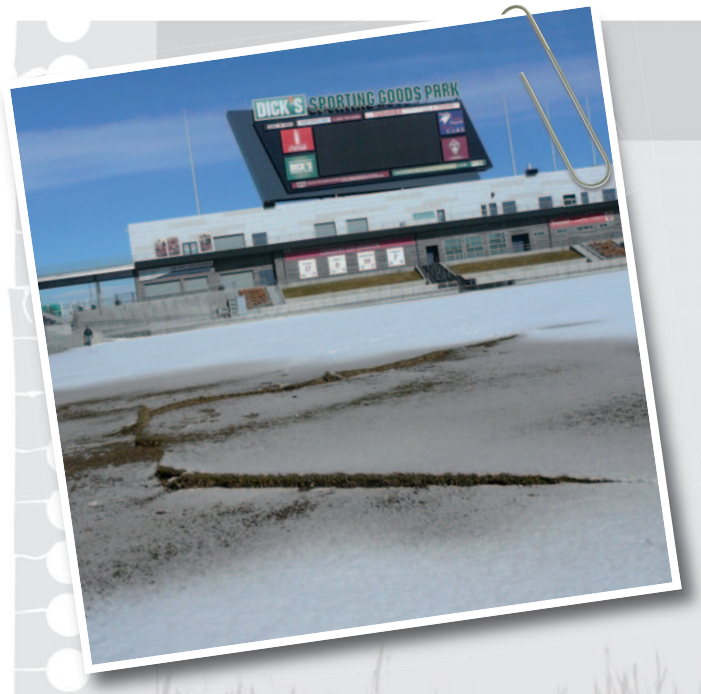


JOHN MASCARO'S PHOTO QUIZ

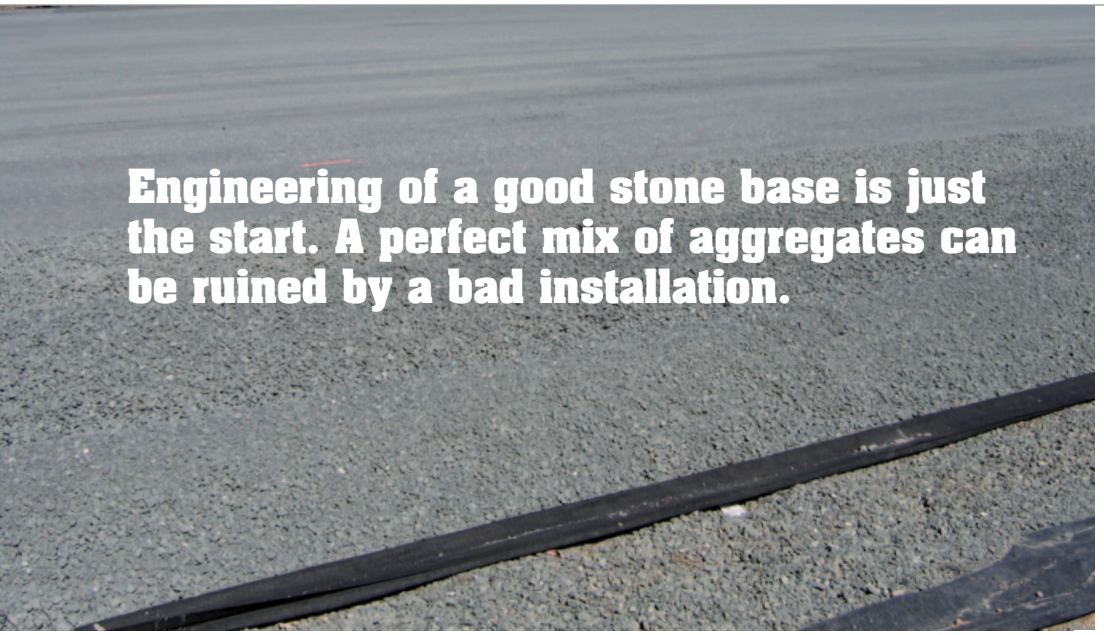
Answers from page 17

This 4-year-old, state of the art soccer stadium is located in Denver. It is a sand-based field that also includes a forced air moisture removal system throughout their drainage lines. In addition to being able to remove water from the profile, the fans can be run in reverse and used to control the rootzone temperature by warming the turf in the winter and cooling the bluegrass in the summer.

