

# The Power Of One.



Shift your business to the independent distributor members of PrimeraTurf® and tap into the power of a wide range of high-quality PrimeraOne® products.

You'll find the products and the name of the distributor in your area at [primeraone.com](http://primeraone.com).



GOLF GROUP

THE FIRST YOU MEET

Integration • Specialty • Landscape • Equipment

PRIMERA TURF • TURF MANAGEMENT



cnose and summer patch. His spray program for greens is every 10 to 14 days with Banner, Daconil and Medallion; in fairways he sprays Curalan, Daconil and Banner every 14 days.

In July, Fries uses Headway on greens, tees and fairways, and is trying to get away from DMIs or go with lower rates or combo products.

"This year, I'm trying to avoid DMIs," he says. "The weather will dictate whether I will use DMIs or not. If it's in the mid to low 70s, I might sneak in a high rate of a DMI. I won't abandon DMIs altogether this year because I'm using the products we have in stock. Next year, I might get rid of the DMIs altogether. I'll make the purchasing decisions for next year, and Triton, Tournay and Trinity are some DMIs I'll look at."

#### OTHER CHOICES

Keith Fellenstein, superintendent of the Sabot Course at 36-hole Hermitage Country Club in Manakin Sabot, Va., manages L-93 bentgrass greens and Valmont bermudagrass rough, tees and fairways. Pythium root dysfunction,

fairy ring and take-all patch are his top three diseases. On a preventive fungicide program, Fellenstein rotates Signature and Banol, getting as much as 28 days of control based on the weather. He also uses chlorothalonil, iprodione and thiophanate-methyl.

Fellenstein doesn't have much dollar spot and brown patch, hence, not as strong of a need to use DMIs.

"I'm not sure if it's because L-93 is more resistant to those diseases or it's my fertility program," he says. "I'm not sure why."

However, because fairy ring is Fellenstein's No. 2 disease, he uses Bayleton as a preventive application in the spring and ProStar as a curative one.

In the past, he has used Banner preventively for dollar spot control, but didn't apply it this summer.

"There are so many other options for what I'm targeting, with the exception of fairy ring," he says. "I'd rather go with a less risky fungicide. If I'm going after dollar spot and brown patch, I'll use chlorothalonil, fipronil and thiophanate-methyl most times. I get at

least seven days of coverage and as many as 21 days."

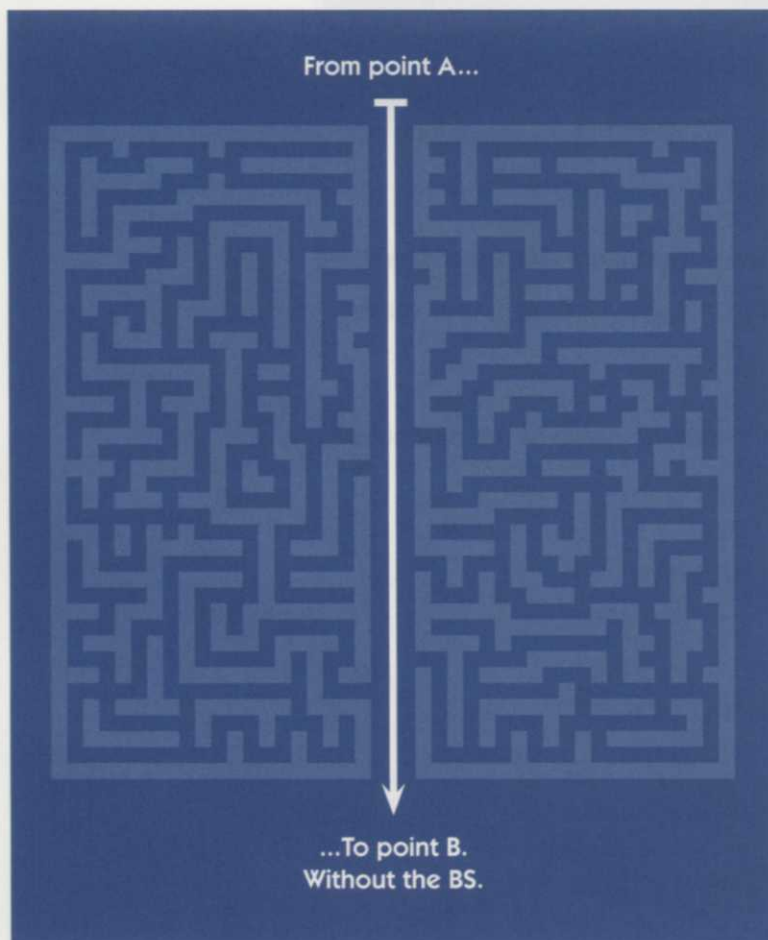
Overall, Fellenstein recommends superintendents be careful about how much fungicide they apply and when. Fellenstein keeps a good rotation and periodically introduces a new product.

