

TEMPORARY, REUSABLE DRAINAGE LAYER INSTALLED IN 2 DAYS



Reliant Stadium was site of a series of international soccer matches before this NFL season began. These matches, as US turf managers are finding out, can be played only on natural grass. For one game the crew only had 6 days to put in a suitable replacement. Installation included an 86,000-square foot ring and grid drainage layer, called Draincore2, which was installed in 2 days.

"We had to move extremely quickly and this was the only option," says Mike Courter of Airfield Systems, LLC, designers of the temporary grass field at Reliant Stadium. "They [Reliant Stadium] needed something that would live up to FIFA (Federal Internationale de Football Association) standards, but could be installed in a flash."

Colorado State has tested this product to carry 58 gallons per minute of water per foot width.

In comparison, a pipe and gravel drainage system, or french drain, can carry 18-24 gpm per foot width," says Kevin Wright, president of Invisible Structures, Inc., manufacturers of the product.

Draincore2 is made from recycled polyethylene and injection molded into a system of 1-inch hollow rings connected by a grid. At Reliant, the existing concrete floor with drainage lines was covered with the Draincore2, then covered with a permeable geotextile fabric layer, and topped of with professional sod. The sod seams were filled with sand, the sod was washed, and the field was ready for its first match.

Turf provider Turfgrass America leased the Draincore2 system for the project.

A day after the games the entire system was taken down and removed and Reliant Stadium's concrete floor was cleared. Airfield Systems, LLC is seeking a permanent home for the Draincore2.

This article was supplied by Invisible Structures Inc., 800-233-1510.

BY KURT STAAL

CAMBRIDGE DRAINAGE OPTION EXPLAINED

Over the past 20 years or so many sports fields have been planned without giving proper consideration to how well they will drain. In most cases with the exception of sand base construction not enough thought or money had been invested, and too much faith put in a simple crown.

As a result, our company and many others now provide a way to protect playability during the wettest of conditions using the Cambridge Drainage System. Special equipment means we install an entire drainage system on an existing natural turf field with minimum disturbance and recovery in as little as 2 weeks.

On a typical soccer or football field this system begins with manifold installed along each sideline then discharged into the storm water system or retention basins. Solid PVC pipe is used for the manifold so that you can attach a suction pump or an air pump to either draw water from the system or introduce air into the growing medium.

Step two is to install the Mini Sports field drains. These are typically placed on 5-foot centers crossing the field and connected to the main collector or manifold. These drains are excavated with specialized



equipment that elevates the spoils into a dump trailer traveling alongside the trencher. Special corrugated perforated plastic pipe is installed at the bottom of the trench, then filled with pea gravel and then USGA sand, to the surface.

This back-filling phase compacts the sand fill three times to prevent any future settling. Step 3 is to install the Sand Injection 24 inches on center 9 inches deep x 1 inch wide from goal to goal over the entire field. Step 4 we install the Hydraulically Linked Surface and then sprig, sod or seed.

Mike Bunting from UNC Chapel Hill said, "Our football program has two grass practice fields. Over the last few years the amount of water needed to render the fields unplayable has steadily decreased. During one football season we were required to move 44 percent of our scheduled practices to an Astroturf field because our grass fields were too wet."

"After installing this system, the next season we were required to practice on our Astroturf field for less than 5 percent of our practices."

ST

Kurt Staal is with Sportsturf Services, Inc., 828-687-2350.

Players name favorite turf

Results of a poll in Sports Illustrated showed that 23.2 percent of the players who responded chose Dodger Stadium as having the best-quality playing field. Edison Field, home to the Anaheim Angels, received the second-highest number of votes with 11.2 percent. (Can't beat that SoCal climate!)

The fields at Kauffman Stadium in Kansas City and Bank One Ballpark in Phoenix (pictured) together received 10.1 percent of the votes and were ranked fifth and sixth, respectively, in the SI poll. All feature West Coast Turf products.

Eric Hansen, turf manager of Dodger Stadium, cites his sod as one of several features that helped Dodger Stadium earn top field honors. Hansen says, "Quite often an event is scheduled shortly after installation, so the service and quality of sod we receive is critical."

A tight-knit turf, along with grass that Dodger Stadium's grounds crew keeps cut at between

9/16 to 3/4 of an inch, are keys to providing a player-pleasing surface, Hansen says.

At Bank One Ballpark, the Diamondbacks' organization re-sods the field at the start of every baseball season with Bull's-Eye Bermuda sod, which is overseeded with Kentucky bluegrass and perennial ryegrass.

"Players seem to like its density and playability," says Grant Trenbeath, Bank One Ballpark's head groundskeeper. "Batted balls don't zigzag or follow mowing patterns, which would obviously make fielding more of a challenge."