Since this winter was one of the coldest on record, the Sports Turf Manager had never seen this Major league soccer complex field frozen this deep before. He turned on the forced air system to warm the soil from the pump room and was watching the fields thawing progress. After about 5 minutes he noticed this dark ring of soil on top of the snow and instantly shut the system off. As it turns out, the soil was frozen solid down to a depth of about 5 inches and since the air had no place to go, it built up in the gravel layer of the drainage system and then found this weak spot and the field cracked open, expelling some soil and built up air. The Sports Turf Manager allowed the field to thaw out on its own and then rolled the turf back down. The first game was held a little over a month later in March and the field was in perfect shape for the event.

Photo submitted by Bret Baird, Head Turf Manager at Dick's Sporting Goods Park in Denver, home of the Major League Soccer's Colorado Rapids.

If you would like to submit a photograph for John Mascaro's Photo Quiz please send it to John Mascaro, 1471 Capital Circle NW, Ste # 13, Tallahassee, FL 32303 call (850) 580-4026 or email to john@turf-tec.com. If your photograph is selected, you will receive full credit. All photos submitted will become property of *SportsTurf* magazine and the Sports Turf Managers Association.



the findings of the geotechnical report we may be able to allow some water to percolate in to the subgrade, but that is the exception and not the rule. If you have an existing sub grade that can be compacted, with a high percolation rate and a low expansion index, you are extremely fortunate. Typically, most if not all of the surface water that penetrates the synthetic turf will need to use the base as a transportation medium to the storm water drainage system.

Generally, there are at least two base options for consideration when building a synthetic turf field section: a stone base or drainage mats. Both are used today with a preference that is often based on regional availability of materials, native soil conditions and experience of the construction team. The first synthetic turf fields used a combination of aggregates to achieve the structural stability required while maintaining the drainage characteristics to keep the field playable in the worst conditions. This method is still often referred to as a "traditional" stone base.

The stone must be angular enough to allow pore space for drainage, the sieve size varied enough that it will interlock to form a stable surface without settlement, and the material strong enough that it will not turn to dust when compacted. A final layer of stone is often required with the same characteristics in a size that can be fine graded to meet strict tolerances for planarity.

Engineering of a good stone base is just the start. A perfect mix of aggregates can be ruined by a bad installation. Best practices require testing of materials at the source and upon delivery to the site. Continual testing for compaction and porosity should be scheduled regularly as the aggregate is being installed. An experienced contractor or subcontractor is key. A low-bid environment may not achieve the best results.

Drainage mat systems underlay the synthetic turf and come in a variety of materials. Cost of raw materials and petroleum, concerns for safety, and the occasional failed flood test have resulted in the design of multiple systems. The intent is for easier construction, predictable drainage and in some cases a tertiary benefit of increased or consistent shock attenuation.

It is worth taking a moment to talk about shock attenuation, i.e. Gmax. It is the most often used term when discussing the safety of synthetic turf fields. Drainage mat systems have been shown to influence the Gmax of a synthetic turf field, but few are sold as part of a synthetic turf system. The potential for future claims or disputes and the associated finger pointing, should the Gmax exceed safe limits during the warranty period, are real. For this reason, we strongly recommend that the Gmax performance of the synthetic turf alone be guaranteed to meet the specifications regardless of the base it is installed on. Any anticipated impact that a drainage mat may have on the Gmax of the field should be considered a bonus and closely coordinated between the drainage mat manufacturer and the synthetic turf manufacturer to avoid warranty conflicts.

The most significant difference between a traditional stone base and a drainage mat system may be in how they handle water. Concerns about over compaction and porosity of the stone are not a factor in most drainage mat systems. If a stone layer is installed, its function can be structural only. This makes the task of providing a firm and unyielding base much more comfortable to most grading contractors. An aggregate base can be installed and compacted to fulfill the core requirements of structural stability and planarity.

