



Photo courtesy Warner Larson, Inc., Boston, MA.

Having input into renovation & construction projects



Above and middle: Photos courtesy Warner Larson, Inc., Boston, MA.

Left: Photo courtesy Medallion Athletic Products, Mooresville, N.C.

We've all done it: sat across the conference table from someone in business and thought, "This would be a lot easier if the other person only (fill in the blank with a specific task you wish the other person would do)."

Let's face it: there's always going to be a time you want to bypass the whole learning curve. If we could only define in advance who was responsible for what tasks, it would save time and most importantly, keep problems to a minimum. As designers and builders of sports fields, we're faced with this every day. We sit down with the owners and managers of the facilities we're planning

to build and rehab. And invariably, from each side of the table come the questions. Who's responsible for this? Why wasn't this piece of information made clear? And what's the best way to correct this without costing a lot of extra money and time?

So here's our suggestion. Let's all work together to head off problems at the pass by defining now what we both need.

INFORMATION

As the sports turf manager, you have unique access to specific information about your project before the first shovel hits the ground. Bring that information to the table right away: **Your vision, and that of the owner.** This is where you have to sit down and provide a complete written prospectus. Ultimately, this will help your design/build team understand

exactly what you want, and exactly how they can help create your field of dreams. So make a list: Is this a field for one sport? For multiple sports, and if so, which ones? Do you anticipate having a running track built around the perimeter? Do you anticipate the facility growing over time to include a stadium, a locker room, etc.? Who are your users: high schoolers? College students? The community? Will there be use year-round or just in certain months?

Making a prospectus is a daunting project, but you'll be glad you did it and so will your design/build team and ultimately, the owner of your project.

"Put on paper everything you want your facility to be," says Mark Brogan of Pro-Sport Construction, Inc. in Devon, Pa. "Once construction has



Photo courtesy Medallion Athletic Products, Mooresville, N.C.

started, it's a lot harder not to mention more expensive, to add or change something."

Once your prospectus is written, have everyone involved read and sign off on it: your athletic director, coaches, principals (if this is a school), park and rec director (if it's a municipal field), team owner (if it's a professional facility), etc. After that, it should come to the design and build pros. In short, everyone needs to be on board and have the same vision.

BUDGET FOR THE PROJECT

Right here, we're talking start-to-finish for all aspects design, construction and materials. What is the bottom line for your project?

"A complete budget is the most important piece of information we can have," says Dan Wright of Sports Turf Company in Whitesburg, Ga.

Timeline: Does the field need to be completed in time for homecoming? In time for a dedication? Are you anticipating holding a graduation, festival or other special event on it? Tell your design/build team right now so they can factor that in.

Budget for maintenance: This includes whether maintenance will be done professionally or in-house, and how often. Yes, you need to know this now. It will influence what we build and how we build it. If you will be doing your own maintenance, you'll

appreciate knowing a system can work within your given time and budget constraints. After all, we know this is a place where, like it or not, owners want to save money.

"Proper maintenance will really help with things like drainage issues," says Dan Wright. But, he adds, it's where too many cut back and cut corners. "If you're a pro team or a major university, you can probably afford a full maintenance plan, but a park and rec or a local high school often has budget issues, and that's where they might cut."

Permitting: This is a big issue, but it's often overlooked. Is the sports turf manager responsible for securing all applicable permits? Is the designer or builder? The only right answer here is the one you decide upon in advance, since it can save a lot of unnecessary problems and delays. Same applies to finding out about local codes and which authorities have to be notified about pending construction or rehab projects.

Surface preference: This is not a debate natural grass vs. synthetic turf. Whichever you choose, however, know that this will affect the entire design and construction of the field. Choose a surface based on how much use, and what type of use, your field will get. Builders can provide recommendations.

"While synthetic was initially marketed based on the money it would save on water,

fertilizer, and labor, those savings do not in fact cover the additional cost of synthetic turf," says Robert J. Cohen of Sport Surfaces Distributing, Inc. in Albuquerque, NM. "The actual benefit of synthetic is that it can be played on all day, and that one field can serve multiple uses, something you could consider if you're worried about the cost of buying land for additional fields."

Playing lines: How many sports you want your field to accommodate? This might seem minor, but the wrong choices, or the choices that are made too late, will come back to haunt a facility, particularly one with a synthetic surface.

"The owner needs to think carefully about the sports for which they will want permanent lines installed," says Jon Renner, CTB, of Line Design, Inc. in Littleton, Colorado. "A maze of lines on a field can certainly be confusing to athletes, officials and spectators. If it's known for sure that a field will be used for soccer, football, field hockey, as well as men's and women's lacrosse — there are different sets of lines for men and women — then it's probably in the owner's best interest to have them permanently inlaid in the turf. If there is some doubt as to the usefulness of a particular line or the field's use for a particular sport, it may be best to just paint it on, and repaint the markings yearly, as long as it is needed. Removal of inlaid lines can be expensive and problematic."