"The key is during high-stress periods that can set the bentgrass back," he says.

Academics and superintendents are the reasons Fellenstein knows about the growth-regulator effect of DMIs with PGR use.

"People growing *Poa*/bentgrass turf said DMIs were very harsh on the *Poa* – that's where most of the cautionary tales came from," he says. "We work so hard to make it though the summer, we don't like to take chances. There are so many options/alternatives for treatments. I don't have a problem with DMIs, but I'd caution anyone using DMIs in the summer. Test before going out with any application." **GCI**

*John Walsh is a freelance writer based in Cleveland.*



#### Horizon's Golf Group can simplify any construction project.

There's no room for wrong turns or dead ends when building a golf course, so trust the experienced professionals at Horizon to help you get the job done right—the first time. From initial design through all phases of construction, Horizon's Golf Group can provide technical support and valuable input for agronomy issues, water conservation, greens management, ongoing course maintenance and more. So call Horizon, and get all the products, materials and straight talk you need, from start to finish.



THE EDGE YOU NEED.

Irrigation • Specialty • Landscape • Equipment

1.800.PVC.TURF • [www.horizononline.com](http://www.horizononline.com)

© 2009 Horizon Distributors, Inc. All Rights Reserved.



**RESERVOIR 50**  
Soil Hydro-Logics

**RESERVOIR**  
DG  
Soil Hydro-Logics

## Increase Water-use Efficiency & Save Irrigation Expenses with Reservoir!

Here's the bottom line. You can increase water-use efficiency by over 20% and save related irrigated expenses with the Soil Hydro-Logics technology in Reservoir DG and Reservoir 50.

Reservoir DG is a dry granular product that can be broadcast or spot applied. It is an easy and labor-saving way to target LDS areas for a healthy ROI.

Reservoir 50 is a 50% active liquid formulation that is injected into irrigation equipment.

Both products increase soil porosity and water infiltration. This reduces evapotranspiration and helps reduce nutrient and pesticide leaching. The products are active in the soil for 3-5 weeks and then bio-degrade into natural materials.

For more information, contact your local Helena representative.



