



>> A CONVERTIBLE or “roll-up” turf system allows facilities to install a multi-purpose field



>> Above: BAYLOR UNIVERSITY'S synthetic turf football field

>> Below: AN OPTIONAL ELASTIC LAYER (e-layer) provides additional shock absorption, reduces the cost to replace a field, and drastically improves your turf's lifespan.



From dirt to turf: 7 steps for successful construction of a synthetic field

Editor's note: This article was written by Ross Clurman of Hellas Sports Construction, Inc., Austin, TX.

BUILDING AN ARTIFICIAL TURF FIELD is no small task and often involves months of budgeting, planning, meetings, and sometimes school board or community votes. Whether you are replacing an existing grass field, or building a new one altogether, understanding the process of planning and constructing a synthetic turf field will ensure its success.

There are three main phases of building a synthetic field: pre-construction, construction, and post-construction. Within each phase, there are milestones that, as a decision maker, you need to be aware of and prepared to tackle.

PHASE 1: PRE-CONSTRUCTION

Before you break ground on the construction of your field, you should have a handle on the following:

- Reason(s)
- Location
- Conditions
- Budget
- Turf Selection
- Deadline(s)
- Requirements

Reason(s)—Why are you installing a synthetic turf field? Knowing why will help you determine other factors, such as location, budget, timeline and requirements. In addition, you will need to convey these rea-

sons when the support of a third party (e.g. community, school board, owners) is required. **Define your reasons.**

Location—Where will the new synthetic field be located? If you're replacing an existing grass or synthetic field with new turf, you probably already know the location, but if it is a new field construction, you may not have a site selected. Do that. Upon determining the site, regardless of a new field or replacement field, you will need to obtain a soil survey. **Determine the location.**

Conditions—What are the current conditions of the location? Any construction project starts with a solid base. In the case of an artificial turf field, your base is the soil. A geotechnical soils report is not very expensive, and knowing the soil composition is very important when constructing a field, as this may vary the cost by upwards of \$100,000. I recommend you use a third-party geotechnical company. **Survey the conditions.**

Budget—How much do you have to spend? Where is the money coming from? When approaching your project, it is

important to know how much you have to spend. As a general rule, a new synthetic turf field can run anywhere from \$850,000-\$1,000,000. This is also true for replacing an existing grass field with artificial turf. A typical drop-in field, (replacing an existing synthetic turf field), runs between \$450,000-\$550,000.

These figures do not include anything other than the construction of the new field. Your project's cost may vary when you factor in architects, engineers, planners, etc.

Another piece that will increase the initial cost, but pay for itself overtime is a pad, or elastic layer. These "e-layers" are designed to improve the shock absorption and makes replacing your field (in 8-10 years) much less expensive.

The second aspect of your budget: knowing where the money will come from. If you have the money in-hand, great; otherwise, consider ways to offset the cost.

- Build a multipurpose field (soccer, football, lacrosse, field hockey).
- Sharing the financial burden with other schools, or teams.
- Fundraising by selling advertising space on the field.
- Donation drives from the community.

Fundraising, building a multipurpose field, donations drives and/or sharing the field with another institution can make a huge impact on the cost. Consider a convertible or "roll-up" field, so it can be changed out for different teams or events. **Figure out the budget.**

Turf Selection—What turf to use and why? The technology and techniques of manufacturing synthetic turf have evolved a lot over

the years, and so have the standards for what makes turf safe, playable, and durable. Not all synthetic turfs are created equal and selecting the right turf is a big part of constructing the perfect field.

In addition, your synthetic turf is just one component in an athletic field. We like to think of them as a complete system comprised of a compacted soil base, intelligent drainage network, precisely layered gravel, optional elastic layer (e-layer), on which the turf and infill are laid.

Please note the specifications of our Matrix Turf. I won't go into the specific properties and testing methods, but in general here are a few things to consider when selecting the appropriate turf:

What activities will take place on the field? Certain synthetic turf systems are optimized for different sports. For instance, we have artificial turfs designed for American football, soccer, and two types for baseball—one for the field, and another specifically for the running paths.

How often will the field be used? The more you use something, the faster it will wear out, so it makes sense to plan accordingly. If your turf field will be used 24/7, consider paying the premium for a higher quality turf system.

Who will be using the field? High school sports are more demanding than elementary and middle school sports and collegiate sports are more demanding than high school sports. Consider the level of competition taking place on your turf.