Drainage mats may require an additional layer of geotechnical fabric to ensure that the horizontal surface flow under the synthetic turf does not erode the aggregate base. The unit flow rate of some drainage mat systems has tested at 26 gal/min/ft2. Translated, that's more rain than any 100-year event in U.S. history and far exceeds the limits of the synthetic turf above it. A layer of woven geotextile fabric can help distribute the water evenly and guarantee that the aggregate and/or subgrade below it are protected against erosion.

In instances where an existing sand-based field is being replaced, some of the existing system may be able to remain. Sand-based fields typically have a minimal potential for expansion. The geotechnical engineer will give recommendations about the stability of the subgrade and if any treatment would be required to modify the remaining sand base. Modifications will still be necessary. Most sand based fields are designed with the rootzone as the structural component to stabilize the playing surface. In the absence of living turf, most sand based fields feel more like beaches and less like athletic fields. If the sand base material is deemed stable, the potential for removal of the synthetic turf and reuse of the field base for a natural turf field remains.

Regardless of the base option chosen, a storm drain outlet is required. Pipe sizes and materials will vary based on regional and engineer's preferences, but all serve

The potential for rainwater harvesting exists with any synthetic turf base option.

similar purposes and share similar problems. Often times the open graded stone used as drain rock around pipes is rounded and struggles to compact to specified levels. If lime or cement treatment was used to stabilize the subgrade, care should be taken in areas where the depth of the pipe exceeds the depth of the treatment. Lining of the trench with the woven geotextile fabric used below the drainage mat is a common practice. Locating the trenches that contain the drainage piping beyond the field boundaries helps ensure that differential settlement over the life of the field will not impact the use.

SUSTAINABLE OPTIONS

Consider sustainable or "green" options. Many of the composite drainage products contain recycled materials or can be recycled themselves. The benefit of keeping the field section shallower with a drainage mat can minimize earthwork, off haul and equipment costs as well as the carbon footprint of the project. Most drainage mat systems can be delivered in a single load.

The potential for rainwater harvesting exists with any synthetic turf base option. In a traditional stone base, the storage capacity of the stone and the filtration of the water through the base and synthetic turf make an excellent start towards re-use of the rainwater for irrigation to cool the field or irrigate surrounding landscape areas. The same benefit is realized with any drainage mat option with the only limiting factors being storage capacity and required filtering of the water collected. Either system generates a water supply that is cleaner than most run off from natural turf fields. Compared to the potential contamination of silt, herbicides and pesticides commonly used to maintain natural turf fields at their peak the harvested rainwater is often cleaner than municipal recycled water sources.

Base systems are gaining their own importance in the life of a field. They now offer a warranty that meets or exceeds that of the synthetic turf manufacturers. One composite base provider has offered a 20-year warranty on their materials as standard. While no guarantee is iron-clad, that level of confidence in a system to perform provides a level of comfort that traditional stone base construction cannot match with a standard construction warranty of one year.

Once you have made the decision that synthetic turf is in your future, be sure that your selection of base materials provide the structural stability and drainage performance you need. Local landscape architects, geotechnical engineers and contractors with specific experience in this specialized field can help you with material selection, budgets, timelines, constructability and sustainability options. ■

Tony Wood, a landscape architect with Beals Alliance, Sacramento, CA has completed hundreds of facilities in the past 21 years with a broad range of scope, budget, and program needs.

Alternate water supplies for sports turf irrigation

Throughout my 25 years of irrigation installation, design, and maintenance, I had to learn how to solve the technical, environmental and economic problems that different water supplies presented.

If your facility uses potable water for irrigation, you have likely been asked to reduce your irrigation water use and to continue managing soil moisture levels in the rootzone of your irrigated turf.

The price and regulation of potable water continues to change dramatically, and you may be asked to use a lower quality water supply soon. Alternative irrigation water supplies like ground water, surface water, reclaimed water from a utility, or water from a reverse osmosis (RO) treatment plant may be your next choice.

WATER RIGHTS AND USE REGULATIONS

In Western states with water rights, those laws must be considered first. In many cases, high quality water supplies may be on site and at low cost to access, but regulations prohibit easy access to them. In Utah, the state legislature is considering lifting restrictions on rainwater harvesting for small scale irrigation systems. This regulatory change (Senate Bill 32) would allow the collection of rainwater in a single 2,500-gallon underground tank. Anyone harvesting rainwater would be required to register with the state water districts, provide technical specifications of the harvesting system and report collection volumes. Although a 2,500-gallon tank will not provide adequate water supply for a sport turf system, this legislation represents a shift in the regulation of rainwater harvesting and alternate irrigation options.