**Reservoir 50 is designed for injection into irrigation systems.**



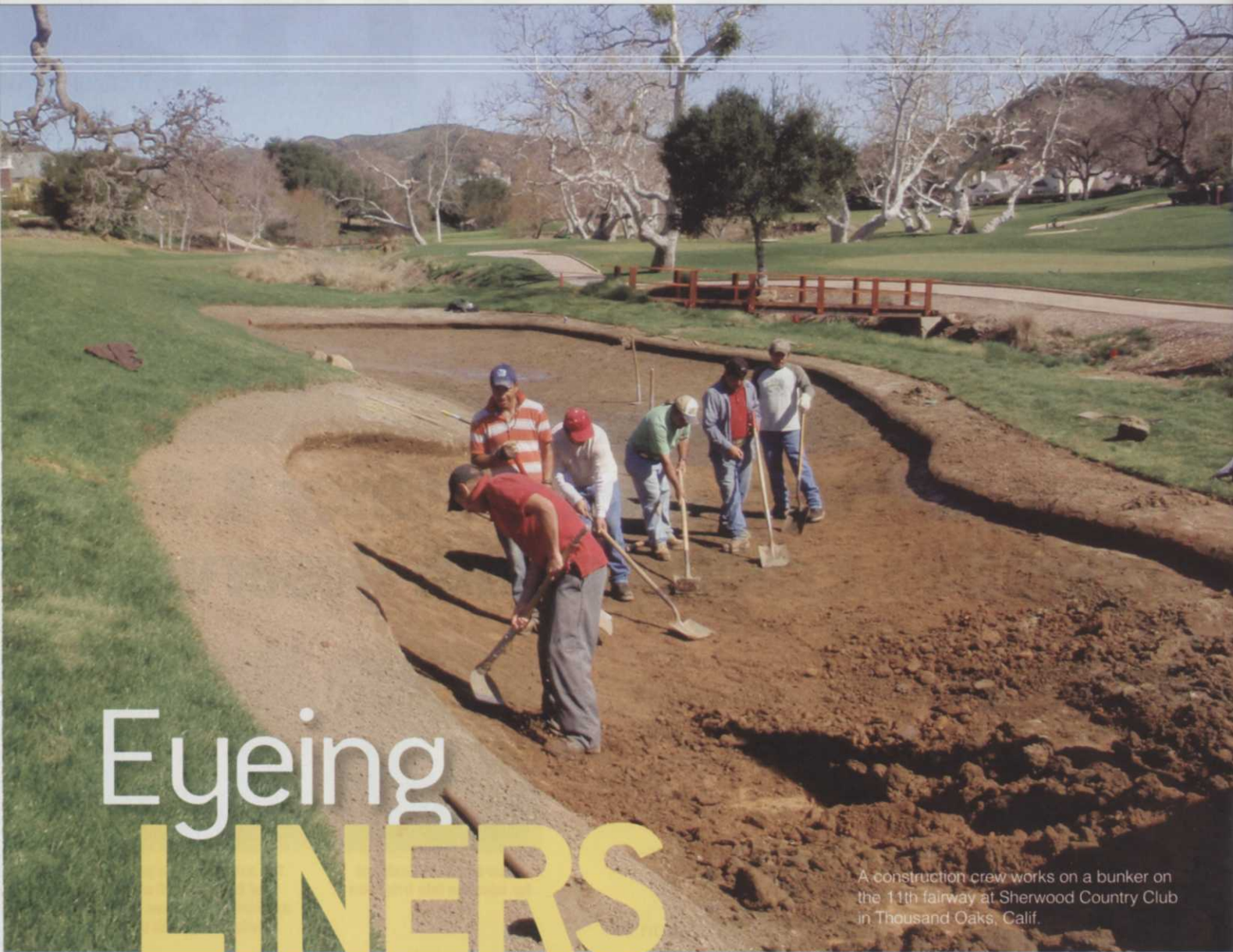
**The extremely fine particles of Reservoir DG allow application to greens without interfering with play.**

- **Increases irrigation efficiency, reduces water usage by over 20%**
- **Improves soil porosity & water infiltration**
- **Remains active for 3 - 5 weeks**
- **Easy to target LDS with Reservoir DG (Dry Granules)**
- **Healthy ROI by saving water, electricity & labor costs**
- **Reduces leaching of nutrients and pesticides**
- **Bio-degrades into natural materials**

RESERVOIR and People...Products...Knowledge... are registered trademarks and Soil Hydro-Logics is a trademark of Helena Holding Company. Always read and follow label directions. © 2009 Helena Holding Company.

**HELENA** People...Products...Knowledge...

Helena Chemical Company • 7664 Moore Rd • Memphis, TN 38120 • 901-752-4414 • [www.helenachemical.com](http://www.helenachemical.com)



# Eyeing LINERS

A construction crew works on a bunker on the 11th fairway at Sherwood Country Club in Thousand Oaks, Calif.

Superintendents look to reduce maintenance labor when weighing bunker liner options. BY MARISA PALMIERI

Superintendents pursuing bunker renovations these days have much more of a selection when it comes to liners than did their counterparts of even a decade ago.

When they select liners – whether it’s synthetic fabric or sprayed-on liquid or concrete material – superintendents consider several factors. Bunker design, cost, longevity and future maintenance needs are at the top of their lists.