Challenges, however, do exist for Trenbeath and his crew in managing the turf throughout the year. With its retractable roof, BOB's field is often



Photo by AP Worldwide Photos

exposed to rash temperature changes in a matter of a few moments. And on top of the Diamondbacks' 81 home games, numerous concerts, sporting events and shows are held on the field every year.

But a 3 1/2-acre sod farm with sod specifically for the field nearby helps ensure that healthy, tight-knit sod will be installed each year, Trenbeath says.

BY MARK LESLIE

HURRICANE ISABEL CAN'T SHUT DOWN HOKIES

Shortly after host Virginia Tech and Texas A&M played football despite one-inch-an-hour rains from nearby Hurricane Isabel, turfgrass professor Dr. Eric Ervin declared the new tray-drainage playing surface at Lane Stadium could have withstood a torrential 10 inches an hour without impacting play. With a root-zone mix of 90-percent sand and 10-percent peat, "It was lab-tested to move 15 inches an hour infiltration rate," he said.

"The system costs more," he added, "but the ability to have a high-performance, dry, firm playing surface under hurricane conditions in that one game paid for itself."

"I was shocked, almost, that the footing stayed so good with so much rain coming in so short a time," said head football coach Frank Beamer. "There was no bad footing. [Hokie running back] Kevin Jones gained 170 yards and you can't do that on a bad field."

Beamer and assistant AD Tom Gabbard agreed the field has literally paid for itself. They speak from experi-

ence. Virginia Tech's season-opening game against Georgia Tech in 2000, due to be nationally televised on ESPN, was canceled by a rainstorm that made the old field unplayable. The stands were full with more than 60,000 would-be spectators, the ESPN cameras were turned off and Virginia Tech lost \$750,000 in revenue.

Vowing to never cancel a game again, school officials choose a GreenTech field, which was first pioneered by Dr. John "Trey" Rogers at Michigan State for the World Cup games at the Pontiac Silverdome in Detroit.

Today, GreenTech, a Richmond, VA, firm, has modified and improved the technology, replacing heavy hexagonal steel modules, or trays, with lighter, polyethylene modules that are smaller at 4-by-4 feet square. The steel hexagons weighed 3,300 pounds when loaded with rootzone, while the new trays weigh 800 to 1,110 pounds.

Gabbard explained how the tray-drainage system

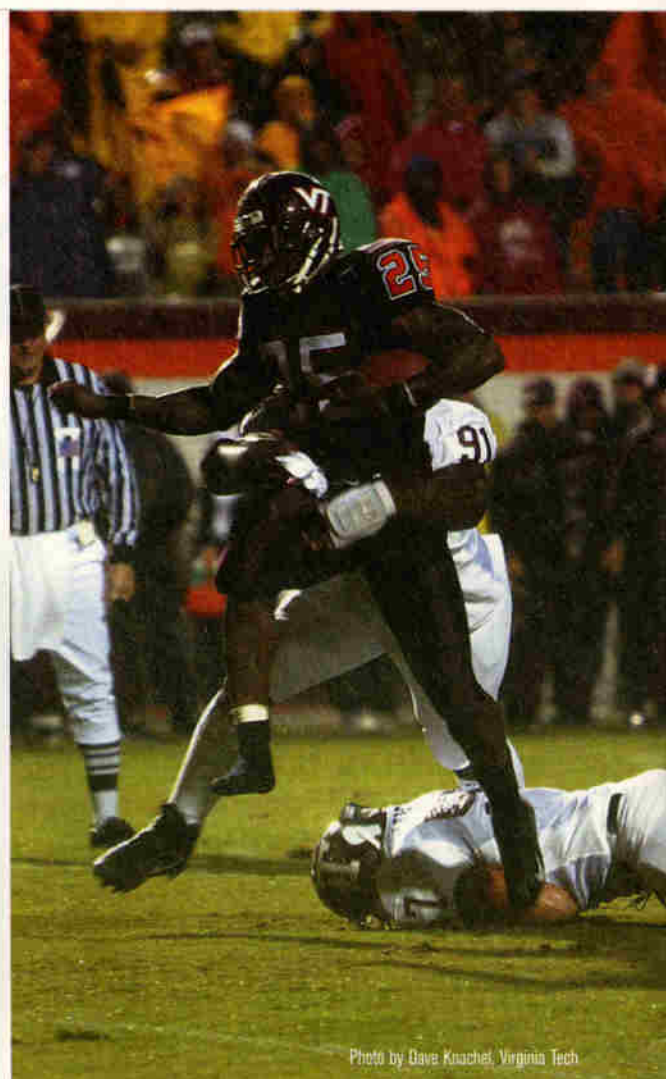


Photo by Dave Knachel, Virginia Tech

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canceled out the effects of Hurricane Isabel.

The old field was stripped of grass and covered with an asphalt pad, with 22 air inlets and a trench drain along each sideline. The trays, filled with rootzone mix and sporting mature Bermudagrass, were placed, like tiles, on top of the asphalt. The modules have legs that create a 3-inch space between the asphalt and trays.

