to
match personalities and skills
set as well as mix and match
the staff so that they can learn
from each other. Some days
two staff members will ac-
complish a task better than
others. If time allows I will
pair up employees that may
take a little more time and
have a better sense of the de-
tails with one that tends to be
faster at getting the job done,
with the goal that they can
balance each other out and
learn from each others skill
set. The paring can be a risk

7 habits of extraordinary teams

By Geoffrey James

EVERYBODY AGREES that “teamwork” is crucial to business success but few people bother to define what “teamwork” really is. A few years ago, Phil Geldart, author of “In Your Hands, the Behaviors of a World Class Leader,” explained to me a set of principles that allow teams to overcome even the most thorny business challenges. Based on that conversation, here are the seven characteristics of truly extraordinary teams:

1 EXTRAORDINARY TEAMS HAVE A LEADER.

Regardless of whether team members come from the same organi-
zation or are collected from multiple organizations there must always be
a designated and recognized team leader. Even though the team leader needs
rest of the team to deliver the result, the team leader—not the team—is re-
sponsible for that result.

2 EXTRAORDINARY TEAMS HAVE QUANTIFIABLE GOALS.

Teamwork requires that every member of the team understand ex-
actly what the team is supposed to achieve. That sense of exactness is
only possible when the team’s goal can be measured objectively, which means
the goals must be quantifiable rather than vague. So, for example, a goal to
“Build better customer relationships” is meaningless mush. By contrast, “Increase
re-order rates by 50%” is precise and understandable.

3 EXTRAORDINARY TEAMS HAVE WELL-DEFINED ROLES.

Each team member should know exactly what he or she must do
day-to-day so that the team achieves its goals. Without that clarity, team
members may work at cross-purposes and trip each other up. The intersecting
roles of the team members should be thought through carefully at the incep-
tion of the effort; they can then be refined as the team moves forward.

4 EXTRAORDINARY TEAMS SHARE RESOURCES.

For a team to be successful, members must be willing to share what-
ever resources they control that are required for the team to achieve its
goal. These include physical resources (money, materials, equipment, etc.) as
well as mental or emotional resources (like ideas, suggestions, encouragement,
or enthusiasm). When team members hoard, teams are weakened.

5 EXTRAORDINARY TEAMS COMMUNICATE EFFECTIVELY.

Depending upon the goals and time frame, teams should meet at
least once a week, and more often if necessary. More importantly, team
communications must be tooled (or retooled if necessary) so that each team
member understands what’s going on and, perhaps more importantly, what is
expected of him or her before the next meeting.

6 EXTRAORDINARY TEAMS ARE 100% COMMITTED.

Commitment expresses itself through consistency, particularly in be-
havior of the team members. They’re willing and able to do what needs to
be done in order to achieve the team’s goals. While extraordinary teams are
committed, however, they aren’t obsessive: members shouldn’t be sacrificing
their private lives for the team. In fact, team members can’t perform consistently
when their lives are out of balance.

7 EXTRAORDINARY TEAMS DISCOURAGE BIG EGOS.

A strong ego is a good thing in many business situations, but not
inside teams. For a team to function effectively, individuals on the team
must hold their own egos in check and make both the team itself and the
team’s goals more important than individual members or their individual
contributions. Otherwise, grandstanding and prima donna behavior can
short-circuit everything.

Needless to say, these “habits” do not emerge automatically. You need to
make sure you’re fostering the kind of culture that helps these teams develop,
because teams founded with these habits in mind are far more likely to succeed
than teams that just meet periodically and hope for the best.

Geoffrey James writes the “Sales Source” column for Inc.com.

but if they truly take the time to learn the results over the long haul are worth it. Balancing employee skills and the work load but it's also 'on the job training' from peer to peer and that to me is important to creating a stronger team.

ALLEN JOHNSON, CSFM,
fields manager, Green Bay Packers

Have you ever had any official training in personnel management?

Johnson: I have not had any formal training in that area other than some human resource type things that were covered in an administrative law class I had in the past. I think this is an area that our industry could pay attention to more and help those who are tasked with managing people become better at it.

