

How colder weather affects synthetic turf installs and repairs

Editor's note: We asked some experts these questions: Is there a temperature threshold below which it is considered "too cold" to install or repair synthetic turf? How can cold weather affect installation time lines? What exactly is affected—building the base, for example, or using the adhesive? Is sewing seams recommended in cold weather vs. using adhesives? Is sewing that much of a slower process?

Steve Smetana, a former professional baseball player and current high school baseball coach in northern Ohio, is a partner with former STMA president David Frey in a venture called Pro Turf Clean.

He has been installing artificial turf surfaces since 2004 and now is maintaining synthetic fields as well as installing them. "For installation purposes I have always gone by trying to install turf in above-50 degree temperatures," he says. "I guess it might be possible to install when it's colder but you run the risk when the temperatures go back up into the 80's and 90's that the material will expand and create issues for you."

"The cold weather definitely will affect timelines with installations. Up here in the northern states the most hectic months are end of May until the end of August. The schedules of the colleges and high schools greatly dictate the installation timeline," Smetana says.

"There are pros and cons to each sewing and using adhesives when bonding seams. Sewing is less expensive but a lot more labor intensive than gluing," he says. "For example, sewing will require 10-12 laborers and multiple days; sewing is a good way to seam turf but to glue the belly of a field can take as few as four laborers and one day to complete."

I have seen needles get brittle and break in cold temperatures. . . There is nothing that slows a job down like a broken sewing machine.

— Patrick Maguire

"Another reason why some people do not sew is because a turf with a real thick backing would be difficult to sew. Secondly, when you sew a seam it has a prominent lump on that edge that can be buried in the aggregate underlayment. If you use a drainage mat for your drainage then you can't sew," Smetana says.

Patrick Maguire is principal for the sports division of Stantec Consulting, which specializes in civil engineering services for outdoor athletic facilities. "We typically recommend that no work take place unless the temperature is 40 and rising," he says. "Clearly that is a luxury in some climates and at certain times of the year. When it is colder we ask that the installers make provisions to deal with the temperatures. For example it is never a good idea to roll out a frozen carpet. The secondary backing can crack, which can be a big problem."

"Cold weather—like any inclement weather—can affect installation timelines because it can cause delays in getting started in the morning due to frost or ice and in waiting for materials to reach workable temperatures," says Maguire. "Additionally human beings generally are not as efficient in cold weather, particularly for things like

Wisdom from The Guru of Glue

THE SYNTHETIC TURF BUSINESS has expanded to a point where there is not enough time to limit installations to just warm-mild weather. More time is needed which translates into installations and repairs in the cool and/or cold weather of early spring, late fall and throughout the winter. However, there is some cold weather factors that should be kept in mind regardless of the methods and/or products used.

Almost everything slows down when it gets cold. Rain water evaporates slower in Winter than in the Summer; automobile batteries get weaker, their oil gets thicker and they perform better after they "warm up"; chemical reactions, such as adhesive curing, either slows down or stops, depending on the adhesive; turf get stiffer and harder to handle; sewing get tougher, etc.

While the laws of physics regarding cold vs. hot can't be changed there are some products and methods that can not be used when cold; others that are extremely slow and difficult; and others which although slower are useful for cold weather installations and/or repairs.

REGARDING ADHESIVES: There are some that freeze, crystallize or otherwise solidify in their container when cold. Hot melts adhesives are designed to go from solid to liquid when heated but they often prematurely re-solidify when applied to a cold sub-surface; paste adhesive become almost impossible to spread when cold; others do not cure when the temperature falls below otherwise workable temperatures. However, there also is a group of one-part urethane adhesives in which the manufacturer says can be used at any low temperature in which the installer can work.

REGARDING SEWING: Sewing machines become sluggish, plus the turf and sewing thread gets stiffer, which makes sewing much more difficult.

REGARDING INSTALLATION AND REPAIR: They proceed slower when cold than when hot because, installers can not work as efficiently; cold is also often accompanied by wind; the turf gets stiffer and harder to handle plus the options for sewing and/or adhesives selection are greatly reduced.

Cold weather installations and repairs are slower than when warm, but in cold weather it's much better and more profitable to work than the alternative of not starting or stopping an installation while waiting until it gets warm. However, investigate first and then be selective on the products and methods to use in cold weather. ■

Norris Legue, aka The Guru of Glue®, is president of Synthetic Surfaces Inc.