With the 3-inch space between asphalt and trays, said Gabbard, "In essence, we could have a 3-inch lake underneath the entire surface of the field and the grass would still be dry."

Grounds manager Casey Underwood, knowing the hurricane was coming, used an Advanced Aeration Systems unit, a giant machine that can blow air into the rootzone, or suck water out of it was hooked to the vents, to prepare for the downpour ahead of time. The week of the game, Underwood's crew hooked up the vacuum system and reduced the moisture content in the soil from 28 or 29 percent to 4 percent and waited for the rain.

The rain came and the game went on. "The players didn't even get their uniforms muddy," exclaimed Virginia Tech Sports Information Director Dave Smith.

As the game wore on, ESPN commentators marveled at how dry the gridiron remained through-out play in the harsh elements.

ST

Mark Leslie is a free lance writer.

DRAINAGE OPTIONS

Colbond manufactures various drainage options for natural and synthetic turf fields. Enkaturf drain is a 12-in. wide strip drain consisting of a 1-in. thick nylon core of fused, entangled filaments completely encased in a nonwoven geotextile fabric, which means no need for perforated pipe or installing a larger diameter drain with surrounding aggregate.

Colbond/800-365-7391

For information, circle 079 or

see www.oners.ims.ca/2086-079



SURFACE DRAINAGE

QwikDRAIN System is a surface drainage system for native and modified native fields. This system provides drainage so intense the surplus water bypasses the soil.

QwikDRAIN/866-567-6872

For information, circle 078 or

see www.oners.ims.ca/2086-078



WATER SOLUBLE PACKAGING

Profile Products has new water soluble packaging for its dye and tackifier products that is meant to help make it easier for users to add the correct amount of hydraulic mulch accessories into the tank. ConTack tackifiers will help maximize stabilization of mulch and straw; Tacking Agent III will better help reduce soil erosion and water runoff immediately after hydro-seeding; and SilkColor will help ensure accurate and smooth mulch application as the only dye marker with a slickifier.

Profile Products/847-215-3466

For information, circle 086 or

see www.oners.ims.ca/2086-086

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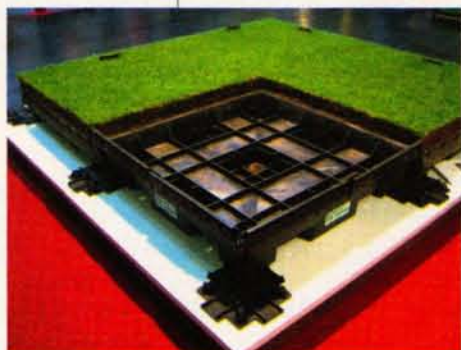
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TRAY DRAINAGE

GreenTech module, 46 in. square and 8 1/2 in. deep, high-density polyethylene plastic container, in effect replace traditional drainage systems. On the bottom of each module, channels accommodate forklift arms on all four sides (pallet channels), and numerous small holes enable drainage and rootzone airflow capacity.

GreenTech/804-965-0026

For information, circle 077 or see www.oners.ims.ca/2086-077

SUBSURFACE DRAINAGE

Fielder's Choice just completed a three-field renovation at Mayde Creek High School in Katy, TX. The project consisted of two practice fields and one game field. Pictured is the subsurface drainage system installed in one of the practice fields. The company puts perforated pipe in trenches with a filter sock, and also adds a special rootzone sand mixture to create a base that will provide the drainage needed to make full use of the system.

Fielder's Choice/713-466-9200

For information, circle 080 or see www.oners.ims.ca/2086-080



TRENCH DRAINS

ACO Sport trench drains provide a continuous line of drainage between the track and playing field to act as a barrier and prevent track run-off from draining onto the field. Playing field drainage systems generally cannot cope with large run-off volumes from adjacent running track surfaces, often resulting in flooding at the perimeter.

ACO Sport/440-285-7000

For information, circle 081 or see www.oners.ims.ca/2086-0801



RED CLAY CONDITIONER

TURFACE Pro League Red is the first and only patented red calcined clay conditioner. It combines a rich red color with proven infield conditioning benefits, and

requires about half the tonnage versus aggregates to obtain adequate coverage.