Eastern states that previously had few ordinances governing the withdrawal and use of water resources for irrigation have new restrictive laws and regulations.

For example, one north Georgia city shut down all irrigation systems using potable water, including sports turf, during a recent drought. Only irrigation systems using well water or surface water systems were allowed to operate, and only for 1 day a week during the drought. A group of local turf managers spoke up and a new set of water use rules were adopted that recognized the professional turf managers' responsibilities. In the event of another prolonged drought, facilities with sports turf will be allowed to operate their irrigation systems as required to manage quality turf and safe playing conditions on their fields.

WATER QUALITY

When it comes to irrigation water quality, turf managers should consider the presence of suspended particulate matter that might affect the irrigation system equipment, and dissolved salts or elements in the soil that may affect the health of the turfgrass.

To determine water, and the effect it can have on your soils, a laboratory chemical analysis should be performed. These tests can be conducted with relative ease by following sampling methods and using specific collection containers. A basic water or soil analysis report will cost between $100-$200 and will reveal the size and volume, or count, of dissolved and suspended organics and inorganic solids and minerals, and conditions of the sample that are present at the time and location of the sampling.

Basic water tests often include measurements of water pH, Electronic Conductivity (EC), Total Dissolved Solids (TDS), Total Suspended Solids (TSS), salinity hazard, total alkalinity, hardness, metals (aluminum, iron, manganese, copper, zinc), major cations (sodium, calcium, potassium, magnesium), sodium adsorption ratio (SAR), and major anions (fluoride, chloride, bromide, nitrate-N, phosphorus, sulphur). The water lab will ask for the turf type being sampled, and will provide a report outlining the hazard potentials relative to the level of each parameter.

Although an analysis of the above tests would be better explained by a university professor and a chemistry textbook, it is important to understand that these are present in the water and soil and do have an effect on the turf. Turf managers are traditionally most interested in pH and salinity numbers, SAR, TDS and EC as these may eventually result in soil conditions that inhibit nutrient and water uptake. This could potentially lead to plant stress, thinning turf, or susceptibility to pests and diseases.

Organic material content, soil composition, soil compaction, drainage and cultural practices will further determine how a water supply will ultimately affect soil and turf.

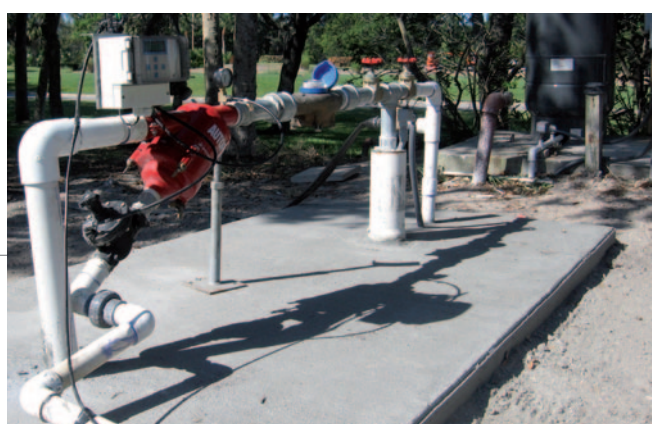
GROUND WATER

After potable water, ground water from a well can be the highest quality and the lowest cost of irrigation water supply available to turf managers. Most drinking water supplies come from deep ground water wells, so there is competition for this water supply. Ground water quantity and quality varies at different levels in the soil profile and at different locations on a site.

Well water samples for new wells are obviously hard to acquire. These samples should be taken and paid for by the well installer in the "test well" phase during the drilling of a well. The test well process assures water quality, volume and pressure from a new irrigation well. Purchasing agents or irrigation consultants can assist in developing language for well water drilling specifications.

Depending on the hydrology of a site, an irrigation well could be drawing either shallow or deep. Local well drillers will

Ground water drawn from a new 6-inch shallow well with pressure start pump motor controls and sand filter.