OVERSIGHT

Once design and construction has begun, the sports turf manager should work as an active liaison between the professional team and the owner. The manager should be relaying questions, getting answers and most importantly, ascertaining the project remains on budget and on time. Remember your prospectus? Keep checking it and making sure the project is conforming to what you had in mind all along.

The construction team will have a project foreman, and the sports turf manager should be on good terms with that person, and should keep open the lines of communication. We prefer the sports turf manager to be our 'point person' rather than having us need to address multiple questions to different contacts within the administration. Knowing there is one person we can turn to makes our job a lot easier. (Designers and builders know the turf manager may need to consult with an athletic director, coach, school principal or other authority before giving us a response to a specific question, but the fact is we're just grateful that we don't have to hunt for that person ourselves, and then get passed around the administration while we wait for an answer).

Oversight should include regular visits to the site, regular conversations with the design and build pros, and regular check-ups to make sure materials will come in as ordered, payments are being made on time and that work is progressing. If weather is causing delays, or if some unexpected problem with the site crops up, this information should be relayed to the sports turf manager so that he or she can help address the issue and pass any information along to the appropriate group(s).

Punch list approval: When the project is completed, the sports turf manager, as the point person, will probably be the one who signs off on it. This is another place where your prospectus will come into play. Use it to create a checklist of any problems or outstanding work, and communicate with the project foreman. Check off items as they're addressed.

The sports turf manager may not be signing the final check, but he or she should be responsible for making sure each aspect of the finished project has been com-

pleted to the satisfaction of the client. And ultimately, that's what the design and build professionals want too. ■

Mary Helen Sprecher wrote this article on behalf of the American Sports Builders Association, which helps designers, builders, owners, operators and users understand quality sports facility construction. The ASBA sponsors in-

formative meetings and publishes newsletters, books and technical construction guidelines for athletic facilities including sports fields. It also offers voluntary certification programs in sports facility construction and maintenance. 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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Guide to synthetic infill products

Glossary of Terms from the Synthetic Turf Council:

CRUMB RUBBER AND COATED RUBBER INFILL

Crumb Rubber is derived from scrap car and truck tires that are ground up and recycled. Two types of crumb rubber infill exist: Ambient and Cryogenic. Together these make up the most widely used infill in the synthetic sports field and landscape market. Crumb rubber infill is substantially metal free, and, according to the STC Guidelines for Crumb Rubber Infill, should not contain liberated fiber in an amount that exceeds .01% of the total weight of crumb rubber, or .6 lbs. per ton.

Coated Rubber: Both ambient and cryogenic rubber can be coated with colorants, sealers, or anti-microbial substances if desired. Coated rubber provides additional aesthetic appeal, reduction of dust by products during the manufacturing process and complete encapsulation of the rubber particle.

EPDM INFILL

EPDM (Ethylene Propylene Diene Monomer) is a polymer elastomer with high resistance to abrasion and wear and will not change its solid form under high temperatures. Typical EPDM colors are green and tan. EPDM has proven its durability as an infill product in all types of climates. Its excellent elasticity properties and resistance to atmospheric and chemical agents provide a stable, high performance infill product.

ORGANIC INFILL

There are several organic infills available in the North American market, all utilizing different organic components, such as natural cork and/or ground fibers from the outside shell of the coconut. These products can be utilized in professional sports applications as well as for landscaping. At the end of its life cycle it can be recycled directly into the environment.

SAND (SILICA) AND COATED SILICA SAND INFILL

Pure silica sand is one of the original infilling materials utilized in synthetic turf. This product is a natural infill that is non-toxic, chemically stable and fracture resistant. Silica sand infills are

typically tan, off-tan or white in color and - depending upon plant location - may be round or sub-round in particle shape. As a natural product there is no possibility of heavy metals, and the dust/turbidity rating is less than 100. It can be used in conjunction with many other infills on the market to provide a safe and more realistic playing surface. The round shape plays an integral part in the synthetic turf system. It is important that silica sand have a high purity (greater than 90%) to resist crushing and absorption of bacteria and other field contaminants. Silica sand can either be coated with different materials as a standalone product or can be used to firm up in combination with traditional crumb rubber infill systems.

Coated Silica Sand. This class of infill consists of coated, high-purity silica sand with either a soft or rigid coating specifically engineered for synthetic turf. These coatings are either elastomeric or acrylic in nature (non-toxic) and form a bond with the sand grain sealing it from bacteria to provide superior performance and durability over the life of a field. Coated sand is available in various sizes to meet the application's needs.

Depending on the amount and type of infill, coated sands can either be used with or without a pad and are available in various colors. All of the coatings are non-toxic and are bonded to the quartz grain for superior performance and durability over the life of your field. These materials are typically used as a homogenous infill which provides both ballast and shock absorbing qualities to a synthetic turf application.

TPE INFILL

Thermo plastic elastomer (TPE) infill is non-toxic, heavy metal free, available in a variety of colors that resist fading, very long lasting, and 100% recyclable and reusable as infill when the field is replaced. TPE infill, when utilizing virgin-based resins, will offer consistent performance and excellent g-max over a wide temperature range. ■

Thanks to Lew Shrubsole, CPM, CPSM, SCMP, manager - supply & logistics, Target Technologies Int. Inc.