“No. 1 is what type of architecture you’re dealing with,” says Brian Anderson, CGCS, at Nemacolin Woodlands Resort in Farmington,

Pa. “No. 2 is the sand and the base, like if you’re trying to keep white sand from being contaminated by the base soil. But architecture will dictate a lot.”

Sean Dyer, golf course maintenance director at Sherwood Country Club in Thousand Oaks, Calif., looks at lifespan, playing conditions and maintenance.

“How is it going to hold up over the years?” Dyer says. “How will it affect playability? How will it keep my contamination down, drain the water and keep my sand on the face?”

## IN FAVOR OF FABRIC

Nine years ago Robert Stone opted for fabric liners for the 70-some greens bunkers at The Honors Course in Ooltewah, Tenn.

The renovation was done in-house for about \$50,000, including liner sand and labor. It took about three months.

At the time, fabric liners were one of the only options, Stone says, noting he would have liked to renovate all of the bunkers using the Billy Bunker method (named for former Augusta National superintendent, Billy Fuller).

“That’s the best way to do them, but it’s

# Introducing the Jacobsen® R-311™ Wide Area Rotary Mower



## Lower your cost of ownership without lowering your expectations.

The industry expects Jacobsen® to routinely elevate mower reliability and cutting performance standards. The R-311™ doesn't disappoint. There's ample power and an 11-foot cutting width to mow more than 10 acres per hour. This professional-grade, cost-effective mowing solution is proven to take on the toughest commercial applications, while maximizing fuel efficiency, minimizing downtime and improving productivity. With input from owners, technicians and operators, the R-311 exceeds expectations from every perspective.



*Professional-grade systems and components, along with fewer wear parts reduces downtime and maintenance costs.*



*Beveled blades, heavy-duty hydraulic and drive train systems effectively integrate to optimize fuel efficiency.*



*Controls are intuitive for ease-of-use and the cockpit is ergonomically designed to enhance operator productivity.*

For more information about the R-311™ Wide Area Rotary Mower call 1.888.922.turf or visit [www.jacobsen.com](http://www.jacobsen.com)



The Official Turf Equipment Supplier to The PGA of America and  
The Exclusive Turf Equipment Supplier to PGA Golf Properties.  
© April 2009, Jacobsen, A Textron Company.

**JACOBSEN**  
A Textron Company

**When Performance Matters.™**

# YOUR ONE AND ONLY.

## KPHITE 7LP

The *only* Phosphite that carries both a Fungicide and Bactericide Label.

### THE KPHITE ADVANTAGE

- Special formulation of the Phosphite allows it to last longest in the fungicidal form.
- KPhite has the Highest Active Ingredient at 56%. Others are 44%-53%.
- Wide range of rates from 2 oz. on fairways to 6 oz. curative.
- KPhite is labeled for control and prevention of Dollar Spot, Pythium, Anthracnose, and Brown Patch.

**KPHITE® 7LP**  
SYSTEMIC FUNGICIDE EPA 73806-1

www.kphite.com  
800-343-7775  
407-889-7755

www.golfcourseindustry.com/readerservice - #33

## BUNKER RENOVATION

more labor intensive and costly," he says. "That's why a lot of these other products have come along."

Because Billy Bunkers weren't in Stone's budget, he chose Sand daM, which is made of non-biodegradable polyester and synthetic binders.

"Overall, it's done well," Stone says, adding that there have been some problems with fabric sticking up out of the sand.

"You have so many things to do and sometimes you get a little low on sand and someone may hit the fabric, so you'll see a piece that sticks up."

Stone's team rakes all bunkers by hand, so mechanical bunker rakes don't cause problems – just golfers do. He tries to mitigate this problem by maintaining 3- to 4-inch sand depths.

"Checking your sand depths is as important as your other routine jobs," he says. "It's not a job that can get put on the back burner."

Stone expects the liners to make it to 20 years. "We're just under 10, and we should make it as long as we keep our sand depths."

### SPRAY-ON ADVOCATES

Being a stop on the PGA Tour from 2003 to 2006, Nemacon Woodlands agreed in 2002 to redo its 50-plus bunkers so they drained better and featured pure white sand with better playability.

Anderson led the project that included completely renovating 6.6 acres of bunkers – all new drainage, liners and sand. Aspen Corp. was the contractor on the \$1 million project.