All images by M. Prevost

This is signal start, suction lift pump station pulling surface water from a canal adjacent to new football practice fields.

generally provide excellent advice on the location and depth of a well that will deliver the best water quality at the flow rate and pressure needed. Well drillers are like irrigation installers—each have their own approach to workmanship, materials and equipment for a project. It is recommended to have at least two local well drillers visit the site and review the well application before sending out a request for proposal (RFP) for a new well. This will assist in developing the scope, budget and timeline for the project.

Surficial (shallow) well waters tend to be lower quality as they have less soil structure to act as a filter. Iron staining can occur when the iron (Fe) content is greater than .3mg/L in water, and can be expensive to eliminate. An environmentally effective method to treat iron staining is to discharge the well water into an open surface water body. Oxygen in the water converts (oxidizes) the suspended Fe to a solid and it falls (precipitates) out of suspension in the water. The equipment and power to pump the water out of the treatment lake is an added expense, but the water is cleaner without using any injection equipment or chemicals.

When planning the location of an irrigation water well, provide sufficient vehicular access for the drilling rig. If a large diameter or deep well is needed, the driller will need a wider lay back area for a larger rig's operation. Also, consider the proximity to your existing electrical service as the electrical service can sometimes cost as much as the well equipment. Three phase electric power is required for 10 hp pump motors or larger, so well projects should begin with plans to extend electrical power to a proposed well location.

SURFACE WATER

Surface water supplies maybe your lowest quality water and the lowest cost water supply. Bacteria, algae and aquatics live at different temperatures and light levels in surface water; therefore, it is important to test water quality by taking surface water samples from the same depth that the intake line will be set in the proposed pump station. The highest water quality can be achieved by setting the lake pump intake line at the point in the lake where microbial activity is lowest. Typically, this tends to be 2-3 inches from the lake top, or bottom, depending on the pumping volume, water turbidity (clarity) and lake bottom material.

In arid regions, chlorides are found in rainwater runoff waters. Using surface water in these areas for irrigation requires a leaching cycle which is 30-50% longer than normal station run times. Leaching cycles will help move salt buildup out of rootzones of a well drained turf in the absence of an equivalent rainfall event. The frequency of the leaching

cycle you select is dependent on the concentration of chlorides in the water or soil profile.

Large suspended items like plastic, trash, plants and fish in surface waters can be remediated with an intake line screen. A simple intake screen for a small pumping applications (less than 300 gpm) uses a PVC pipe, correctly sized for the pump flow rate. Holes are cut into it the pipe with a hole saw, the intake is wrapped with 316 grade stainless steel #2 mesh or #4 mesh wire screen, and secured with stainless steel worm gear clamps. The screen is removable, and can be cleaned according to the lake water quality and how the pump station operation is managed. In any application, the intake screen is an important part of the pumping system and is to be included with the maintenance of the pump equipment.

Pump intake lines, discharge lines and power connections should be installed and maintained in the first year warranty by the pump equipment provider. If improperly installed, these lines can damage a pump and diminish pump performance and efficiency. There are many configurations of pumps and filters for surface water applications. As with well motors, bringing electrical power to a lake pump station can be expensive.

RECLAIMED WATER

Reclaimed water is the most technically, environmentally and economically feasible option to reduce potable irrigation water use. Those who have a reliable reclaimed irrigation water source available are fortunate in today's times of limited water sources. The large purple pipes going in the ground on new roadway projects represents the availability of reclaimed water, and it is both a positive nod to the irrigation industry, and a sustainable solution to managing irrigation water supplies.

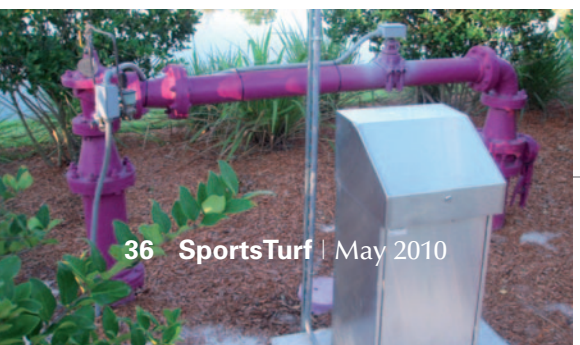
Because reclaimed water is not used for fire protection or human consumption like potable water, it can have an occasional service interruption, or a minor water quality problem like small debris or odors. Pathogens in the water that are harmful to humans are rarely a problem. There are strict heath department regulations, daily monitoring requirements and treatment plant testing to prevent human health risks.