Below: Adhesive being sprayed to bond number inserts during a cold weather turf installation. **Right:** Adhesive coated seaming tape for bonding a loose-laid seam.



seaming which requires a certain skill and dexterity that can be compromised by lower temperatures.

"As it relates to adhesives versus sewing, each have their own issues with temperature extremes. Clearly the chemistry of a particular adhesive can be affected by colder temperatures and or rapid swings in temperature from cold to warm or warm to cold," he says. "These can affect cure time and the ultimate long-term strength of the bond. It is critical that the right glue be used for the particular situation.

"Sewing is not immune however. I have seen needles get brittle and break in cold temperatures. This could be attributable to the metal getting cold, or the carpet materials getting harder as the temperature drops. There is nothing that slows a job down like a broken sewing machine.

"The answer to what is recommended really comes down to the selected system and the particular installer. Different carpet and backing systems are meant to work with chemical bonds and certain systems are meant to have mechanical bonds. In a perfect world the answer is really a combi-

nation of the two. Given the choice I really like a butt-sewn seam with a heat activated or other adhesive and cordura fabric," says Maguire.

Darren Gill is vice president of global marketing for FieldTurf. He says, "FieldTurf operates in over 40 countries around the world with some of the harshest climates. We have taken every possible step to ensure that we can install our product, no matter the temperature. Specifically, FieldTurf utilizes "hot melt" adhesion and bonding technology; the adhesive is heated and applied at 300-350 degrees F . . . virtually there is no limit to ambient temperatures for successful adhesion.

Regarding how cold weather can affect installation time lines, Gill says, "Other than the human resource factor, requiring additional personal protection equipment (gloves, coats, foul weather gear) there are no limits.

"From a base construction stand point, freezing is the threshold for concrete placement, grading of earthen materials and aggregate moisture content for long term

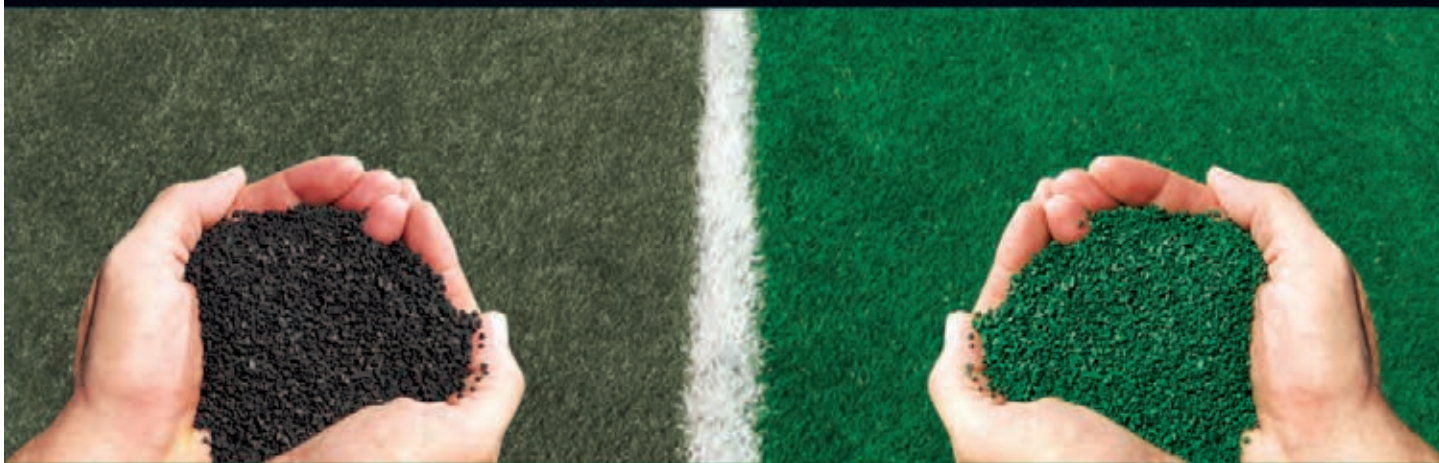
performance," he says. "From an adhesive stand point, the FieldTurf fully sewn and hot melt adhesive technology has no limits other than precipitation.

"Many other turf companies use 'cold applied' adhesive; these products are highly susceptible to failure due to ambient temperatures, humidity, moisture, freeze/ thaw and other variables from nature," Gill says. "It is not advisable to use 'cold adhesives' in ambient temperatures less than 45 degrees Fahrenheit, high humidity or wet conditions.