When it came to selecting a bunker liner, Anderson, who's dealing with a native clay soil, was focused installing a product that would keep contaminants from coming up and plugging the drainage, keep the filtration rate at its peak and maintain bright white sand. Washouts aren't a major concern at Nemacon Woodlands because of the bunkers' flat bases.

Though washout cleanup wasn't a big concern for Anderson, maintenance was on his mind.

"I'd worked at a facility before where we had liners, and it was constant maintenance on them," he says. "The bunkers were highly flashed, so the sand would move, and we'd hit a staple or a golfer would hit a liner and/or a staple. We just didn't want to deal with that."

So after looking at several fabric options, Anderson chose Klingstone, which is a liquid-applied polyurethane-based barrier, despite its higher cost. Anderson estimates the liquid product was about double that of fabric options at the time.

"It was about 95 cents a square foot to pur-



An applicator sprays on the liquid silica stone Sportcrete material during Sherwood Country Club's bunker renovation.

chase and install vs. the fabrics that were about 45 cents to purchase and install," he says. The installation costs were kept down thanks to Nemacon's flat-bottomed bunkers, which required fewer men to install.

Seven years after installation, Anderson is pleased with his liner choice and expects the liner to hold up for at least another 11 years.

"In the long run, I believe it's helped us keep the bunker functioning like it was meant to when we constructed it. That is, draining properly and not contaminating the sand."

Sherwood's Dyer is fresh off completely renovating 51 bunkers. From February to April, contractor McDonald & Sons removed the old sand, installed new drainage, liner, new sand and subsurface drip irrigation from the bunker faces and resodded. Dyer chose Sportcrete's liquid silica stone liner, and the manufacturer did its own installation.

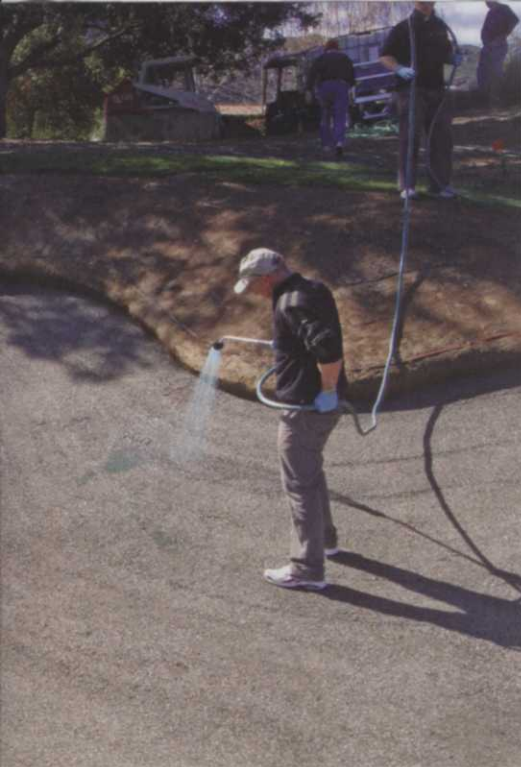
In addition to a quick installation, as Sherwood is home to the Tiger Woods-hosted Chevron World Challenge 2009 in early December, Dyer was looking for a liner that would save him labor.

"Before, we'd have at least 12 hours of work just to get the water out of the bunkers after a rain," he says. "We'd have every pump in the shop pumping out the bunkers and cleaning up the contamination."

When considering bunker liners, Dyer priced out fabric options but never really considered them.

"I've used them at two different construction projects and they both peeled up very easily within a year or two," he says. "The mechanical bunker rake always finds it, and it's kind of a nightmare."

The amount of staples needed were a concern



for Dyer, too, because of their nature to pop up due to freeze/thaw cycles.

"Even in California, we frost four to five times a week in the wintertime," he says.

Sherwood's bunker renovation cost about

\$585,000, and he says the liner was about \$2 per square foot installed. The fabric options compared at about 40 cents to 50 cents a square foot installed. Dyer sold the Sportcrete by demonstrating what he'd save on labor.