What are the most important qualifications you seek when hiring?

Johnson: Qualities I seek are intelligence, passion for the job, and ambition.

How do you handle "constructive criticism" from employees, whether it is meant to helpful or not?

Johnson: I'm not sure how I handle it. My guys actually laughed when I showed them this question. I do think it is important to listen to your staff and think about what they are trying to convey to you. At the end of the day, I try to create an atmosphere at work where all my guys are comfortable and enjoy coming to work each day. I try to cultivate an environment where the crew gets along and works together so we can be productive and happy in our endeavors. That is my goal. If my guys give me feedback about my approach that isn't helpful to that goal I try to correct my actions.

Have you found that matching personalities with specific tasks to be performed works? How do you determine who does what best?

Johnson: Everyone has certain strengths and personality differences so it isn't surprising that certain people are better suited for certain tasks than others. You won't know until you go through a trial and error period. You have to let everyone try all the different types of work you have available to figure that out. For the most part, I try to alternate the tasks amongst my group so that boredom doesn't set in and they get plenty of variety. During our peak times when we need to be operating at our maximum efficiency I take it into account much more.

MIKE MCDONALD, CSFM,
turf manager, University of Minnesota

Have you ever had any official training in personnel management?

McDonald: Not really. I just keep my eyes and ears open for more info and techniques.

What are the most important qualifications you seek when hiring?

McDonald: I do mostly student hiring. That's an easy one; three things: first, what openings do you have in your class schedule? (most of the work done before 1pm); second, do you like manual labor? (working with your hands and getting dirty); and third and most important, how bad do you need the money? (determines how often they will show up and on time).

Full-time people are much harder; I tend to go with what the person is made of, not the resume. What's the person's personality? Will [he or she] mesh with co-workers, staff and coaches? What's the work ethic—can they handle extra work? Will the person do quality work in a timely manner? What do the people say about them from past employment? Get to know the person before you hire. Resumes are good to see what knowledge they have, but resumes tend to be "beefed up." Looking at some people's resumes, I think they should be MY boss.

How do you handle "constructive criticism" from employees, whether it is meant to helpful or not?

McDonald: I take it all in, discuss with individual or all co-workers to see if it is appropriate for our situation, then move on.

Have you found that matching personalities with specific tasks to be performed works? How do you determine who does what best?

McDonald: Most definitely, if two people clash or don't get along the task will suffer, either the time it takes or the quality it gets. I like to see everyone on staff be able to perform all the different tasks/situations your operation has to offer. You have to give everybody a chance at every different aspect of the task to be performed. You can see who handles what issues, concerns or equipment better than the other person and then make a decision if one is needed. ■

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By Robert Kravitz

up the windows to begin ventilating the area, removed what was salvageable, and then looked for a wet/dry vacuum system to soak up the water.

However, like many gyms, this facility did not have a wet/dry vacuum or any equipment that could be used to remove the water. Although the manager knew a wet/dry vacuum was called for, he did not know specifically what type of machine was needed, where to turn for advice, whether the necessary equipment must be purchased or could be rented, how to rent a machine, or what to look for in the machine once located.

THE RENTING OPTION

As with most gym facilities, the managers of this gym had purchased its entire inventory of most frequently used cleaning tools and equipment—everything from cleaning cloths and chemicals to vacuum cleaners and a floor machine, used mainly to scrub tile floors. However, especially when emergencies arise, managers should also know what types of cleaning tools and equipment are available, where to get them, and whether it is best to purchase the equipment or simply rent it.

Managers should purchase equipment that is used on a regular basis. This does include vacuum cleaners and floorcare equipment—any tool or machine that is used from a couple of times per month to daily.

However, for equipment used less frequently than this, renting might prove to be a better and more cost-effective option. This is true for the following reasons:

- Renting allows users to test before they buy. Cleaning a gym can be demanding, and not all tools and equipment are up to the job. It is often a good idea to test different machines and models first to find those that are best up to the challenge, perform well, are ergonomically designed making them easy to use, and are most cost effective.