Where will the field be located? Is the field an indoor practice field, or an outdoor multipurpose field? Will you need a roll-up



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turf system to remove or change the field for different events? Location and climate are two big factors that affect the longevity of a field.

The significant thing to understand here is the importance of turf quality, especially when combined with the other components involved in the field construction. **Select your turf.**

Deadlines—When can construction start and when does the field need to be completed? The amount of time required to build a synthetic field is fairly straightforward. Your start and completion dates are flexible. Knowing the estimated project duration can help you establish these two important dates.

For a drop-in field, figure no less than 7-10 weeks from breaking ground to completion. For a new field, and replacing grass with synthetic turf, there are other factors that may affect the critical path. *The critical path is a timeline for construction projects that outlines specific events that must occur in a set order. If any of the events on the critical path are shifted, they affect the subsequent events.*

Your start date depends on when and how often the field is used. If it's a new field that's irrelevant, because it's clearly not



>> **REGULAR USE** of a maintenance vehicle improves lifespan and maintains a safe surface.

being used; but, taking into account the timelines I presented, you can probably estimate a completion date.

One of the things we pride ourselves on is being on time, so once you have these dates establish, hold your construction company accountable. **Establish your deadlines.**

Requirements—

How will the field be used, by whom, and how often? Is the field going to be a practice field, or strictly for game use? Will others be using the field outside of your organization? Will events take place during the day, or in the evening and at night?

The answers to these questions can help you plan the type of turf, select accessories (lighting, goals, equipment), and even establish how the field will be paid for. (As I mentioned, the cost may sometimes be divided up between multiple teams or institutions.)

Outline the requirements.

Specs of Hellas Construction's Matrix Turf

Property (ATSM Std.)	Specification
Pile Weight (D418/D5848)	42 - 46 oz./Sq. Yd.
Primary/Secondary Backing Weight (D5848)	7.7 oz./Sq. Yd.
Secondary Coating Weight (D5848)	20 - 22 oz./Sq. Yd.
Total Weight (D5848)	69.9 - 75.9 oz./Sq. Yd.
Yarn Denier (D1907)	12,400
Pile Height Finished (D418/D5848)	2 ¼" - 2 ½"
Tufting Gauge (D5793)	1/2"
Primary Backing (D5848)	D12 or Tri-layer woven Polypropylene
Secondary Coating (D5848)	Polyurethane
Tuft Bind without Infill (D1335)	10 lbs. +/-
Grab Tear (width) (D1682/D5034)	250.1 - 273.1 lbs. Force
Grab Tear (length) (D1682/D5034)	197.6 - 236.1 lbs. Force
Carpet Permeability (D4991)	>40 inches/hour
Flammability (Pill Burn) (D2859)	Pass
G-max (Impact Attenuation) (F355)	<130 at installation <190 over warranty life
Realfill™ Infill (E-11)	5 - 6 lbs +/- per square foot
Fabric Width	15'
Perforation	3/16" Holes 4" X 4"
Yarn	250 microns & 150 microns

- All characteristics listed above nominal +/- 5%
- Matrix® turf incorporates life like individual blades of grass, tufted into the strongest and most dimensionally stable backing system available with a polyurethane pre-coat for the ultimate in tuft-bind.
- Matrix is filled with a pea gravel (2-3 lbs) and cuboidal rubber infill (2.5-3.0 lbs) - Realfill™.
- Infill will be a minimum of 75% of synthetic turf pile height.
- The monofilament fibers curl down to cover and trap the rubber granules preventing the system from expelling the infill upon impact.
- Matrix is a fully UV stabilized system ideal for outdoor use.

PHASE 2: Construction

The second main phase is the actual construction of your synthetic turf field. This is where the majority of the money and time will be spent, so it makes that it is also the most important phase. The milestone in phase two is vendor selection.

Vendor Selection—Who will construct the field and install the turf? Selecting a construction company is of equal importance to selecting the turf, because the construction of the field affects the safety, performance, and longevity of the field. Poorly constructed athletic field turf may fail within the warranty period leading to increased maintenance costs and sometimes may require a full field replacement.

Some criteria for selecting and evaluating a sports construction company:

- Safety Record
- Expertise
- Reputation
- Project Management

Notice that "price" is not included within the list. Price, as a criterion for evaluation, is rarely an accurate gauge when all other factors are considered. For instance, what is the value of having your field completed on time?

Safety Record—Large construction projects require the use of heavy machinery. Sometimes these machines can cause expensive accidents, and even lead to injury and death. The last thing you want is negative PR, so make sure you select a construction company with an impressive safety record.

