

While A-Turf builds many fields with the traditional dirt infield, synthetic grass in a color to simulate dirt or clay can be used in place of dirt, providing a natural ball response throughout the field.

All our systems are always built with quality materials: turf fibers, rubber, sand and adhesive. That will never change. Nor will the company's commitment to providing superior craftsmanship and responsive customer service.

ST: How did you determine there was a market for such a product?

Dobmeier: Traditionally, the athletic field business has been oriented more toward what is known as the oval or rectangular-type fields for football, soccer, lacrosse and field hockey. Over the years, as schools realize the multi-sport benefit of synthetic grass, more and more are installing fields designed to maximize the investment, which means larger, contiguous fields including baseball and softball.

Over the years, A-Turf has seen an increase in demand for stand-alone synthetic grass fields for baseball and softball. We offer options to enable us to give our customers a field that best suits their specific needs.

ST: Are there differences in maintenance procedures for this new product vs. what you have been selling?

Dobmeier: No. A-Turf fields are environmentally friendly, using



hundreds of thousands of pounds of recycled, post-consumer rubber per square foot in its infill, saving millions of gallons of water and hundreds of pounds of chemicals per year.

ST: Is there anything new in terms of maintaining existing synthetic fields that turf managers need to know?

Dobmeier: While all A-Turf synthetic grass systems eliminate the need for cutting, watering, fertilizing and reseeding associated with natural grass, most contracts include a Greens Groomer, which



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“A synthetic grass system is a big, and often a high profile, investment. So, it’s critical to ask questions early on in the process, not only about the system and the type of components going into [it], but also about the company building and installing the field.”

attaches to the back of a utility vehicle and is used to periodically groom the fibers and infill. Most fields are groomed once or twice a month. It takes about two hours to groom the entire field. A Parker Sweeper, which is also pulled by the same type of vehicle, is sometimes purchased as well. It works much like a street cleaner and is used to remove trash and debris from the field.

ST: Do you believe using a disinfectant product is necessary for your synthetic surface? Why and what do you recommend.

Dobmeier: No. There is no need to use a disinfectant product on A-Turf synthetic grass fields.

ST: What criteria do you think are most important for officials to use in determining what synthetic turf systems to buy?

Dobmeier: A synthetic grass system is a big, and often a high profile, investment. So, it’s critical that decision-makers ask ques-

tions early on in the process, not only about the system and the type of components going into the system, but also about the company building and installing the field.

Consider the following:

- The company’s track record within the industry.
- Does the company have proven experience in building fields with a similar scope of work?
- Is the company financially sound?
- Type and length of warranty being offered.
- Quality and volume of material components being used.

Field building is a specialized construction, which means challenges will arise, flexibility will be required and communication is essential. Look for a company with a history of listening, presenting options and delivering results based upon your needs.

If you ask the right questions, chances are you will make the right decision.



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ST: I hear about installation problems for synthetic turf. What are the keys a buyer should focus on during installation to get a satisfactory result?

Dobmeier: The installation is crucial to the project and ultimately has a substantial impact on the long-term success of a field and satisfaction of the client.

Because an overwhelming majority of synthetic grass fields are installed on some variation of a crushed stone base, a sound base is essential to the long-term performance and aesthetics of the field. The three fundamental characteristics of a properly constructed crushed stone base are:

- Planarity – A base free of undulations (high and low spots) and other imperfections is required. It is imperative that the crushed stone base be graded to specification.
- Porosity – The proper mix of stone sizes and types is necessary to achieve adequate percolation to the drainage pipes.
- Compaction – Proper mix of stone size and types is also required to achieve the specified compaction level. Proper compaction prevents undesired post-installation crushed stone base settlement.

It is important to have a highly developed network of installers. Before settling on a company, ask about the quality and expertise of the installation crew. When speaking to references ask about the

quality of workmanship and the crew's ability to stay on schedule and handle challenges as they arise.


ST: What are A-Turf and/or the Synthetic Turf Council doing to address the issue of toxicity that some claim is associated with synthetic turf infill material?