- Renting may allow for tax savings and tax simplification. In most cases, renting cleaning equipment can be treated as a simple business expense; rarely does depreciation, maintenance, or other tax-related issues come into play when renting equipment.



Equipment renting options for inside facility managers

A 24-HOUR GYM in the Chicago area decided to fudge a bit on its “always open” commitment and close at 10 pm on Saturday and Sunday. According to the manager, there simply were not enough late night users of the gym, located in a downtown business section of the city, to warrant the 24-hour weekend staffing.

However, if the change had been postponed just a couple of weeks, a serious problem likely could have been averted. On a Saturday night shortly after the cutback decision was made, a leak developed in the plumbing in the deserted men’s locker room. By Sunday morning when the gym reopened, the locker room was flooded

with several inches of water that was finding its way to the floor below.

The manager, who rushed to the scene, was not only astute at running a gym but also savvy about this kind of construction emergency. He and his staff turned off all water to the gym, located the source of the water damage, called the plumber, opened

- Renting is a solution when special cleaning tasks must be performed. Most facilities refinish hard-surface floors and clean carpets two or more times per year. Having in-house crews perform these tasks can offer a significant cost savings, as long as you have the proper cleaning equipment. Here again, high-performing scrubbers and carpet extractors can be rented, saving gym owners thousands of dollars.

- Renting is an option for those times when time is of the essence and extra equipment is necessary. In some cases, gym custodial crews may have the cleaning tools necessary to perform a particular cleaning task, but renting additional equipment for specific tasks can help get the job done faster.

- Those rare or onetime tasks such as cleanup after remodeling or new construction are also opportunities to save money by renting equipment. Although the final step in most construction projects typically is the cleanup phase by those doing the work, it is not unusual that gym custodial crews must perform what is termed a "final" cleanup. Once again, renting is often the most cost-effective way to acquire the equipment necessary for these tasks.

- Renting is great for handling emergencies. As in our example, renting wet/dry cleaning equipment, air movers, and even mops and buckets to handle emergencies such as water damage "gets the job done at a significantly reduced cost."

SELECTING RENTAL CLEANING EQUIPMENT

Although managers do not need to be as thorough when selecting cleaning equipment to rent as they are when purchasing such machines, they still should do their homework and spend some time analyzing machines before renting them off the floor. The goal is to select a machine that does the job [and] does it quickly, effectively, and safely.

Whether it is a floor machine, scrubber, or carpet extractor, you should select only equipment manufactured for the professional cleaning industry from well-known, established manufacturers. Cleaning a gym invariably calls for professional equipment. Tools designed for home or residential use will simply not do the job.

Some rental retailers purchase cleaning equipment made by lesser-known companies because the machines are often less expensive. However, these machines may not be up to the demanding needs of a gym facility, and their overall performance and durability may prove inadequate. Ask the rental retailer if the equipment meets professional standards and [if] the company is a well-established cleaning equipment manufacturer. Just because you are renting does not mean you should use inferior equipment. And remember, when it comes to cleaning, time is money. A more effective, professional machine will save money in the long run.

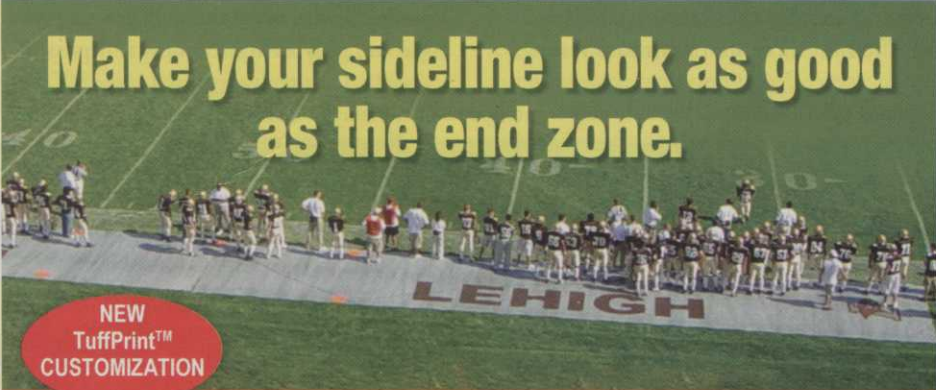
Selecting a rental retailer is similar to selecting a janitorial distributor or other vendor a gym manager works with regularly. You want to find someone who is knowledgeable about the equipment and cleaning tasks, [is] dependable, [is] helpful, and, possibly most important, will spend some time working with you.