Expertise—This is a combination of how long the company has been manufacturing artificial turf and installing athletic fields, and

the actual team that will be performing the construction work. The company may be 50 years old, but the team doing the work is composed of the cheapest labor they could find to contract the work to.

Reputation—Don't just take the word of the salesperson, call several references, and don't solely rely on the recommendation of the few references they provide. Ask to see the entire list of projects the construction/manufacturing company has worked with and call as many as you have time for.

Project Management—This is often overlooked, but affects the entire project from start to finish. It is not very common in the synthetic turf and sports construction industry, but finding a company that manages the entire project from a single source is extremely important. Working with one vendor, rather than several, can save you time and money.

During the construction of your field, you should maintain a constant stream of communication with the project manager and your salesperson. Expect to receive weekly (if not daily) progress reports and make sure you are aware of any issues that may arise during construction.

Remember your established deadlines and hold your construction company accountable.

Consider a co-op—Many public institutions have to take the project to bid. But, a cooperative purchasing unit, or co-op, eliminates that need and has other benefits, such as:

- Assisting with contract creation

- Reducing the time from contract to construction
- Performing the due diligence to ensure quality
- Reducing the overall cost of the project

There are several regional and national programs that do the leg-work for you, making the vendor selection process much easier, and reducing your cost because prices may have been pre-negotiated with the co-ops.

PHASE 3: Post-construction

The number one misconception about synthetic fields is that they do not require maintenance. Just like real grass fields, artificial fields need to be cared for to maintain optimal safety and performance.

The company responsible for constructing your field should provide some type of post-construction orientation for your facilities department, to educate them (and you) on what needs to be done to clean and care for your synthetic field.

In addition to internal maintenance, it is recommended that your artificial turf field be checked for safety before each season.

Constructing a synthetic turf field is a long, layered process, much like the field itself. There are many layers (components) and each one affects the others. ■

Ross Clurman, Hellas Sports Construction, can be reached at (512) 250-2910 or rclurman@hellasconstruction.com.

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Overseeing synthetic turf installations

THERE'S A NEW FIELD going in. And you've just been informed you're responsible for supervision, oversight and all the rest of the management.

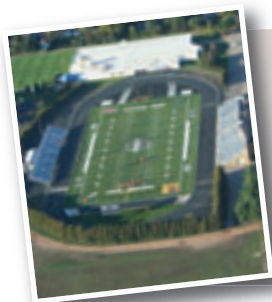
For those whose experience pertains mainly to field management, that can be a daunting task. Sure, you know how a field is built—base, sub-base, drainage, surface, infill and so forth—and how it's maintained, but how can that really help you work with the pros who will be doing the install?

Easy, say those in the industry: bring all your knowledge to the table, and be ready to share it.

"Be available," says Jeff Emanuel of Nemaha Landscape Construction, Inc. in Lincoln, NE. "Communication and logistics beforehand makes everything go smoothly when the job gets started. That should be the number-one priority. The field manager is a great resource to catch things before and at the time of install to make sure final build-out meets the field manager's and the owner's need."

Coming into the project, you already have an advantage, whether or not you're aware of it. You're on site every day, or just about every day. You know things about the use of the field, the problems it might have experienced in the past, and lots of other information that are invisible to the contractor, who is just looking at the surface. So here are some pieces of the puzzle you can put down on paper:

- The field itself: List everything you know about when the field was built, who did the construction originally, what surface it is, and any changes that have been made to it over the years. List its regular maintenance program and types of equipment used.



Both sides need to keep an eye on the construction documents, and also on the field itself. Sometimes, things look good on paper, but don't work in real life.

>> Photo credit: Rettler Corporation, Stevens Point, WI

- Problems: Does the field (or the area around it) have any problems, such as drainage issues? Make sure you note those.
- Field use: What types of sports is the field hosting, how often and at what levels? Any other uses (graduations, festivals, marching band practice, etc.) should also be noted.
- Weather: According to Norris Legue of Synthetic Surfaces, Inc. in Scotch Plains, NJ the weather can impact a new field greatly, and anyone charged with supervising installation should have a good grasp on it: "No two outdoor installations are the same," says Legue. "Hot, cold, damp, dry, wind, passing clouds and rain are all factors that quickly get people into trouble. Also, outdoor installations under variable conditions are a different world than indoor installation under stable environmental conditions."