"Sewing seams in cold weather [below freezing] can be challenging as the sew needles break more often; a properly sewn seam will virtually never release in any weather conditions. When applied in cold/wet weather cold adhesives have had issues with bonding and are not recommended for use below 45 degrees," Gill says. "We believe that fields that are not sewn and are glued in their entirety have more than 1 mile or 5,280 feet of seams, the long term performance and risk is certainly compromised." ■

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Vanini hikes unmarked career trail



How did I get my business going? This was the question posed to me by the editor of this magazine.

Truth be known, the idea of New Dimensions Turf (NDT) actually started in graduate school at Michigan State University. I was brainstorming about the next step in my life after completion of my PhD program, and I was thinking of becoming a professor or starting a consulting business. If I started a business, “What would I name it?” For me, the beauty of research is about “possibility”; it can take you in directions you never considered. In this case, I had to move into a new possibility or “new dimension” of thinking in order to solve the PhD question at hand, “How do you get a sports field ready in 70 days?” So why not think about problem solving or new possibilities in the business world? This concept is more and more abundant to me as a consultant, an educator and a business person, and it starts with one conversation after another with whomever.

It’s been my experience that help is always there if you ask for it. When I started my business in July 2009, the first thing I realized was life was not going to revolve around an academic calendar. Life was going to change. I was starting a business, and was stumped on where to begin. So I started networking and asking questions about this transition into setting up a turfgrass research and consulting business in Buffalo. I discovered that a Small Business Development Center was just down the road from me, and here was the best part, it was free.

My contact, Marilyn Roach, aided me on the path of thinking of my professional life from a business point of view. At our first meeting, Marilyn asked me questions that were not

difficult and yet I had no answers, such as “What is your cash flow?” and “Do you have a marketing strategy?” I had nothing. Even though these items were in the back of my mind, they were quickly brought to the front of my mind. Using my experience from playing sports or attending graduate school, I had to go to work. And more importantly, be willing to do things differently. I had to start viewing my world differently. I had to think in a New Dimension.

One example of this came early on. When I first started taking on the business full-time, I was working on a business deal that ultimately fell apart. Needless to say, I was disappointed. Here I am trying to get my business and really, my life, off the ground and it wasn’t happening the way I anticipated. I shared this with a friend of mine who said, “Tim, it’s been my experience that when one door closes, two doors open.” This axiom has aided me many times until I finally “got it” and miraculously, I walked through the doors and business started happening. Hence, a New Dimension.

THREE TENETS

It’s my belief a sports field manager’s philosophy should consider the following three tenets. These come from my formal education, research background, people management and life experiences. They are: understanding turfgrass fundamentals, collecting data, and continuing education with research and technology. By using these tenets, a sports field manager gets access to providing a well-conditioned sports field. Here’s the catch: it’s also only, in my humble opinion, 20% of the job. The other 80% has everything to do with continuing communication with your crew and superiors. The 80% is the “other stuff” and this seems to be

the case no matter the job.

So what am I talking about with education, background, and experience? Growing up, I played soccer, ice hockey and lacrosse at a very competitive level. I had the good fortune of playing 4 years of college hockey (played in every game possible) at Cornell University and afterwards moved onto

Michigan State University to earn my 2-year certification degree as a golf course superintendent. While finishing up that degree, I became interested in attending graduate school and later earned a master’s degree in turfgrass science focusing on the utilization of crumb rubber in a variety of turfgrass situations. From this project, Dr. John N. Rogers, III and I received a US Patent for topdressing crumb rubber on natural turfgrass.

After completing my master’s degree, I decided to get into coach-

ing college hockey (ask me when you see me at the STMA Conference in Long Beach, CA) and for most of my coaching tenure, I coached at Cortland State (NY) while finishing with Coach of the Year Honors after 4 years.

Once I got the coaching bug out of my system, I earned my PhD at Michigan State University in 2005. Then I went back to my alma mater in Buffalo, NY, Nichols School, where I was appointed Director of Sports Fields, taught math and coached hockey and lacrosse.

DATA IS IMPORTANT

I believe I have a unique perspective for the turfgrass industry because I have a PhD, AND I have managed sports fields with unlimited and minimal budgets. At Nichols School there was a limited budget. Two things came out of this: I had to be creative and I had to have some tough conversations.

By having knowledge of good soil and turfgrass fundamentals, I could allocate my budget items to the practices that were critical for a successful sports field; mowing, overseeding, fertilizing and core cultivation. Notice there is no irrigation in the last sentence.

It’s been my experience that help is always there if you ask for it.