In some instances, the reclaimed water demand exceeds the availability. Subsequently, subscribers experience a periodic decrease in water pressure, and a booster pump is required to sustain higher water pressures required for sports turf size rotor heads and nozzles.

Higher salt levels have also been observed in reclaimed water. This saline level may decrease ryegrass seed germination rates, requiring higher seeding rates and increasing the need for reseeding. Suspended clays in some reclaimed water can build up over time in the soil layer and inhibit infiltration rates, requiring some type of aerification to remediate the problem.

Some county health inspectors will not allow quick coupler valves on reclaimed water irrigation systems because people are more likely to drink from a hose connected to a quick coupler. On these systems, quick couplers should be serviced from a potable water supply. Outdoor dining and bathing facilities usually have a 50-100- foot set back distance from the wetted area of a reclaimed irrigation system. And, of course, purple colored (Pantone #512) pipe, sprinkler caps, nozzles, and valve boxes are required, as well as signage requirements for public health and safety regulations associated with reclaimed water.

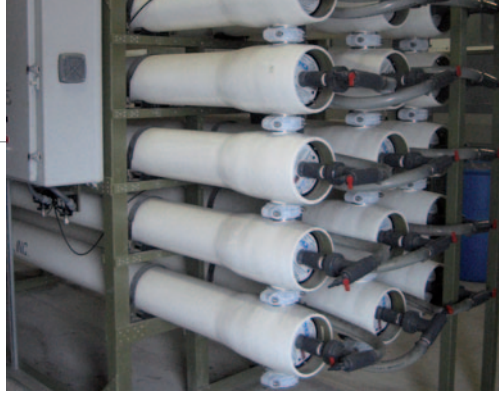
Public health codes require the use of purple color pipe (Pantone 512) to distinguish reclaimed water lines from other supply lines.



REVERSE OSMOSIS WATER

In the reverse osmosis (RO) process, high pressure pumps push low quality (usually salty) water through permeable membranes in cylinders and a pure water supply results. A concentrated salty waste byproduct water has to be discharged and diluted in a larger water body, and a permit is required for this process. RO water is of very high quality and has the highest cost, short of having water purchased and trucked in daily.

On the Monterey Peninsula, the local water purveyor reported their cost was $250 per acre foot to pump fresh water from the Carmel River; however they are being required by the State Water Resources Control Board to pare back withdrawals from the river by over fifty percent. The water company now estimates it will cost $2,500 per acre foot to use an alternate RO water supply.



Reverse osmosis systems produce clean water through permeable membranes in a bank of cylinders.

Micronutrients are eliminated from irrigation water through the RO process, and turf may be subject to a wide range of nutrient deficiencies if irrigated exclusively with this water supply. In the Caribbean, due to scarcity and expense of fresh water, RO water is often blended with lower quality makeup water supplies for irrigation use. RO water is used when all other water supplies are not available, and the economics of the equipment and electric power consumption can be justified.

Each water supply has a technical, environmental or economic advantage over an alternative water supply. It is important for turf managers to understand the impact that any water supply may have on their fields, and to establish early strategies to protect both soil conditions and turf quality. In this time of economic struggles, turf managers have a difficult, yet worthwhile, task: to identify the best alternate water supply, which is easiest to access, has the least cost, and is the most environmentally useful.

My favorite water supply is water conservation. Think about it. Each gallon not used today, is an amount that stays in the system. Today's conservation is tomorrow's water supply. ■

Michael Prevost has been an irrigator and turf manager in Tennessee, Florida, Texas, and California. He now designs irrigation systems nationally and internationally for deisgnpsi.com.

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Membership Category:

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*There must already be a National Sports Turf Manager from your facility or Commercial Member from your company before you may sign up in the Associate category.