Something the field manager can do to keep the lines of communication open, says Emanuel, is to "attend regularly scheduled meetings to stay up to date and in the loop. Be approachable and get to know the install foreman. A good foreman will respect a reciprocal relationship."

Both sides need to keep an eye on the construction documents, and also on the field itself. Sometimes, things look good on paper, but don't work in real life. And in many cases, the field manager is the person who will know immediately whether something will or will not be effective.

"Be honest," says Emanuel. "If the field manager doesn't like something, that needs to be brought to the builder's attention so they can discuss and remedy issues before the task or project is past the point of no return."

Many field managers, because they're skilled in maintenance, want to chip in and help with the construction as well. Emanuel cautions against that.



>> **Photo credit:** Warner Larson, Inc., Boston, MA

"Don't commit to performing work that is part of the builder's scope of work; promises can be made where they shouldn't by field managers wanting to help out and expedite the process. A good relationship is key, but actual physical help or directing the work isn't always a good thing. Input is one thing; however the builder's foreman shouldn't modify the scope of work without all project stakeholders agreeing to modifications to the original scope of work."

As with all projects, there are best practices. Emanuel says his include the following:

Do:

- Be proactive and think outside the box.
- Stay in the loop on decisions that affect the field manager's ability to manage/maintain the field when finished.

Don't:

- Make promises/changes you as the field manager can't keep.
- Approve any changes before the field designer/architect (if applicable) or owner approve them.

The installation of a new turf field may be one of the most important projects for your facility. And to make it pay off, you need to keep open the lines of communication. Communication, after all, is like currency—it works best when it flows both ways, in equal measures. ■

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.sports-builders.org.

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Getting USC ready for some football

When it comes to re-sodding our practice field for the football team, there is a lot of planning that goes into the project before the first piece of sod goes in. We must first select the variety of grass that will go in as well as our best window to install it. We were going with the 419 but when it was time to install the sod, we ended up going with the TifSport variety which the sod farm said was in better shape due to the weather we were having. The football team's first game happened to be in Hawaii that year, giving us an extra day of grow in period before the team would get on it again after their first game.

The center was pretty beat up after 29 practices, seven walkthroughs and one practice game in 29 days. We needed roughly around 30,000 square feet to cover between the hash marks and another 5,000 square feet to re-sod miscellaneous worn spots from practice drills.

With the re-sodding project itself starting on the first of September, we started preparing the field for the compaction that comes along with machinery used to remove the existing turf to be removed, as well as the machinery used to install the new sod. We sliced the field in two directions on August 27 because it is a less evasive form of aerating as the football team was still using the field. The team's final walkthrough be-

fore traveling was on the 31st, as soon as their walkthrough was over, we got on the field and hollow tine aerated with quarter inch tines all of the turf that was not going to be removed.

The center was pretty beat up after 29 practices, seven walkthroughs and one practice game in 29 days.

The next day, the first of September, the contractors arrived to remove the turf to be re-sodded. We laid down the plywood where the machinery would be traveling across the turf that would not be replaced. After that, we pretty much stayed out of the way and let the contractors do their work, though we try to have one person who stays with them to help in any way and to also keep an eye on things! The sod was removed in one day and would be ready for the 1-inch thick cut sod the next.

By 6 am the next day, we were out there hollow tine aerating the bare soil where the sod had been removed. That completed aerating the entire field before we went out and broadcasted out Calcium Silica fertilizer over the entire field, the existing turf as well as the soil to be re-sodded. Once the fertilizer was out, the sod started going in with the contractors laying the sod as we helped remove the turf trimmings that go along with laying in the sod to make it fit snug. The rest of us loaded up our vehicles with sand and shovels and began filling in the seams.

Once we started advancing with filling in the seams, two of our guys broke off and started to sweep the sand into the seams. We had 60 yards of sand to fill our seams and topdress with. Once the seams were filled and broomed in, we topdressed the entire field with the remaining sand until it was all gone. We had one person dragging in the sand behind our spreader and another person rolling the sod behind the person dragging. We started to water in

the sod behind the person rolling the field until the entire field was completed.

The next day, September 3, we came in and painted the football field to be ready for the practice on Monday. When the paint dried, with the nice weather we had and the quick dry paint we use, it only took about 20 minutes before I was able to get on it and apply Rx Gold liquid fertilizer over it to help with the root growth. The field was rolled the next 2 days over the weekend to tighten up the sod. I came back in on Monday morning and applied Rx Supreme liquid fertilizer over it. The team would be on the field roughly 7 hours after I sprayed it, the reason I was able to fertilize it on a practice day was that this fertilizer does not require to be watered in, otherwise we wait till after practice or a day off to fertilize.