In essence, I had to use the three tenets; turfgrass fundamentals, on site data, and cutting edge research. First, there were times we didn't have the equipment or the proper equipment to complete the job such as implementing a core cultivation strategy. The core cultivation fundamental and strategy was crucial for the success of the sports fields at the school, and a way had to be found. So, I talked to a golf course superintendent and fellow Michigan State alum, and he helped me out, and I had to ask him more than once.

By having knowledge of good soil and turfgrass fundamentals, I could allocate my budget items to the practices that were critical for a successful sports field; mowing, overseeding, fertilizing and core cultivation. Notice there is no irrigation in the last sentence. Timing of the applications with rainfall was critical...like I said a minimal budget. Going through this process, I continually had to educate the crew and coaches why we were doing what we were doing? The constant question was "Why?" "Why overseed so much?" "Why do you have to core cultivate?" and my favorite, "Why can we not go on the field today?" It was a new en-

vironment for them, and within a short time, THEY reaped the benefits and eventually understood "Why." I simply knew from my education the fundamentals.

As play continued on the sports fields, I was also collecting data. At the time, an important question to answer was, "How many hours was the field in use?" At Nichols, we had five fields and not all of them were used equally. By answering this question, I had information to make wiser decisions on materials and strategies on where to improve the sports fields, and it was information our chief financial officer could understand. This one example of a particular piece of data was language that BOTH the sports field manager and a budget administrator could identify with and could make meaningful choices moving forward.

My athletic management (and coaching management) experiences have taught me to be persistent and continue to present as much data as I can, with less emotion. I have been guilty of not adhering to this and have learned over time, from people smarter than me, to have data in order to state your case whether it was turfgrass or ice hockey. It may

take time, and yet if you have empathy for the other person across from you and keep a level head, then maybe you will be able to help each other meet the goals that are in the best interest of the entity you represent.

CONCENTRATE ON WHAT'S POSSIBLE

Surprisingly or maybe not surprisingly, many people (not so much in this industry) are shocked when I discuss with them that a sports field is not a golf course. Once I layout the options for them, and they consider what is possible (typically based on budget), they consider new possibilities which can move them into a "New Dimension" of thinking. Never was this more clear was when I was working at Nichols School. In the summer of 2008, school officials discussed with me a renovation project for the baseball field. Approximately 3/4 of an acre had to be reestablished for this project. [Editor's note: You can read about this project in the November 2008 issue of *SportsTurf*, "How to get a sports field ready in 70 days."]

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porarily, since trying to rush them back into use results in a muddy surface that can be dangerous to the athlete and damaging to the grass.

It would seem, then, that artificial turf would be a runaway favorite as a surface in the U.S. But we don't hear as much about the use of artificial turf in tennis installations as we do in field sports, such as soccer, football, field hockey, lacrosse and more. Why is that?

In some systems, the turf is manufactured with a cushioned backing, or it is installed over a cushion mat to provide greater player comfort.

"One of the primary advantages of a sand-filled synthetic turf is the softer, more forgiving nature of the surface but with lower maintenance than expected on most soft courts," says David Marsden of Boston Tennis Court Construction Company, Inc. in Hanover, MA.

In some systems, the turf is manufactured with a cushioned backing, or it is installed over a cushion mat to provide greater player comfort. (The use of such cushioning will affect the final price, as will the quality of the system and the fill).

The good things about synthetic turf in tennis courts are similar to the good things in fields, says Rob Werner of Sportsline, Inc. in Exton, PA. "The fibers will be softer and the infill will be better."

FOR DIFFICULT INSTALLATIONS

In addition, synthetic turf is excellent for installations that are difficult in other circumstances.

"Sand filled synthetic turf courts are a good solution for rooftop installations," notes Rick Burke of NGI Sports, Div. of River City Athletics, LLC in Chattanooga, TN. "They can be installed without heavy equipment, and materials are easily trans-



All you need to know about synthetic tennis courts

When it comes to grass tennis courts, synthetic turf has a hard act to follow. Purists who follow play at Wimbledon, for example, love the fast game that natural grass provides, the fact that the surface stays cooler than many others, and the fact that there isn't any glare, even on the brightest day. It is, they believe, the way the game of tennis was meant to be played.