Phone: 800-323-3875 www.STMA.org

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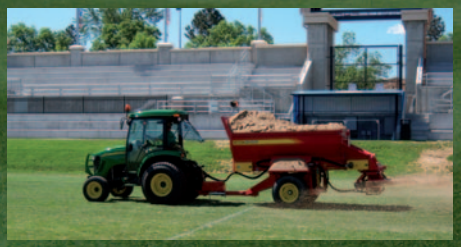
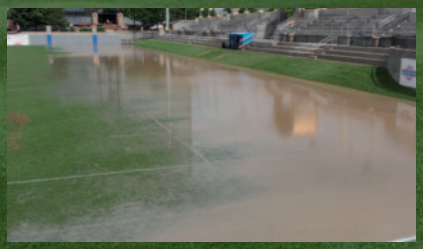
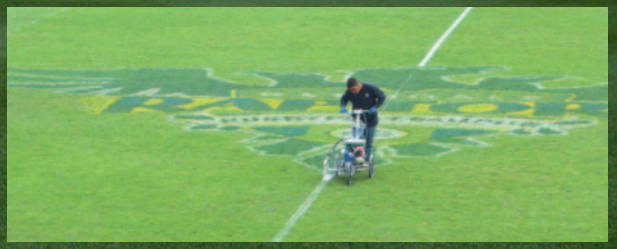
F.O.Y.
Field of the Year







Infinity Park

wins Schools/Parks Sporting Grounds Award

LED BY MANAGER of turf operations Joshua Bertrand, the crew at Infinity Park in Glendale, CO a suburb of Denver overcame a flooded field in June to win the Sports Turf Managers Association's 2009 Field of the Year in the Schools/Parks Sporting Grounds category.

Opened in September 2007 with a 3,000-seat game-day capacity, Infinity Park is one of the only rugby-specific stadiums in the United States and is operated by the City of Glendale. A storm dumped more than 2 inches of rain in 30 minutes last summer during which construction activities around the park had placed filter socks on all the storm drains surrounding the park.

"Approximately three acre feet of water couldn't enter the storm drains and so built up behind a silt fence and "green" screen chain link fence, both of which soon collapsed," recalls Bertrand. "A wall of water went into our parking lot, and then into the stadium and on to the pitch."

Quick work by the Public Works crew greatly minimized the damage, though water did begin to build to a depth of 2 feet on the pitch surface. Public Works took the lids off of drain clean outs on three corners of the surface, Bertrand said.

After the drains were open, brooms were used to push the water toward the clean outs. This helped to keep dirt and debris in the water suspended until the water cleared the drain. After the water was removed, roughly 3 hours after the flood began, a Toro Pro Sweep machine was used to remove all large debris like wood chips, soda cans, leaves, trash, etc., and most fine soil settled around the outer edge of the surface since the pitch is crowned with a 0.5% slope.

Core aeration and sweeping did remove some of this soil, Bertrand said, but a challenge remained with this layer of fine soil

Infinity Park is one of the only rugby-specific stadiums in the United States and is operated by the City of Glendale.

since it greatly reduced the pitch's ability to drain, and allow oxygen and water to the roots.

Public Works crews are not directly assigned to assist Bertrand with pitch maintenance but he says they are 100% dedicated to the pitch and his efforts. This group includes Bob Taylor, director of public works, Gene Hazlett, Vickie Allen, Kevin Brown, Jody Yonke, Diego Aguilar, David Frawley, Paul Herrera and Matt McCord.

RUGBY MAINTENANCE CHALLENGES

Bertrand says the unique challenge of managing a rugby pitch is the culture of the sport. "It is an all-inclusive sport, where the unwritten rule is all players who show up to play get to play that day," said Bertrand. "After a match, teams will take a short break and then begin playing a "B-side" match, featuring players who didn't play in the "A-side" earlier contest.

"If there are still players who haven't played, there's a "C-side" match and that will go on until everyone has played a match. So before I understood this, I would have the pitch ready for two matches and five or six might be played," he said. "For example, I would make two buckets of divot mix for two matches played but now I base it on hours played. If matches last 8 hours, I make up eight buckets of mix. I still struggle with scheduling individuals to clean up after games but I do have a much better feel for how late the games will go on match day."

SportsTurf: How has the recession affected your operations?