"It's more expensive, but it pays for itself," he says. "It's guaranteed for five years, but considering just what it's saved me on labor in my small rain window, we'll see payback in that warranty period."

So far, Dyer's pleased. He saw his proof during installation after the first hole was complete and the course took on 3 inches of rain.

"We didn't have any sand displace and there was no water in the bunkers," he says. "By that point, I was still questioning like any superintendent would, but right there I had faith."

"I knew the drainage would work, but I was really surprised about how the liner kept the sand on the face," he says. "It sucks the water out quicker than the sand could move."

#### ON THE FENCE

Morristown, N.J.-based Morris Golf completed

a \$650,000 renovation of the 71 bunkers on Hamilton Farm Golf Club's championship golf course last March. Though it's a young golf course (construction began in 1999), it was time to renovate and bring in new sand for the steep-faced bunkers, which were originally lined with natural coco fiber liner, one of the only materials available a decade ago.

"Four or five years ago it deteriorated to just netting under the sand," says Patrick Husby, grounds superintendent for the Gladstone, N.J., club. "We have very steep-faced bunkers. With no liner, the sand washes straight down and erodes our native clay subgrade. The bunkers were contaminated to the point that it was nearly impossible to have a good hit out of them."

In addition to playability, maintenance was a concern.

"The washouts would be so bad previously that after an inch of rain over a one- or two-hour period I might have 15 to 20 men take an entire day to put the bunkers back together," he says. "It was nasty. That was part of the



**Because lush and green should describe your fairways, not your ponds.**

### AquaSpherePRO—Biodegradable

The AquaSpherePRO is an all natural solution to treat ponds and lakes on golf courses. It uses a blend of natural bacteria and enzymes to improve water quality, clarity and eliminate odor. The AquaSpherePRO is the natural alternative to harsh chemicals.

Be proactive, deploy the first AquaSpherePRO when your water temperatures are 45 degrees and repeat every 30 days for a clean and clear Healthy Pond.

**100% Natural, Safe and Effective.**



1401 Apache Drive | Pipestone, MN 56164  
Toll Free: 1-877-948-0303  
[www.bioverse.com](http://www.bioverse.com)

## BUNKER RENOVATION

reason the sand deteriorated so badly. There was no option but to remove so much of that silted material."

When selecting a liner, Husby went with a fabric material despite not being a fan of using staples. At the time, he felt like there were few other options.

The price per square foot (installed) was about \$1.75 for a SandMat product.

How's it holding up?

Husby has experienced some problems with the staples popping up out of the ground.

"Hammering staples back in is a maintenance headache," he says, noting the course's thick, red clay soil makes matters worse. "It's physically hard to do. Many are three-quarters of the way in and then bent over the rest of the way."

Keeping track of the tens of thousands of staples is a difficult task for the maintenance staff. Husby worries a golf club could catch on one, so his five-man bunker crew spends about an hour or an hour and a half a day pounding staples back in when they hand rake bunkers.



Installers lay down Sand Mat liner at Hamilton Farms Golf Club in Gladstone, N.J.

The liner edges are also becoming an issue, Husby says. When the edges are exposed they start to fray, which requires dedicating labor for trimming them. He sends a three-man crew around once a week.

"That's adding up to some considerable time – eight to 16 man-hours per week," he says. "It's become something we have to do that we didn't have to do before."

What does he like about the fabric liner? "My bunkers never wash out," he says. "I never really even have rivulets in the sand from rain coming down – and we probably had six inches of rain from May to the beginning of July this year."

As far as lifespan, Husby expects the liners to last five to seven years, which is what architects have told him to expect.

After Husby committed to fabric liners, he heard about Sportcrete from a peer who'd worked with the material overseas. Since he was already going to have all the bunkers shelled out, he decided to try Sportcrete on one of them.

"Even though we were already using fabric, we tried one to see how it would perform comparably," he says, noting he considered it a learning opportunity – Hamilton Farms also has an 18-hole executive course that may need liners down the line.

So Husby renovated one bunker with Sportcrete as an experiment for about \$2 per square foot.

Like his fabric-lined bunkers, the Sportcrete bunker also never washes out.