Looking beyond all the things the tennis idealists value, however, grass tennis courts have the same limitations as other natural athletic fields, including the need for daily care and regular maintenance, and the requirement that they be allowed to

rest between periods of heavy use. Note: Unlike many athletic fields, tennis courts can be rotated to make use of areas that are still playable, while allowing worn areas to rest. Like natural fields, however, a heavy rain can put grass courts out of action tem-

No question about it: an artificial turf surface (when built well) will drain beautifully and have a deep, green color without the wear at the baseline and in other spots common to natural grass courts.

ferred to the roof deck. They are loose-laid so construction joints are easily tended to. Because the finished weight is between 3 and 5 pounds, there is sufficient ballast so the courts do not lift. Also in situations where there is moisture, the courts are not affected by hydrostatic pressure or damage from moisture release from the pavement."

One of the charms of infilled turf systems for tennis courts is that they can be laid over existing asphalt or concrete pavements, allowing for reconstruction of badly weathered or cracked courts. It is essential to note, however, that a turf court is only as good as the pavement it is laid on; therefore, a cracked pavement must be leveled to insure planarity. If it is not, the turf will wear unevenly and the cracking will be visible as uneven areas in the playing surface. Once that type of wear becomes apparent, the surface must be completely replaced; resurfacing is not a possibility.

"The newer arena we now consider in the national turf marketplace is the municipal, cracked hard court market. Some of these entities, like boroughs, swim clubs and townships may not have the funding to repair hard courts. They now do consider synthetic turf for these areas for tennis and soccer surfaces for youth," adds Rob Werner. "Also, with the USTA QuickStart format, synthetic turf will be a great market to retrofit smaller kids' areas, and to provide portable, rollout turfs as a solution for parking lot areas. It's easy to install and to use for other sports, including golf."

According to Burke, a synthetic turf tennis court surface provides an enjoyable experience, and can be adjusted to provide the type of play the owner wants it to have.

"Generally, most players enjoy the comfort of play," he states. "The surface provides great shock attenuation. Most of the shock from impact is not returned to the body. Because the surface is loose granules, there is great foot release without foot-lock. There are three basic options for playability: First, a tight nap, short pile with the infill

below the tip of the fiber for a quick grass court type play. Second, a more open pile with sand just below the tip of the fiber for a medium-paced play. Third, a shorter pile with a colored infill over the top of the fibers for a clay court slide and slow play."

But according to the book, *Tennis Courts: A Construction and Maintenance Manual*, adjustments have to take place on the part of the athlete as well:

"Players sometimes complain that the infilled turf surface is so unique that it requires a considerable adjustment to their game. Also, unless the surface is well-groomed, any imbalance of fill will result in irregular ball bounce and non-uniform traction."

As with turf facilities used for other sports, there are multiple advantages, in-

cluding the ability to permanently line the facility for play, and not needing mowing or weeding. There are also the disadvantages including the warmer playing surface, the need to keep the turf clean of impurities, and the higher cost to repair damages caused by improper use, vandalism, etc. And while NFL players have been surveyed regarding their preferences of natural vs. synthetic fields, tennis players have never been given such a poll, so player opinion data isn't available.

MAINTENANCE: THE COMMON DENOMINATOR

No question about it: an artificial turf surface (when built well) will drain beautifully and have a deep, green color without the wear at the baseline and in other spots common to natural grass courts. But like its natural counterpart, it's not going to stay in peak form without work on the part of the owner.

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>> VIEW OF A MULTI-COURT FACILITY that uses turf as a surface. Note that the courts are well-marked and that the surface is kept free of debris. Photos courtesy of the Fast-Dry Company, Pompano Beach, FL.



>> THIS COURT has a viewing area, as well as a pergola and attractive landscaping. Photo courtesy of NGI Sports, Div. of River City Athletics, LLC, Chattanooga, TN.



>> THIS TURF COURT replicates the look of Wimbledon on a synthetic court for a private residence for an owner who wanted tennis and other sport use. Note the two-tone "mowing pattern" effect. Photo courtesy of Sportsline, Inc., Exton, PA.

looking for standing water (a sign of non-functioning drains) that can result in slick areas, and ascertaining that playing lines are still bright and visible.

Regular maintenance includes brushing to make sure infill is distributed consistently over the court surface, and to keep the turf fibers standing up. Periodic watering will assist in compacting the fill uniformly. Club courts should be brushed every week to maintain optimal playing quality.

Regularly remove debris including leaves, pine needles and more by using a

leaf rake and shovel, a leaf collector or a blower. Courts may need to be checked for torn or loose seams, repaired as necessary, and to have algaecide and/or fungicide applied as necessary.

After a heavy downpour, check the surface for bubbles that may develop, indicating that water has managed to get under the carpet. A builder can advise you on the best course of action in such a case.