Because of this, I suggest a "big-box" retailer may not necessarily be the best choice. In many cases, the cleaning equipment available for renting at a big-box store may be designed for residential and not commercial use. And of even greater importance, the store will likely not have the personnel available to help with any necessary training or if problems arise.

I would suggest instead working with a rental company specializing in renting all kinds of equipment. Along with having a more extensive product selection, usually these companies staff people who are educated as to how the equipment is to be used and can troubleshoot should problems arise. And most important, they will know what tools and equipment are necessary when an emergency, such as water damage or flood, strikes. ■

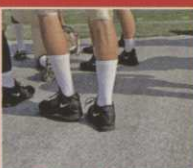
Robert Kravitz is a former building cleaning service contractor and now a writer for the professional cleaning industry.

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Getting your field markings right

TIMES WERE, the grounds crew re-lined the field as necessary. Translation? In warm weather, with sufficient rain and heavy play, someone might have to go out there every few days, if not more often, with a line marker and chalk powder. And if you were talking about a field that was used for multiple sports, frequent re-lining was a given.

The development of line paint and equipment made it possible to do the job in less time, but as grass grew and received wear from a variety of sports, re-marking the fields remained a big part of the work. And as land for fields became increasingly scarce, school fields (as well as park fields, camp fields and more) began to get increased use. By the end of the season, crews often found themselves marking mostly dirt.

The advent of synthetic fields has created ever-increasing efficiency, allowing fields to host more sports without resting,

seeding or sodding, and save time by (a) being ready for play after a rain and (b) not needing re-lining.

Or does it? As it becomes the norm for fields to host a variety of sports, it becomes necessary for them to have a variety of markings. After all, one facility may see athletes take the field for football, soccer, lacrosse, field hockey and more, each featuring its own dimensions and markings. Even within specific sports, there can be variations in size between men's and women's fields (or on the high school level, boys' and girls' fields). So how is it possible

to mark the field without it taking on the "gymnasium floor" look?

Part of the advantage of synthetic turf is the ability to have lines and markings inlaid when turf is installed. But how to balance the needs of multiple sports? Prioritize, say builders. It's as simple as: 1) deciding which sports will be played, and 2) deciding which sports will be played the most often.

For the sports played the most often, choose lines that have the greatest contrast to the turf; in other words, if soccer is the dominant sport, choose white lines for delineation. If football is the second most popular, go with yellow there. Other sports should use more muted colors, such

A field contractor can work with you to decide upon markings and colors that work for you. The ultimate goal is to allow players and officials to have a clear sense of boundaries at all times.

>> **HIGH POINT UNIVERSITY**; photo courtesy of Medallion Athletic Products, Mooresville, NC





Left: SANTA BARBARA CITY COLLEGE; photo courtesy of UBU Sports, Atlanta, GA **Middle: TAOS ECO PARK;** photo courtesy of Lone Mountain Contracting, Bosque Farms, NM **Right: TECUMSEH HIGH SCHOOL TRACK FACILITY;** photo courtesy of Foresite Design, Inc., Berkley, MI

as dark red, dark blue, etc. Creating “tick marks” or “hash marks” may also work well, depending upon the venue. A field contractor can work with you to decide upon markings and colors that work for you. The ultimate goal is to allow players and officials to have a clear sense of boundaries at all times.

A fairly new development in artificial turf fields is line paint (temporary and permanent); information on such products is readily available. However, before applying anything, field managers are advised to get recommendations from the company that installed their fields.

Corner flags, cones, indicators and other equipment can also help provide visual boundaries. The choice of equipment is a personal one, and one that takes into consideration the needs of the athletes, officials and coaching personnel.