"I believe it's performing the same as our fabric liners as far as drainage, but it doesn't have staples, so that's an obvious benefit," Husby says. "But had we done Sportcrete on a global scale, I don't know if our steep bunkers could handle it."

What's his recommendation for other superintendents?

"I'd investigate, ask, talk to everyone I know about any alternate ways to line bunkers," he says. "Do your due diligence and don't think any idea is too silly to protect the club's investment and your reputation in that you can provide what you said you could provide when it comes to maintenance. No method is 100 percent perfect." **GC**



# No Water? No Sewer?

## No Problem.

The Clivus Multrum M54 Trailhead is an odorless composting toilet system with handicapped accessible bathroom structure. Ideal for mid-course, the Trailhead structure is available in single or double-stall configurations and a variety of finishes. And like all Clivus systems, the Trailhead is odorless and does not pollute.

Call Clivus today to learn more about why the Trailhead is the Natural Solution for your golf course restroom.



800-425-4887

www.clivusmultrum.com





## IT PAYS TO PLAY

Many of us entered the golf maintenance profession for specific reasons: to work outdoors, to recognize a sense of accomplishment through hard work, to be part of a team or for the love of the game. Yet, I'd wager that many of you enjoy the outdoors and the pursuit of agronomic objectives, yet unfortunately, have put playing the game low on your priority list.

Instead of watching Tiger, Lorena and their fellow professional tour counterparts showcase their talents on the plasma screen, we should take the opportunity to play. I'm not advocating heading to the first tee each afternoon, but rather using the game to enhance your position within your club and among fellow professional staff and membership.

Consider these reasons you should take out your clubs, invest the time and go enjoy this great sport we strive to protect, promote and preserve.

**1** Play to further the social and professional aspects of meeting with fellow golf course superintendents. Playing each week at one another's golf courses, while discussing agronomic concerns, ideas and philosophies, is a great learning experience. When possible, rotate the venue.

**2** Don't be bashful or intimidated by playing with your green chairperson, golf professional or even the club president. Remember, you are the leader on the golf course. You should be informing them what's best for the golf course; by playing the golf course, you become even more knowledgeable.

**3** Whether your golf course is a new design or a timeless classic, playing the course provides first-hand knowledge of the architect's original intentions. Armed with this perspective, you can better communicate the agenda for change, improvements or upgrades to the golf course.

**4** Each time you play, play from a different teeing ground to gain the perspective of what players of different abilities, gender and age experience when they step onto your golf course. The game is for everyone, not solely for those with low handicaps.

**5** Like it or not, your golf professional can be your greatest supporter or an adversary in the quest to deliver better playing conditions. Golf professionals can positively or negatively affect your agronomic agenda by explaining to members exactly what's happening on the golf course or why you're coring the greens again. Since golf professionals and their staffs are typically the first people members encounter when they arrive at the golf course, who better to have on your side?

**6** When you play, walk! What better way to review the performance of your staff, equipment, irrigation and learn the various aspects, microclimates and environments of the property? In my mind, golf is a "touchy and feely" sport. You must touch the earth to understand what it's communicating to you.

**7** If possible when you do play, take time to arrive at the golf course as if you are a member or guest. Drive through the main entrance, ride through the parking lot, drop your clubs and head to the practice range. Remember, many golfers perfect their flaws on the range. Often, the range is also the first impression golfers get when they come to play.

**8** Golf course maintenance is not limited to agronomics. Think like a golfer and take the time to see what they see. We spend too much time looking down at the ground. Take a 360-degree look around and notice what a non-agronomic person will see. What might not seem important to us may be very important to golfers at your course. Check the cart paths, the flower beds, the mulch, weeds, tee box accessories, water dispensers and other non-agronomic details.

**9** When playing you can check the condition of each feature of the golf course. You can review green speed, putting trueness, consistency and surface firmness. You can evaluate the daily golf course set up by your staff to avoid questionable hole locations, rough depth and bunker playing conditions by hitting shots. Unfortunately, bunkers have become a primary issue among those who play and require constant upkeep to please golfers. A veteran superintendent once told me he could do anything the members wanted to the golf course, but he could not affect their inability to hit a golf shot.