The *Tennis Courts* book advises:

"To prevent maintenance problems, require players to clean their shoes before en-

tering the court. No food or drink, except water, should be allowed on the court surface. Any spill should be cleaned immediately with plain water or a diluted cleaner and rinsed thoroughly. Absolutely no smoking should be permitted in the court area. Burnt areas on the carpet are unsightly. For superficial burns, the carpet pile can be carefully clipped below the blackened or melted tips. For larger burns, the area may need to be replaced and patched. Contact the contractor for assistance."

The book's Annual Maintenance Planner notes that owners should plan to resurface these courts every 12-20 years.

Like all other tennis courts, a turf tennis court should drain in one true plain. In order of preference, it should drain from side to side, end to end, or corner to corner. Like asphalt, concrete and grass courts, its finished slope should be between .83% (1:120) to 1% (1:100).

The first mistake an owner can make, say builders, is assuming that an artificial turf tennis court will produce the same game as a grass court. The second is that it requires no maintenance. Neither is true. Artificial turf produces its own unique

game, and accordingly, it takes a unique upkeep regimen.

"Depending on the region, always look for moss and algae growth," says Rick Burke. "Courts should be groomed with a drag mat regularly. I recommend that the courts be opened in the spring by a qualified contractor to prepare them for the season. We have a detailed maintenance manual for the owner."

Some builders outside the U.S. say that artificial turf tennis courts are more popular in Europe than in the United States. Lacking a demographic study, however, that's a difficult claim to verify. What we do know is that most of the natural grass courts in the U.S. are either privately owned, or are in clubs. Artificial turf can be used in both these settings as well. However, because of the higher initial installation cost than a standard hard court, and because of the inability to repair extensive damage without total replacement, it is not recommended as a tennis surface in installations that will not

be supervised, or which might be subject to vandalism.

As with all sports surfaces, owners are advised to work with a professional partner who has experience with tennis courts. There isn't one right answer, only the right answer for a given installation, and the grass is always greener on your side of the fence if you feel you've made the right decision.

"We replicated the look of Wimbledon on a synthetic court for a private residence for an owner who wanted tennis and other sport usage," says Werner. "It has turf in that same 'mowing pattern' two-tone green surface. We like to say we brought Wimbledon here to the states without the dirt-like play Wimbledon has."

"Regardless of its use, there are basic advantages and disadvantages to both artificial and natural turf," says Norris Legue of Synthetic Surfaces, Inc. of Scotch Plains, NJ. "We think that natural grass is preferred when there is little or no heavy foot traffic, when maintenance costs are low, when there

is plenty of water for irrigation, and when run-off of fertilizers and/or pesticides is not a problem. Conversely, artificial turf has the advantages of being able to withstand heavy traffic, to require less maintenance, and to not need mowing, water, fertilizers or pesticides. Beauty is always in the eyes of the beholder when choosing natural versus artificial turf."

Note: The American Sports Builders Association (ASBA) is a non-profit association helping designers, builders, owners, operators and users understand quality sports facility construction. Available at no charge is a listing of all publications offered by the Association, as well as the ASBA's Membership Directory. Info: 866-501-ASBA (2722) or www.sportsbuilders.org ■



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Modern field design: "Asphalt to Green"

Editor's note: This article was written by Megan Rinebarger of Engineered Sportfield Solutions.

THROUGHOUT URBAN AREAS in the United States, green space has become scarce leaving many schools and recreation programs searching for a suitable solution. From coast to coast, demand has grown to the point where more than 800 multi-use synthetic turf sports fields are installed annually in North America alone. The majority of these projects replace existing natural fields to increase daily playability.

A new design concept for synthetic turf fields is now coming to the surface for owners and institutions with limited space. The Asphalt to Green (A2G) synthetic field concept was developed by Engineered Sportfield Solutions (ESS) to replace existing impervious areas of asphalt or concrete into much needed viable green space to revitalize communities in an urban setting.

New York, Los Angeles, and other

major metropolitan cities have turned to innovative ways to convert their overly abundant impervious areas into modern synthetic turf athletic playing fields. In particular, New York City Parks and Recreation has fully embraced the practice of turning asphalt or concrete areas to "green" for their public parks. The A2G turf system has been paramount in ensuring these easily converted parks maintain safety and performance.

The A2G system uses Sport DrainMax to provide drainage and shock attenuation in one layer. Sport DrainMax has been specifically developed for drainage directly under synthetic turf, offering enhanced performance while providing impact protection. It lends itself to the designer's plan by enhancing environmental sustainability and water conservation while improving today's synthetic turf design. Most synthetic turf surfaces are a compromise be-

tween performance and safety; Sport DrainMax allows you to create a surface with exceptional Gmax and performance values.