LOGOS

Placement of logos in end zones and at mid-field is a long-standing tradition and a part of school pride. In many cases, logos and team names can be a permanent part of the surface. If a new logo is needed on a field, talk to a turf builder about the best means to accomplish this. (Do not attempt to mark turf as a do-it-yourself project—an “artwork” project that goes wrong can be unsightly and expensive to repair.)

LINE MAINTENANCE

Even with inlaid markings, however, fields are not entirely maintenance-free. Because over time, turf infill can (and will) shift because of constant foot traffic (particularly in areas like the crease in a lacrosse field), the lines may take on a wavy appearance. This also happens when the turf surface gets slightly twisted, as it will when band practices or repetitive motion drills are held on the field.

Take a good look at the turf on a regular basis, and don't be afraid to call your builder for a quick consult if you notice anything looking out of place. Your field is, after all, an investment, and you want to make the most of it.

If using an approved removable paint on your turf (we're assuming you're following the manufacturer's directions, of course), make sure to use proper equipment for marking and removal. Many paint manufacturers recommend techniques and proprietary equipment.

A WORD ABOUT THOSE “OTHER” MARKINGS

A lush field of natural grass may be able to soak up the occasional bottle of sports drink or soda pop without complaint, but field builders warn against bringing those items or anything else that can stain, spill or leave a residue onto a synthetic surface.

After all, the synthetic turf won't grow, and no mower will be passing through to cut down a stained area.

Allow only water into the field enclosure, and in case of any stains or food residue, contact the field builder to get a recommendation on how to clean it off. (In some cases, the solution may be very simple, but it is always best to check before attacking a stain with something that might cause damage to the turf).

Walk the field regularly and remove debris, such as candy wrappers, food, bottles or anything else you see. This includes leaves, sticks, pine needles and cones, and more. (Remember such materials can, over time, leave sap and cause staining).

You've put a lot of time, resources and planning into this field. Put the same amount into deciding upon the right markings (and the right method of marking). Then, make sure the original markings are the only ones that stay there. Your field will reward you and your athletes with years of good service as a result. ■

Mary Helen Sprecher wrote this article on behalf of the American Sports Builders Association. Available at no charge is a listing of all publications offered by the ASBA, as well as their Membership Directory. For info, 866-501-2722 or www.sportsbuilders.org.



Lone Star turf: Texans share their grass management experience

Editor's note: This article was written by Adam Slick, who works for Jacobsen. We appreciate his sending us a report from his trip to Texas.

» Above: **CHRIS MORROW**, field supervisor for the Dallas Cowboys' practice facility in Valley Ranch, TX oversees 4 acres of TifSport bermudagrass.

» Below: **CHRIS MORROW** uses a penetrometer to measure compaction on his turf. The ground pressure from linemen can push readings to 700-800 psi.

TEXAS TURF has always been a battleground. In fact, the state has been under six different flags during its storied history. For sports turf managers in the Lone Star state, the battle rages on. We recently visited four professional sports fields in Texas to learn how they handle the daily rigors of managing turfgrass in one of the most challenging climates in the transition zone. We learned that they're fighting much more than just Mother Nature.

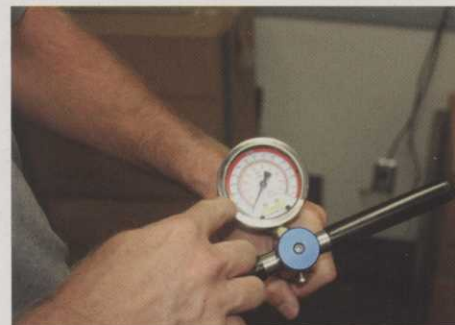
COWBOY COMPACTION

Chris Morrow is the field supervisor for the Dallas Cowboys practice facility in Valley Ranch. He's a one-man show, playing several positions on the Cowboys' squad including spray technician, mechanic, field painter and grounds manager for 4 acres of turfgrass.

Before coming to the Cowboys, Morrow helped manage the turfgrass for the Carolina Panthers at Bank of America Stadium. In Dallas, Morrow maintains TifSport, a cousin of 419 bermudagrass. The breed gives him a thick rhizome mat, which holds up better to the 300+ pound linemen that wage war between the hashes on his field.