Dobmeier: Safety is at the forefront of every A-Turf field built. As a member of the Synthetic Turf Council (STC), a big part of what A-Turf does is educate our clients and prospective clients about the benefits and safety of synthetic fields. The recent findings of the Consumer Product Safety Commission (CPSC), Environmental Protection Agency (EPA) and Centers for Disease Control (CDC) validate what we have long known to be true and what we continue to share with people who have questions. We have found that many initial concerns are quickly put to rest when addressed by honest and factual answers based on science.

We take every precaution to use only infill materials that are tested and proven. Education is the best tool for evaluating the safety of a synthetic turf system. As a partner to our clients, A-Turf is committed to answering questions and addressing concerns that may arise. Certainly, the Synthetic Turf Council is also another great resource. For more information on the safety of synthetic turf visit www.aturf.com or www.syntheticurf.org. ■

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Why drainage is important

By Jim Surrell

Recently, I received a phone call from a City Parks Director. The conversation went something like this; “We installed new sod with an irrigation system on three of our existing soccer fields last spring. Now we are looking for a solution to get our fields back in shape.” I asked, “Did you install any drainage on the fields?” After a brief pause, the answer was, “They were originally going to have drainage installed but it was cut from the budget. Now the fields are in rough shape because of the play during rain events.”

Just like this call, there are numerous headlines from all over the U.S. that have the same message: Improper drainage, or no drainage, costs money!

“Repairs to stadium’s drainage system may cost Cedar Hill ISD \$850,000” was a headline in the Dallas Morning News last May. “Standing water on the field has plagued the district’s \$6.2 million Longhorn Stadium since it opened in fall 1999. In 2006, the district spent \$480,000 to replace the drainage system and artificial turf.”

“Drainage problems at Grayslake North field” from the Daily Herald outside Chicago:

“Grayslake Central High School doesn’t have the same drainage problems because it has an artificial turf field. An inability to use Grayslake North’s field for five days after heavy rain... officials said.”

“For field crew, when it rains, it’s poor” from Albany, NY: “Rain, at once a blessing and bane for football fields, fell again this week. With water, water everywhere, the fields at the University at Albany turned lush green—and also just about flooded.”



Most professional turf installers understand the importance of proper drainage. Professional field turf installers agree that proper drainage is essential to field performance. If you have been in the industry for 3 months or 30 years, you understand that drainage is crucial to the quality and playability of athletic fields.

Goal is simple: remove the water

Whether you have an existing natural turf field or you are building a new one, the goal of any drainage system is to remove standing water and promote good growth of the turf. All fields have one thing in common; gravity! The old adage is true; "Water does not flow uphill." Taking advantage of gravity is the key to proper drainage design. A drainage system is nothing more than an "underground" stream that takes the water to a desired lower outlet.

Soil saturation is a common problem. For example, a field receives one inch of rainfall on one day and there is no standing water. The next day, the field receives a quarter inch of rainfall and there is standing water. The field has reached the saturation point. The ground can not accept any more water and the water will begin to stand or pond. This is why we commonly ask about the soil type when designing a drainage system. Sandy and loamy soils can accept and release water at a faster rate than clay soils. The soil type will have an affect on the drain design.



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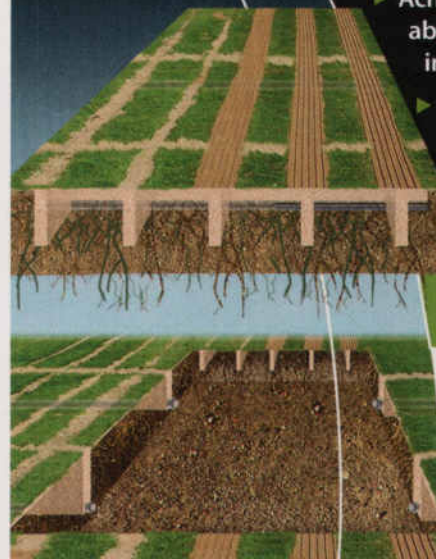
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IRRIGATION & DRAINAGE

We recently assisted in the corrected design of the New Orleans Zephyrs baseball field. It had 16,000 feet of an existing 4-inch pipe system that failed in just a few years. It would take days for the water to leave the field. The field had very little or no fall and an impervious liner was placed 9 inches below the playing surface.