The team practiced that Monday and was happy with the job we did. We postponed our monthly fertilization that we normally apply around the first of every month, so I came in that Friday and applied it, completing our plan of the sod project. The sod is still on the field, a little beat up, but thanks to a good installation and fertilization program, it made it to the end of the season. ■

Cesar Carbajal is team leader for the University of Southern California. This article originally appeared in the December 2010 newsletter of the Greater Los Angeles Basin Chapter of STMA.

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Editor's note: This article was supplied by Creative Services, Encinitas, CA

A MULTI-YEAR EXPANSION PROJECT at Georgia's Kennesaw State University has culminated in one of the largest synthetic turf complexes in the US with six fields designed for sports and recreation activities. Located just north of Atlanta, KSU is the third largest university in Georgia and serves more than 24,000 students.

The new KSU Sports and Recreation Park spans 88 acres and boasts a showcase of facilities that meet the needs of an active student population. On any day of the week, visitors can see hundreds of students at the new KSU center competing in intramural and club sports; participating in fraternity and sorority workouts; marching in ROTC drills; planning concerts and more.

The NCAA-qualified Park also plays host to NCAA soccer tournaments and NCAA track meets.

Funded by a student fee initiative, the KSU Sports and Recreation Park interweaves modern synthetic playing surfaces with traditional natural turf fields for a harmony of venues.

The third and final phase of the 5-year project opened in April. Along with the three natural turf fields, the KSU Park offers five synthetic full-sized fields and one synthetic intramural field. The artificial turf fields are booked with men's and women's rugby, soccer and lacrosse, along with softball, baseball, football, flag football, running, ultimate KSU frisbee, kickball and more.

On any day of the week, visitors can see hundreds of students at the new KSU center competing in intramural and club sports;

Built by Choate Construction Company, the Park also features a new 8,300-seat stadium for sporting events and open air con-

certs; a 16,000-square-foot indoor training facility; a 9,000-square-foot center for training and concessions; an NCAA track; sand volleyball courts; warm-up training areas; a nearly 1 mile walking/jogging trail, and a 9-acre lake which acts as a reservoir.

Before the park's construction, students only had access to a 1.7 acre site for all intramural and club sports. Varsity teams had separate facilities, but intramurals and clubs typically had to practice miles away from campus, if they could find a field.

>> Left: KENNESAW STATE UNIVERSITY is located just north of Atlanta and with 24,000 students is the third largest college in Georgia. **>> Middle: WITH SIX NEW SYNTHETIC TURF FIELDS**, rugby players and other intramural and club sports enthusiasts can schedule games and tournaments year-round, even during wet weather. **>> Right: KSU SPORTS AND REC PARK FIELDS** are constructed with XP Pro Fiber, a synthetic turf material designed for high-use, multi-purpose sports fields.



>> UNDERHILL LONG THROW SPRINKLERS cover up to 174 feet in distance and are installed around the perimeter of the synthetic fields.

A unique funding model was devised at KSU to pay for the land acquisition and construction. The Student Fee Committee and the Georgia State Board of Regents approved student financing of the project, which was underwritten by the KSU Foundation. Students are assessed \$75 per semester towards payment of the land acquisition, construction and park development.

“The college administration agreed with the students that important life lessons take place outside the classroom on the sports field,” says Laura St. Onge, associate director of sports and recreation at the university.

St. Onge has been involved in the project since its inception and oversees day-to-day operations, including site improvements and maintenance. A 20-year veteran of the landscape industry, she has specialized in sports fields.

NEW OPPORTUNITIES WITH SYNTHETIC TURF

Synthetic turf was selected for a range of reasons, according to St. Onge. Along with the savings from lower maintenance and ir-

>> Below left: THE NEW KSU SPORTS AND RECREATION PARK encompasses 88 acres and, along with the new fields, includes a stadium, indoor training facility, NCAA track, sand volleyball courts and nearly one-mile hiking/jogging trail. **>> Below right: SPRINKLERS ARE RUN** before sporting events, and often at halftime, to keep the playing surfaces cool and clean. Surface temperatures can reach 150-180 degrees on hot summer days. Water can bring the field temperature down 50-60 degrees.



>> LAURA ST. ONGE, associate director of sports and recreation at KSU, oversees day-to-day operations, including site improvements and maintenance.

rigation costs, the artificial fields opened new opportunities for the campus.