**10** When I ask golf course superintendents why they don't play occasionally the standard reply is, "I can't concentrate or enjoy myself because I see everything that's wrong with the golf course." This is one reason to play more. Remember, "Rome wasn't built in a day," and by seeing what's needed, you will stay ahead of the curve, your membership, boards, owners and customers. Realize you won't be able to fix everything all at once, but you get an idea of what's important and truly needs repairing, rebuilding, restoring, replanting and renovating. **GCI**



**Terry Buchen**, CGCS, MG, is president of Golf Agronomy International. He's a 41-year, life member of the GCSAA. He can be reached at 757-561-7777 or [terrybuchen@earthlink.net](mailto:terrybuchen@earthlink.net).

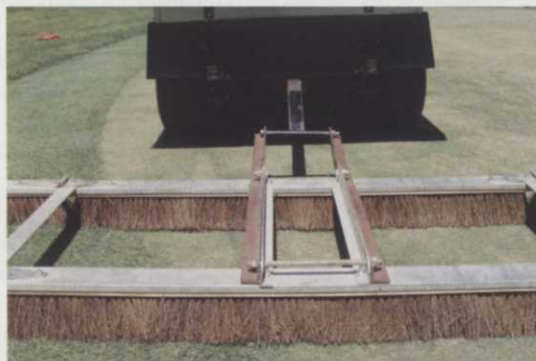
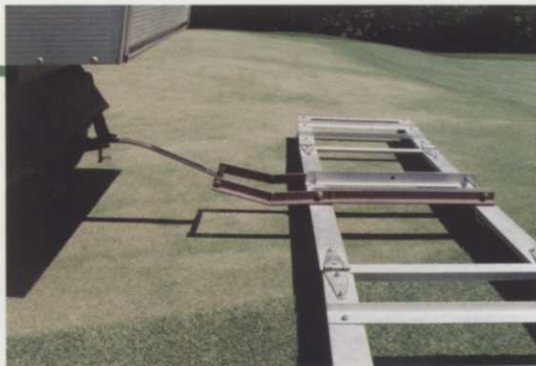


## Travels With Terry

Globetrotting consulting agronomist Terry Buchen visits many golf courses annually with his digital camera in hand. He shares helpful ideas relating to maintenance equipment from the golf course superintendents he visits – as well as a few ideas of his own – with timely photos and captions that explore the changing world of golf course management.

## WHAT A DRAG

A Standard Golf Co. topdressing drag mat model 52000 hitch with two model 52050 extensions was modified so it could be hooked up to the Club Car Carry All II trailer hitch. This modification was designed and built by Jeff Brothers, head mechanic at the Bald Peak Colony Club in Melvin Village, N.H., where Todd Pollini is the superintendent. A 1¼-inch angle iron (¼-inch thick) was bolted to the existing angle iron on the drag mat with one ½-inch diameter by 12-inch long bolt/lockwasher/nut on the back end and with two ½-inch diameter by 1¼-inch long bolts/lockwashers/nuts on the front end. The angle iron on the front end was cut into a V-shaped angle with a torch; it was then bent upwards into a 30-degree angle and welded in place. The black hitch that came with the drag mat was bolted to the end of the new angle iron with one ½-inch diameter by 12-inch long bolt/lockwasher/nut and then it was hooked up to the turf vehicle hitch with a hitch pin and clasp. The modification took about one hour and it cost about \$50 in materials.



## A CLEAN SWEEP

At the Butterfield Trails Golf Club in El Paso, Texas, head mechanic Joe Perez and assistant mechanic Nick Guillen designed and built a John Deere TC 125 Collection System that uses eight conventional-type street brooms. Instead of replacing the broom heads when the bristles wear down, a 1-inch by 1-inch thick piece of oak wood is bolted to the top end of the broom as a "spacer" to compensate for the wear of the bristles. This worthwhile practice allows a much longer life of the broom heads, which saves approximately \$100 per set of four – \$200 total in replacement costs. The reusable 1-inch by 1-inch "spacers" have two 3/8-inch diameter holes drilled in them and the ¼-inch diameter existing bolts are replaced with bolts 1 ½ inches longer. The materials cost about \$15 and the total labor time was approximately one hour. **GCI**