The liner was installed to keep water from entering the field from the bottom as the field was only eight feet above sea level. The correction required the system to be designed for a 4-inch rainfall event.

Flow ratings are only a measure of how quickly water flows *from* the pipe. A more important question to ask is, “what is the *in-flow* rate?”

We used the Hydraway 2000, a 1 x 12-inch flat drain, installing 10,000 feet on 13-foot centers in a horizontal position 7 inches below the surface. The field now drains a 4-6-inch rainfall event in just a few short hours versus days. There were no cancellations of any games due to rain this past season. This includes hurricane rain events!

Flow rate vs. In-flow

Talk to any manufacturer of drainage systems and you will find that in general drainage products have similarities and differences. The products are tested to a minimum standard “flow rate” (ASTM 4716). However, these flow ratings are only a measure of how quickly water flows *from* the pipe. A more important question to ask is, “what is the *in-flow* rate?” How quickly can water enter into the pipe? That is what needs to be considered in every design.

In-flow rates relate to how fast the water can get into the pipe as compared to how much water it can discharge at a given slope. For example, a 4-inch round perforated pipe has a flow rate of approximately 26 gallons per min at a 0.10% slope. However, you must also consider that all of the “openings or perforations” on the surface of the pipe, only add up to approx 3% of the entire surface! This is why you need a wide trench to act as a reservoir to “hold” the water until the pipe can catch up.



Our design is a "flat" pipe design that has over 70% open inflow space vs. 3% for round pipe. This relates directly to how fast the water can get into the pipe and drain the field. No reservoir is needed to hold the water and feed the pipe.

When considering a drainage pipe you need to consider the following:

- How much of the pipe surface is open for water in-flow? You will find great differences among pipe designs. Some pipes only allow 3-10% in-flow due to the small openings.

- Are all four sides of the flat pipe available for water intake? This is an extremely important question as some products only allow water to enter on the top and bottom of their flat pipe. These products have a solid side that prevents water from entering. If you are laying the pipe in a horizontal position, can the water enter the sides or does it have to try and go under or build up volume to go over the top to enter?

- What are the compressive strengths? If you are building a synthetic turf field, you most likely will be driving your heavy tracked equipment over the drain lines with as little as 2 inches of cover. Can the flat pipe sustain the weight? Or is it damaged during installation before the field is opened?

Most designers across the United States do a very good job at designing drainage systems. Often we receive site plans and are asked to assist in the design of the drainage system. We are happy to provide this assistance, and we do it at no charge.

While assisting with the design, we find several things that need to be corrected. One of the most overlooked is the amount of drainage to be installed, or improper spacing of the drain lines. For any properly designed system to work, water must be able to enter the system. The closer the drain lines, the faster the field will drain.

Another common error is the position of the lines. Typically, drainage lines should be placed at 45 degree angles of the slope and directed to a collector pipe. As surface water follows the slope of the field, the water needs to cross several drain lines to get the water into the system.



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IRRIGATION & DRAINAGE



Importance of backfill for natural turf

Another commonly overlooked issue is the granular size of the backfill. We recommend coarse clean sand in a size of 0.2 mm to 0.5 mm as the backfill. This will serve two important functions; 1) it will keep the water flowing freely to the drainage system, and 2) it will act as a pre-filter for ground particulates before entering the system.

An average football field totaling

between 90,000 and 100,000 sq. ft. will receive more than 55,000 gallons of water for every 1 inch of rainfall. That does not include the water that is flowing from the track or the stands onto the field.

Synthetic field drainage

Synthetic fields use a stone base that allows the free flow of water from the field down into the drainage system. The pur-

pose is to rapidly remove the water from the sub-grade. Standing water on the sub-grade will create dips that are noticeable on the turf surface. Selecting a drainage system that will allow for rapid "in-flow" on the side of the pipe is critically important for synthetic fields. Without rapid "in-flow" the water must accumulate before it can enter the system.