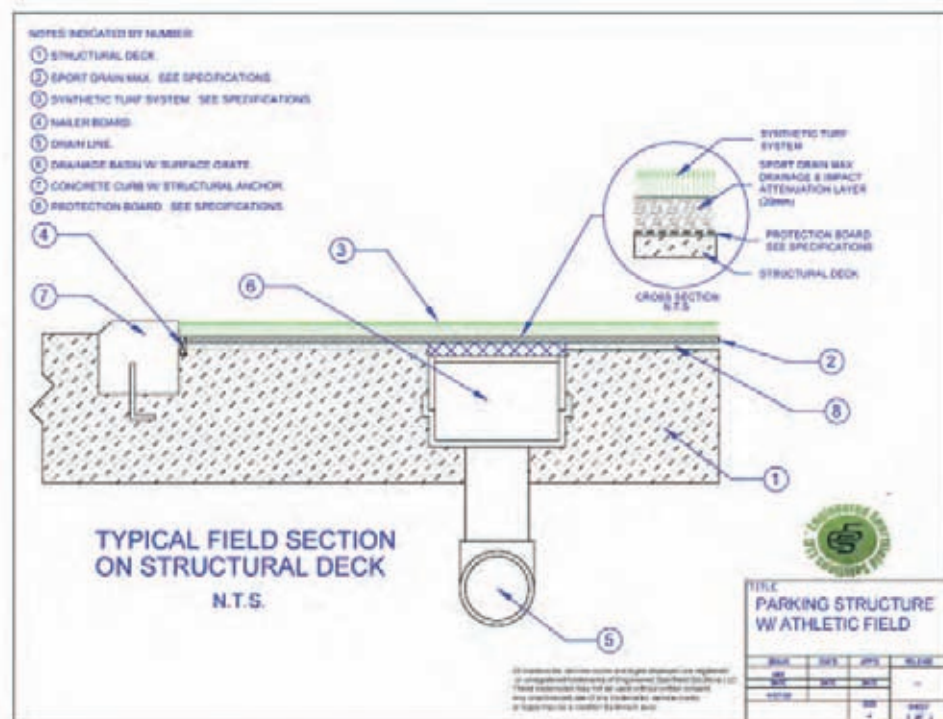
In 2011, Pomona College in Claremont, CA completed construction of the new athletic facility that includes a full-size athletic field to accommodate lacrosse and soccer atop a two-level parking structure. The school, like most, was trying to maximize their footprint and functional needs. The structure was designed for sustainability and includes a variety of green building features. In keeping with the plan, the parking structure specialist Watry Design, Inc. of

The escalating need for durable fields that accommodate multiple sports and the inability to expand have prompted a rising number of facilities to look for modern alternatives to the traditional.

Redwood City, WA teamed up with Lloyd Consulting Group of Phoenix to create a sport field with a best practice approach, satisfying all the needs of their customer. They selected Sport DrainMax to be placed directly over the concrete deck and membrane, eliminating the need for any natural aggregate materials required for drainage.

In 2009, Georgetown Day School completed a similar structure, located in the center of our nation's capital, where the school is challenged for open space. The need for additional parking drove the school to construct a synthetic turf athletic field on the top of the parking garage. An A2G synthetic turf system was selected and the project was completed on time with an aggressive schedule. The field is now being enjoyed by a variety of sport programs.

Dozens of smaller projects are continually being constructed nationwide. The Edison School in Brighton, MA just completed converting an existing tennis court to a synthetic turf surface using Sport DrainMax as the drainage and impact attenuation layer.



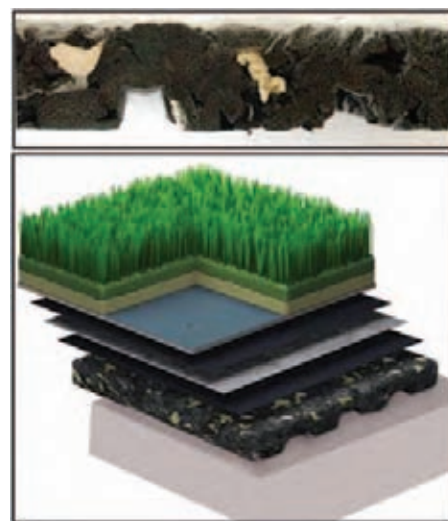
This 7,000-square foot project will enhance the need of the entire student body, from the sports programs to gym classes. The school found a simple solution to acquiring additional sport field space by recycling an outdated, under-used hard surface into a high-demand synthetic turf system.