"The compaction from the players is probably my biggest challenge," says Morrow. To monitor the compaction, Morrow uses a penetrometer. "A reading above 300 psi tells me I've got compaction out there. By mid-season, it might be 700-800 psi in the middle of the field."

To open up the soil, Morrow uses a variety of different applications including high-pressure water, core aeration, verticutting and his newest toy, a linear de-



"A reading above 300 psi tells me I've got compaction out there. By mid-season, it might be 700-800 psi in the middle of the field."
— Chris Morrow

compactor called the Shockwave that penetrates the soil with large, rotating metal blades.

Morrow also uses reel mowers to trim the playing turf to 3/8 inch and the surrounding field grass at 5/8 inch. He raises that to 7/16 or 1/2 inch when overseeding with perennial rye in October.

"In my experience, bermudagrass does its best below 1/2 inch. I think you get better stolon coverage at that height," says Morrow. To stay on top of it, Morrow will mow all 4 acres himself, six times a week, which doesn't leave much time for maintenance. He leans on local Jacobsen dealer Luber Bros. to keep him up and running.

"If I need anything at all, the guys are out here the next day, which is great," says Morrow. "With just me out here running the show, I can't afford any downtime."

STANDING TALL IN ARLINGTON

While Morrow likes his grass on the low side, down the road in Arlington the Texas Rangers are playing a whole different ball game when it comes to turf height, as director of grounds Dennis Klein explains.

"As you would expect, Nolan Ryan, our owner, president and CEO is big on defense and pitching. He asked me how we could slow things down and I suggested growing out the infield," says Klein.

And grow it out they did. Klein and his team keep their Y2 zoysia grass as long as 1 3/4 inch during the season. It's too long for a reel mower, so the crew uses a rotary mower with a roller on the infield.

"Of course, the hitters don't like the tall grass but the pitchers love it," says Klein. "Also, unlike a lot of infields you see, we don't stripe it. Some players can lose the ball in the patterns and we don't want to make the game any harder than it already is."

» **THE TEXAS RANGERS** practice solid tine aerification twice a month and pull cores once a month.



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» **A MAINTENANCE CREW MEMBER** for the Texas Rangers mows a walk-out. In the background, another worker rakes thatch from the infield, which is kept at 1¾ inch to slow down the infield.

The outfields and walk-outs, both 419 bermuda, are maintained with reel mowers. “We like the groomers on the Jake ECLIPSE walk mowers, they stand the grass up better,” says Klein. “You can tell the difference, especially on the walk-outs, which typically see a lot of traffic.”

Klein uses solid tines twice a month and core aerifies once a month. If the Rangers make it deep into the playoffs, like they have the past 2 years, fall temps are warm enough for Klein to stay with bermuda. By December, temperatures drop dramatically and the team uses grow blankets to keep the soil temps up to 15% higher. They only overseed with perennial rye in the spring.

GOING GLOBAL IN THE COTTON BOWL

When it comes to turf traffic, no one sees more in Texas than the Cotton Bowl. The turfgrass at the legendary 93,000-seat municipal stadium, first built in 1929, is managed by Roland Rainey. Although it plays host to college football games, including the annual Texas/Oklahoma matchup, it’s also become one of the top soccer fields in the world. During the 1994 World Cup, the Cotton Bowl was ranked the number one field and was once ranked the number two soccer field in the world.

In addition to soccer and football, Rainey also hosts the Texas State Fair, large concerts and various other events throughout the year. Luxury retailer Neiman Marcus recently held an event at the Cotton

Bowl that required a 120-foot tent installed on the field. Managing the field within extremely tight deadlines is Rainey’s biggest challenge.

“One week we have to paint the end zones purple and black for Grambling vs. Prairie View and the next week we go orange and red for Texas vs. Oklahoma,” says Rainey. “To prepare for that, I’ll grow the grass 1/8 inch higher in the end zones, and then mow that out after the first game. We then put down a white base and put on the red and orange the next week.”

The wide variety of events also includes a wide variety of turf demands, as Rainey explains.