Proper design requires some basic information:

- How soon do you want to play after a rain event?
- What is the average rain event in the area being considered?
- How much rain does a given area receive annually?
- What is the rain event frequency and intensity?
- What are the budget considerations?
- What is the proposed life of the field?
- Is a sprinkler system to be installed?
- Are there sufficient outlet locations?
- Is the collector system adequate?
- Does the collector need to be improved or upgraded?

There is no "cookie cutter" approach to drainage as all fields have unique characteristics and issues that must be considered. If your field is natural or synthetic, getting the water off the playing surface is the one common goal for the safety of the players and the longevity of your field. ■

Jim Surrell is the sales manager for Hydraway Drainage, St. Peters, MO, jsurrell@hydraway.net

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Christian Academy of Louisville wins Schools/Parks Football Field of the Year



Centurion Field at the Christian Academy of Louisville won the 2007 STMA Schools/Parks Football Field of the Year. Andy Davis, 2-year horticulture degree from Western Kentucky is turf and grounds manager for the Christian Academy of Louisville School System and his assistant is Chris Miller.

As many of you know, 2007 was a disaster in the transition zone for bermudagrass. Davis says he had only 20% coverage on the football field at the beginning of growing season. The field sits on a hill, unshaded by trees or buildings, and so is at the mercy of the weather.



FIELD OF THE YEAR



Davis decided to re-seed using Transcontinental, which he said established quickly, was a good color match for what he had, and the price fit his budget. Total renovation began June 5, with aeration, verticutting, and broadcast seed and a starter fertilizer added.

Campus construction projects limited Davis' use of water. "Our irrigation main line was broken 7 times through the construction," he says. Track renovations also hampered irrigation efforts. After another system breakdown, Davis had to water the football field by hand with a 1-inch hose three or four times a day! Sheesh!

Davis had enough pull to get the first game pushed back 2 weeks. The first game was played by the 5th and 6th graders August 18, just over 2 months from seeding. The sidelines were thin but a local university donated sideline covers to help out that situation.

SportsTurf: What kind of grass do you have and what are your keys for maintaining it so well?

Davis: Our field is seeded with Transcontinental bermudagrass. After an extreme case of winterkill, I decided to renovate with a hardier variety that was still reasonably priced for our budget. The thing I liked about Transcontinental was the quick establishment and its cold tolerance. This was very important for our site.

Our field sits on an elevated area and receives a great deal of wind year round. The site receives little blockage from trees or buildings so having a cultivar that could survive the play as well as the elements was very important. During the growing season we try to push the field as much as possible. We have a granular and bi-weekly liquid fertilization plan in place and we are mowing almost daily. Soil cultivation is done as often as possible during the summer months.

Once the season starts in late August we don't have a lot of time left between games for aggressive maintenance practices. We have

3 high school teams, 2 middle school teams and 1 elementary school team that use our field for over 30 games from late August to the first of November.

Also scheduled are weekly walk-throughs for our varsity team and the occasional band practice. The field has to be in top shape at the beginning of the season to make it through the schedule. We try to push our program hard until about mid-September and then raise the cutting height and reduce fertilization when cold weather starts to enter the forecast. Thus far, we've had great luck with our program. Even with the winterkill this past year and having to renovate before the season started we were able to provide a good stand of turf throughout the season. I accredit that to having a good maintenance plan in place and relying on the help and input from area turf managers. I especially want to thank my assistant Chris Miller for his dedication and long hours to make this award possible.

ST: What's your logo painting process? What have you found that works best, in either products or techniques or both?

Davis: We will paint the field the week before the first game and repeat the process weekly throughout the season. The logo and end-zones will typically only be painted during the week of varsity home games. We have a stencil for our center logo and it is very easy to lay out and get on the field. The endzones, however, are laid out by hand. First, the design is drawn out on paper and then transferred to the field. We have begun using a higher quality of turf paint to get longer lasting color on our lines and logos.

Another thing that has worked well for us as far as maintaining the paint on the field is the use of growth regulators in our turf management program. When we are mowing 4-5 times per week and sometimes having 3-4 games per week, the lines can become faint. With a small crew and limited budget, it's hard from a cost and labor standpoint to paint more than once a week. The money