The escalating need for durable fields that accommodate multiple sports and the inability to expand have prompted a rising number of facilities to look for modern alternatives to the traditional. They are no longer limited to renovating existing natural turf fields; parking lots, multi-purpose courts, parking garages, and rooftops are now all viable solutions. The demand has produced higher quality playing surfaces that replicate the look and feel of manicured natural grass on an impervious structure at a significantly reduced cost.

Sport DrainMax provides two very important design parameters when constructing synthetic turf fields, drainage—both vertical and horizontal, as well as impact

protection. It is designed to provide a virtual flat pipe under your entire turf surface requiring little slope. With Sport DrainMax, there is no need to remove the existing surface to construct an elaborate drainage system. In addition, the product is produced from 100% recycled foam, providing exceptional impact safety under the entire surface. The A2G synthetic turf system's design and function allows for engineered safety and performance directly under the entire turf surface. These new A2G turf fields can host a greater range of games, including contact and impact sports. A2G systems have been implemented for any type of sport including: soccer, football, baseball, softball, lacrosse, rugby and field hockey.

Engineered Sportfield Solutions continues to help owners, engineers, and turf professionals to develop these innovative technologies and implement them in cost effective Best Practice designs. ESS has extensive experience and data with almost



every type of synthetic turf infill on a base layer of Sport DrainMAX. By using this Drainage and Impact Attenuation Layer under the synthetic turf, the owner has the flexibility to choose any turf and infill combination to produce a high performing, safe athletic surface. ■


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H ☐ Other (please specify) _____

2 Which of the following best describes your title? (check ONLY ONE)

- A ☐ EXECUTIVE/ADMINISTRATOR — President, Owner, Partner, Director, General Manager, Chairman of the Board, Purchasing Agent, Athletic Director
B ☐ MANAGER/SUPERINTENDENT — Superintendent, Landscape/Ground Maintenance Manager, Foreman, Supervisor
C ☐ GOVERNMENT OFFICIAL — Government Commissioner, Agent, Other Government Official
D ☐ SPECIALIST — Architect, Designer, Consultant, Agronomist, Horticulturist, Certified Specialist
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3 Do you have the authority to buy, specify or recommend products and/or services for your business or organization?

Y ☐ Yes N ☐ No

4 Yearly operating expenditures (excluding salaries)

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E ☐ \$500,001 - \$1 million B ☐ \$25,001 - \$50,000
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Continued from page 23

Before starting this project, I explained what could be done to get the field ready for the fall season, and that it could be accomplished in 70 days. One administrator objected and insisted it couldn't be done. Why? He replied that a golf course superintendent told him it couldn't. I explained my proposal had been researched and sports fields use different grasses than golf courses. I explained the fundamentals and a few intricacies. In this case, my proposal was approved, and the duration of the project was June 23 to August 25 (63 days). The field was delivered on time, and we proved it could be done. Furthermore, I applied cutting edge research to the problem at hand.

See the article; the 20% part of growing grass was easy; turfgrass fundamentals, on-site data and implementing cutting edge research.

It was the 80% to get the approval that was the most challenging. Everyone in the conversation had a different opinion starting out and over a 6-week time frame, with continued conversation, the project received approval. That 80% was working with everybody to view the "grass situation" differently. The school ended up getting the product they wanted, they were pleased, especially the athletic director, and we all moved into a "New Dimension" after it was completed.

Today, NDT is involved with everything in turfgrass; residential lawn care to research to consulting about the best construction and management approaches for sports fields and golf courses. Within this gamut, we have been educating homeowners to decision makers about the fundamentals (and intricacies if they have a burning desire) of turfgrass and soil sci-

ence, and the most effective and efficient way to implement them. I have been blessed to have worked with extraordinary people on projects geared toward low maintenance sports fields to the 1994 World Cup with portable turfgrass inside the Pontiac Silverdome. And just recently my company was the architect and project manager for the new practice field for the Buffalo Bills. I am grateful for the turfgrass background that allows me to have this business and look forward to growing it. I'm here to help. ■

Dr. J. Tim Vanini resides in Buffalo, NY. He is Founder and CEO of New Dimensions Turf and can be contacted at tim@ndturf.com. You can also follow him at www.ndturf.com, Twitter @NDTurf and at <http://paper.li>, search New Dimensions Turf Clippings