“It’s disrespectful for us to have American football lines on the grass for international soccer games, so we grow them out before a match, which can take up to 3 weeks,” says Rainey.

Rainey also has to deal with varying demands within each sport. “The Mexican and Latin American soccer teams like shorter grass for finesse play and we’ll cut it at ½ inch for them,” says Rainey. “But the Europeans play a more physical game, so when we host teams like Germany, we raise it up to ¾ or more.”

After the Texas/Oklahoma game, he will overseed with perennial ryegrass. One year, they let the bermudagrass go dormant and painted it for their bowl game in January. “The Arkansas coach said the field played better than when they were on it in September. I think that’s because they won the game,” Rainey says with a wink.

The Cotton Bowl is one of just a handful of municipal stadiums left, including the L.A. Coliseum, the Rose Bowl in Pasadena, RFK in Washington and the Liberty Bowl in Memphis. Of all the municipal and professional stadiums, the Cotton Bowl has the smallest staff and budget.

“With such a tight budget, we don’t have a lot of money for maintenance equipment. We’ve been using the same Greens King IVs for years because they fit into our budget and they’re very easy to work on,” says Rainey. “They do a great job for us.”

» **THE COTTON BOWL IN ARLINGTON**, managed by Roland Rainey, plays host to NCAA college football regular season and bowl games, international soccer matches, concerts and various other events. The Cotton Bowl is one of just a handful of municipal stadiums left in the United States.





>> A COTTON BOWL maintenance crew member prepares the field for a soccer match between Cruz Azul and Club America, two top teams from Mexico.

A MOVING EXPERIENCE IN HOUSTON

When plans for Reliant Stadium in Houston were first developed in the late 1990s, designers developed an ingenious turf system that allows the grounds maintenance crew to move natural grass in and out of the stadium to accommodate a wide variety of events. The mobile turf system makes Reliant Stadium one of the most versatile venues in the country and allows the turf to recover faster, providing a world-class playing surface for the NFL's Houston Texans.

Sports fields & grounds manager Brandon Smith and his team work with 8 x 8-foot puzzle pieces of turf that reside in 2,700 trays. The 173,000 square feet of turf spends most of its time outside in the Reliant Stadium parking lot. Each tray has an 8-inch sand profile, a layer of geotextiles, plastic and burlap on the bottom for circulation and water filtration. The trays are also equipped with forklift channels on the bottom, which promote air circulation.

Brandon grows more than two full fields outside so he can rotate in fresh grass as the

season wears on. He uses a color coding system to keep track of the turf sections.

"The goal is to give our players fresh grass every week. Ninety percent of football is played between the hashes," says Smith. "With this system, I can easily rotate out the middle when it sees too much wear. It's one of the reasons NFL players consistently rank us as one of the top fields."

Moving the trays into the stadium is an 8-10 hour process that uses five flatbed trucks and a fleet of forklifts. Once inside, the venue serves as a micro-climate that gives Brandon some unique options.

"When we're inside, I can close the roof if we see rain coming or turn up the air conditioning to condition the air and dry the surface," says Brandon. "We water, roll and mow inside the stadium. I can pretty much do everything except aerify and verticut inside the stadium. I actually prefer to oversee inside because there's no wind and I get better seed distribution."

"These sports field managers are truly unsung heroes of the game," says Ron Lubber, vice president at Lubber Bros., the Jacobsen dealer based in Dallas. "They put so much hard work, creativity and dedication into managing professional turfgrass in one of the harshest climates in the country. We're proud to support these customers who present some of the greatest playing surfaces in the world." ■

>> Below left: A MAINTENANCE CREW MEMBER for the Houston Texans mows the playing surface in the parking lot outside of Reliant Stadium, where the field spends most its time. Behind the field is the Houston Astrodome. >> Below right: A fleet of forklifts position trays of turf to prepare for a Houston Texans home game. Brandon Smith, Sports Fields & Ground Manager for Reliant Stadium, manages a total of 2,700 8 x 8-foot squares of TifSport. After the game, the squares return to the parking lot where they are maintained until the next home game.