BRAND NAME: CUSHIONFALL SPORT

What it is: Colored and Encapsulated SBR Recycled Crumb Rubber Infill, covered in a special coating using a specialized patent-pending process.

Selling points:

- Lead free
- Reduces heavy metal leachates of crumb rubber by 80%
- Less odor and dust
- Minimizes static cling
- Improves water permeability
- Improves Gmax levels

Color: Green or Tan

Manufacturer: Color Biotics

BRAND NAME: CUSHIONFALL SPORT GREEN

What it is: Rubber infill coating

Selling points:

- Bright green encapsulation of rubber crumb material contributes to vibrant, more realistic-appearing surface (better for HD TV)
- Extends life of crumb rubber and is UV-resistant, helping fields retain their shock-absorption properties and reducing static
- Reduces volatile organic compounds by 71% and heavy metal runoff by 80%

Colors: Green, Tan, Silver

Manufacturer: Color Biotics

BRAND NAME: ENVIROFILL

What it is: Acrylic-coated, rounded sand

Selling points:

- Lower the surface temperature of a synthetic turf field.
- "Microban" protection against bacteria, mold and mildew that can cause stains, odors and product deterioration.
- Can be reused for at least two turf life-cycles because it's not mixed with other infills
- Round infill plays very consistent
- No odor, dust, leachate or VOC's.
- Does not cling

Colors: Green or Cool Tan

Manufacturer: USGreentech

BRAND NAME: FLEXSAND ACTION

What it is: Polyolefin elastomers and high-purity quartz coated sand infill

Selling points:

- Shock absorption qualities and the ballast performance of raw sand
- Eliminates static charge
- Low abrasive index; no chemicals or metals
- Reduces “kick out” of infill material
- Uses cross-linking molecular bonding to ensure coating’s integrity

Color: Sand

Manufacturer: Fairmount Sports + Recreation

BRAND NAME: ENTECH

What it is: SBR rubber infill

Selling points:

- Material made out of only all black commercial truck tires containing no fiber
- Very low dust and no white sidewall particles
- Inexpensive, durable, no fiber, recyclable
- Playability and shock absorbing qualities
- Service all Midwest by truck

Color: All Black

Manufacturer: Entech Inc.

BRAND NAME: FLAMEGUARD

What it is: Polyolefin-based infill pellets

Selling points:

- Will quickly extinguish flame spread
- Non-abrasive, performance layer added as a small topdressing application to a standard infill mix

Color: Black

Manufacturer: FieldTurf

BRAND NAME: FLAMEGUARD GREEN

What it is: Infill pellet

Selling points:

- Environmentally friendly pellet that extinguishes flame spread and is made using recycled artificial turf fibers

Color: Green

Manufacturer: FieldTurf

BRAND NAME: NATURAFILL

(part of system, not sold separately)

What it is: Organic infill composed of 100% cork

Selling points:

- Recyclable and re-usable with no by-products

– Odorless

– Cork will not crumble or become deformed

– Drains off rather than absorbs water

– Not a medium for microorganisms

– Cooler than rubber infill

Color: Cork

Manufacturer: Domo Sports Grass

BRAND NAME: INFILLPRO GEO

(part of system, not sold separately)

What it is: natural cork and coconut fiber (coir)

Selling points:

- Reduces heat of synthetic turf system
- Increased foot stability
- Lower Gmax
- Highly permeable for improved drainage
- 100% organic and Earth friendly, 100% recyclable

Color: Earth brown

Manufacturer: Limonta Sport Spa

Type of Infill	Material Cost of 90,000 sq ft Field	Pro	Con	Comment
Ambient Rubber	\$50,000	It works, low cost	?	Qualifies for LEED credit
Cryogenic Rubber	\$100,000	It works	Cost 2x more than ambient	Qualifies for LEED credit, some area supplies are monopolized by one turf company so they try to get it specified to give them a cost advantage.
Silica Sand	\$15,000	Uniform size, lower Gmax (20%)	Cost 10x more than angular	Owner's choice if about \$13,000 is worth it
Angular Sand	\$2,000	Cost 1/7th	Compacts a bit more	Haven't seen the "cuts turf fibers" that some companies claim—even in 12-yr-old fields
Colored, Man-Made Rubber	\$220,000	Special look	Cost \$160K more than ambient	Can lower surface temp by 3-10 degrees
Color-Coated Rubber	\$280,000	Special look	cost \$220K more than ambient	Can lower surface temp by 3-10 degrees, still get some LEED points
Rubber(green)-Coated Sand	\$100,000	Rubber & sand can't separate	Cost 2x more than ambient	Can lower surface temp by 3-10 degrees. Raises Gmax considerably (50%?)
Coconut Husks +	haven't used it			Qualifies for LEED credit
Cork or Walnut	haven't used it			Qualifies for LEED credit

Note: All prices vary and these are representative costs for relative cost analysis; compiled by W. Todd Smith, PE, LEED-AP, Academy Sports Turf, LLC, Englewood, CO.