Bertrand: There have been two effects of the recession on my operations. First are the changes in vendors operations and staff. The sales people I have worked with in the past to buy seed, fertilizer, and equipment, etc. have been downsized, or are now covering a larger sales territory. This is difficult since in the past I have developed trust and rapport with sales people, but now they are gone, or they can't give me as much personal attention. The change in vendors operations is the biggest effect I have noticed.

The final impact of the recession is now there is a large and deep talent pool of available employees. From a hiring stand point it's great to have highly qualified candidates apply for open positions. For those in the job market, it is a tough situation. My advice to all the May college graduates is hang in there!

ST: What changes to your maintenance plans are you making this year, if any?

Bertrand: The biggest change I am going to make this year is to try and limit double cutting of the pitch. It is not a big change, but a small change that I can make to benefit the environment (I should save about 5 gallons of diesel fuel each week) and help keep costs down. I have found by making just a few, smaller changes in the maintenance program, they tend to work better and have chance of becoming ingrained into the day-to-day aspects of the program. I can actually see if the small changes are making a difference either good or bad. When you make changes in too many aspects of the maintenance program, it is tough to see what changes have an actual benefit (or degradation).

ST: What's the best piece of turf manage-

ment advice you have ever received?

Bertrand: The best turf management advice I ever received came from Troy Smith, CSFM, with the Denver Broncos, while we were sitting in Sky Harbor Airport waiting for the same flight after the last Phoenix STMA conference. We were discussing business on a very informal level, when the subject of synthetic fields came up. Troy's advice to me was not to "wrap your mind up in it." I took this advice as not to become personally involved in decisions largely out of my control. There are situations where I have total control of the decisions, others were I have no control. Often the decisions that are made in which we have no control over may cause us to dwell on that decision and to spiral into a pattern of negative thoughts. I now make it a point to openly accept decisions I have no control over and then make the best of the situation. Easier said than done, but at the end of the day, I am much better for it.

ST: How do you balance your work and personal time?

Bertrand: I don't. I believe in work hard, play hard. I work an awful lot, but don't play very much though I do make a point to spend time with my family every day. I have an incredibly understanding spouse (and thus children) who is very supportive of the job I do and the time it takes. I make an effort to let the children come to work with me on game days if they want to. This provides an opportunity for them to see how hard work pays off. They love walking the pitch with me, setting up for games. In return I make special events with family or friends just as much as a priority as the work demands. Just so long as I make anniversaries, birthdays, and major holidays I stay on the good side of life.

ST: If you could have any turf manager job in the country for a week, what would it be and why?

Bertrand: Geez, I can't go international with rugby? Maybe take over at Ellis Park Stadium in Johannesburg, South Africa, site of the inspirational movie "Invictus"? I'll take INVESCO Field at Mile High the week of June 13-19, if Ross Kurcab, CSFM would let me. On my pitch that week we will be recovering from the Churchill Cup pool play, the Super League national championship, Club championships, and College All-stars. All the games are intermixed and overlap, so there is a lot of play on my pitch the 2 weeks before that week. Recovery weeks are especially hard since you have been grinding hard hours to get the games in, but recovery week is when the surface really needs your attention and effort. I'd take INVESCO field that week, since the U2 concert will have just ended and they will be pulling up the flooring, cleaning up, etc. Yes, it will be a recovery week for the crew at INVESCO too, but when you use flooring you get a real chance to see first-hand what the plant will and won't recover from. Plus, I'd like to see first-hand how Ross, Cody Freeman and crew will handle the reconditioning with the Desso GrassMaster surface. Knowing Ross, there will be a cool PowerPoint presentation coming in 2011.

ST: What if any changes were made after the flash flood to try and prevent another?

Bertrand: The biggest change was filling in the parking lot next to the stadium with 12,000 cubic yards of dirt, then vacating the street next to the parking lot and filling that with another 12,000 cubic yards of dirt. This raised the elevation about 14 feet around the stadium. (I have a tremendous amount of pull with the Mayor; just kidding!) The reality is the dirt was brought in to complete a 16-acre community park and open space addition to the stadium (scheduled for completion late this month). The construction activity last year and subsequently the run off controls installed in the catch basins (filter socks) surrounding the stadium greatly attributed to the flood. I am confident once the construction is finished, another major flooding scenario will be mitigated. ■