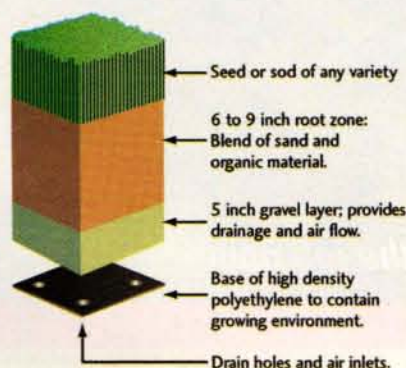
Profile Products/847-215-3470

For information, circle 091 or see www.oners.ims.ca/2086-091



Benefits of GreenTech ITM System:

- CONTROL-Temperature, moisture and gas levels for optimal environment to sustain healthy turf
- DRAINAGE/AIR FLOW - 40 times the drainage and air flow capacity of traditional field designs
- TRANSPORTABILITY - Construct the ITM System at remote location so grass matures while stadium being built
- TURF REPLACEMENT - No need to resod. Remove worn areas and replace with mature turf

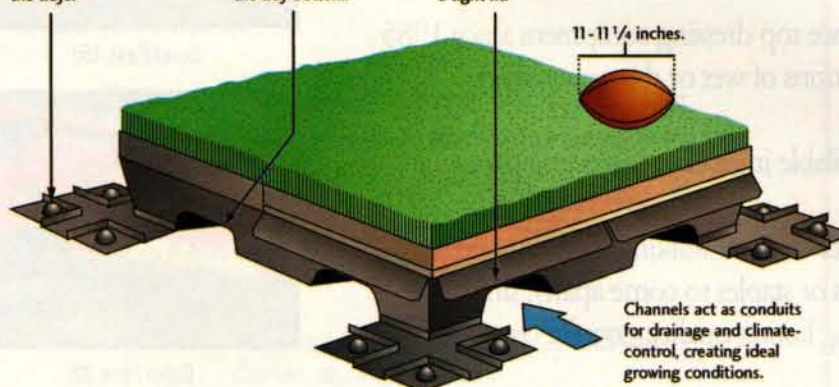


HOW IT WORKS:

A guide system, (foot locator pad) assures the proper position of the trays.

A forklift moves the section, securing it through channels in the tray bottom.

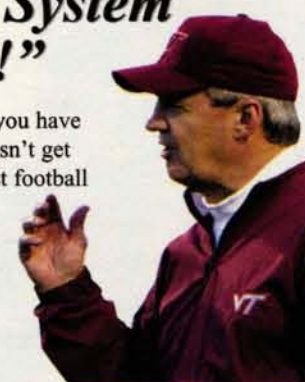
Tray wall folds down, joining neighboring turf sections to create a tight fit.



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For information, circle 089 or see www.oners.ims.ca/2086-089

ELECTRICAL/IRRIGATION CATALOG

King Innovation, formerly King Safety Products, has a new catalog that details products including DryConn Waterproof Connectors, Proline, Safetyguard, and Easyguard connectors, irrigation products, hand tools, and electrical accessories. King Innovation/800-633-0232
For information, circle 088 or see www.oners.ims.ca/2086-088



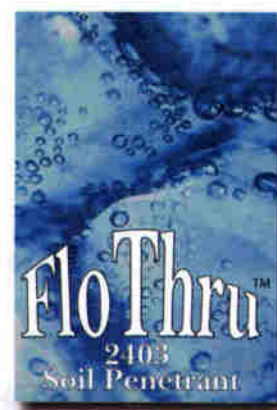
SAFE PAINTS

World Class Athletic Surfaces manufactures quality bulk and aerosol paints and custom stencils. For athletic programs that cannot find specific colors, World Class will create a custom color. Company supplies custom color paints and coatings for field marking, traffic, goalposts, non-slip floors, and artificial turf surfaces.

World Class Athletic Surfaces/800-748-9649
For information, circle 090 or see www.oners.ims.ca/2086-090

SOIL PENETRANT

JADA Corp. has introduced FloThru 2403 soil penetrant that reduces water loss from runoff and evaporation, evenly distributes water, and decreases channeling of water through soil profile. This can reduce your water and energy costs, says the company. FloThru can also be mixed with most surface applied chemicals. JADA Corp./973-762-8002
For information, circle 087 or see www.oners.ims.ca/2086-087



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Turf-Seed, Inc./800-247-6910

For information, circle 085 or

see www.oners.ims.ca/2086-085



GREENS AERATION

Advanced Aer has improved its line of subsurface greens aeration products (previously known as Soil Air Technology). This automated sensor-based permanent system attaches to the network of drain tiles under a putting green and continually monitors oxygen, moisture, and temps in the root zone.

Advanced Aer/561-625-3301

For information, circle 083 or

see www.oners.ims.ca/2086-083

GOLF BUILDER MOVES IN TO PARK & REC

Landscapes Unlimited has made the natural leap into recreational field and parks development. One of the world's largest builders of golf courses, Landscapes in June finished field renovation of Scottsdale Stadium; the training facility for the San Francisco Giants, and in late-summer Baylor University's 15-acre intramural fields.

The company's Construction Group's Sports Development Group is also targeting parks and recreational open spaces, including vertical construction. Landscapes Unlimited/402-423-6653
For information, circle 082 or
see www.oners.ims.ca/2086-082



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