“We now have year-round playability on consistent surfaces, which can enhance training and performance,” she said.

“Games can be scheduled regardless of weather conditions because the drainage system keeps the fields playable during or after a rainfall. Scheduling is seamless and the fields are virtually ‘cancellation free,’” she said.

With minimal maintenance and irrigation scheduling, the fields are available day and night for multiple extracurricular activities. And the school has the option to lease the fields to other athletic groups and associations, providing revenue during idle times.

Southwest Greens International (a division of Shaw Industries) manufactured and installed all six synthetic turf fields with XP Pro Fiber, a material designed for high-use, multi-purpose sports fields and which provides a realistic playing surface.

“The yarn used in the fiber is specifically for sports fields and



>> Above: UNDERHILL TOTAL SOLUTIONS KITS were installed at KSU. The TS Kits are new all-in-one sprinkler assembly packages that include sprinkler hardware and detailed AutoCad illustrations of the site-specific irrigation system.

among the most durable available,” says Barry Johnson, construction superintendent for Southwest Greens.

“XP Pro maintains 85% of its fibril integrity over a 10,000-cycle test, which mimics 10 years of use. This evaluation was based on the industry-standard LISPORT Test*,” he said.

INSTALLING COOLING CANNONS

One of the challenges for Associate Director St. Onge was how to keep the fields cool and comfortable during hot Georgia summers, and how to clean them year-round.

“Georgia summers can warm up to 100 degrees. That means a surface temperature of 120 to 180 degrees and that sort of heat goes right up the cleats.

“I was familiar with Underhill’s Mirage Series of long-throw sprinklers. They cover up a lot of turf with a high volume of water that effectively cools and cleans the entire surface. We installed four to six heads per field, depending on site dimensions.

“My experience is that synthetic turf and cooling systems go hand-in-hand. You can’t build a synthetic turf sports field in Georgia without planning for a cooling system. Our first concern is player safety and cooling the fields helps ensure that.”

M-174s sprinklers from Underhill International feature a long throw (up to 174 feet) so they can be placed outside the area of play for greater safety. “We considered a range of options, but the durability of the M-174s met our criteria for long-term performance,” she said.

St. Onge reports that the “cooling cannons” are run before games, and often at halftimes, when the field temperatures exceed 150 degrees. Each head covers a 180-degree arc and runs for two rotations, lasting 45 to 60 seconds each and delivering up to 328 gpm, depending on nozzle and pressure.

“By cooling the fields, we can bring the surface temperature down 50-60 degrees and minimize heat exhaustion and athlete discomfort.”

In Phase III, KSU went further and installed 10 new all-in-one sprinkler assembly packages that include sprinkler hardware and detailed AutoCad illustrations of the site-specific irrigation system. The Total Solutions Kits from Underhill include M-174s long-throw sprinkler; laterals with isolation valve configuration (3-, 4- or 6 inches deep); 3-inch electric sleeve valve; ductile iron swing joints with all required fittings and assemblies; plus a stainless steel Turf Box enclosure, which allows access to the sprinkler without disturbing the turf.

“Long throw sprinklers provide value to any synthetic turf installation,” said Southwest Greens Barry Johnson.

“Cooling and cleaning are critical elements to maintaining a long-lasting fiber field.”

St. Onge reports that the KSU facilities have become a magnet for big league events. The 2011 NCAA Division I Women’s Soccer College Cup was recently played at the new KSU stadium in December 2011.

“Quality academics and a vibrant campus life are part of any top university,” says Kennesaw President Daniel S. Papp. “The KSU Sports and Recreation Park is an important addition to the

St. Onge reports that the KSU facilities have become a magnet for big league events. The 2011 NCAA Division I Women’s Soccer College Cup was recently played at the new KSU stadium in December 2011.

university’s infrastructure. Kennesaw State is well on its way to competing at the national level.”

* The LISPORT test is a method used to get an indication of the durability of turf blades in a specific turf construction. The test gives a visual indication on how a synthetic turf system will age in time as a result of use. The durability of the turf carpet not only depends on use, but on the combination of installation, weathering, and maintenance. The results of LISPORT testing are very useful in comparing different types of components or tuft settings and provide an indication of the durability of the synthetic turf system. In the test two studded cylinders are rolled over a test piece of turf for a pre-set number of cycles. The number of cycles simulates a period of play on the pitch, as the studded roller simulates a cleat. ■

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