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THE PUSH FOR Perfection

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Steve Wilson, Superintendent Pinehurst No. 3 and Pinehurst No. 5



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## THE PUSH FOR PERFECTION

Golfers and superintendents strive for the best possible course conditions.

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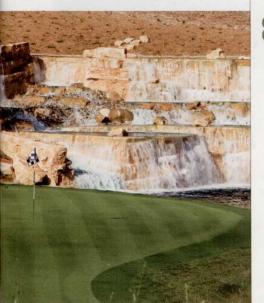
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As a golf course superintendent, do you work without a written agreement or contract? Visit the GCI home page to vote in this online poll.

#### **DIGITAL LIBRARY**

You can view last year's digital issues of Golf Course Industry any time you want on DVD. The digital library contains all the 2006 issues on one disc. The DVD is available at the online bookstore www.golfcourseindustry.com/store.





#### **EDITORIAL MISSION STATEMENT:**

Golf Course Industry reports on and analyzes the business of maintaining golf courses, as well as the broader business of golf course management. This includes three main areas: agronomy, business management and career development as it relates to golf course superintendents and those managers responsible for maintaining a golf course as an important asset. Golf Course Industry shows superintendents what's possible, helps them understand why it's important and tells them how to take the next step.



John Walsh Editor

## NO DETAIL TOO SMALL

lash back. I met Rich Gagnon a few years ago at a GCSAA seminar at the Golf Industry Show in Orlando. I asked about him and his career. He told me about his recent arrival at Segregansett Country Club in Taunton, Mass. We also chatted about industry trends including managing a maintenance budget.

These are how solid stories are unearthed and interesting ideas are publicized – that and carousing from bar to bar at the various conferences listening to attendees whisper, "Now, this is off the record of course," with a pat on the back and a crooked smile. But I digress.

Fast forward. Earlier this month, I received a call from Rich, with whom I hadn't spoken in quite some time. After recalling our first encounter, he proceeded to tell me about an unusual complaint from some club members. They wanted him to stop using "metal" flagsticks because balls bounce too hard off them and are less likely to fall into the hole. Rich was using three-quarter-inch tapered tournament flagsticks, but members wanted to return to using one-half-inch solid regulation fiberglass flagsticks.

Boy, I thought, how often is this actually happening that members would complain about it? Well, Rich said he thought the same thing when he first heard the complaint but then assured me of the number of consistently good golfers – damn near scratch – who belong to the club.

So, Rich decided to test three different flagsticks from the same manufacturer – a one-half-inch solid regulation fiberglass flagstick, a three-quarter-inch tapered tournament flagstick and a one-inch aluminum/fiberglass tournament flagstick. Well, lo and behold, the complaints were valid, but barely. Based on 5-percent difference in their favor, it appeared that for every 20 chip shots that hit the flagstick dead-on, one more fell into the cup with the one-half-inch flagstick compared to the three-quarter-inch tapered flagstick. It was a big enough difference to better a golfer score, and we all know how important that is. (For those wanting the name of the company who makes the flagsticks Rich tested, e-mail him at sccturf@hotmail.com because I don't want to be accused of favoring or promoting one manufacturer over another.)

After hearing about Rich's flagstick test, I was struck by the amount of time and consideration he put into something that I originally thought was just plain silly. So, in turn, I ask you to think about some of the member complaints at your club or course throughout the years. How many were a complete waste of time? How many actually turned out to be valid?

In this competitive industry, there are many capable superintendents who do above-average jobs. But it's the little things, such as testing different flagsticks to see how balls react after hitting them, that separate you from the pack. It's important for you to be receptive to new ideas at whatever stage you're at in your career.

Now, I don't know if Rich will get a raise because of this test or be appointed "superintendent for life," but I bet members at Segregansett will remember Rich's flagstick test for a while. As a result, I'm sure more of them will realize to what extent he will go to improve their golf experience.

This is one small example of the dedication to a job and a facility that many superintendents exhibit every day. It's the kind of dedication that earns respect and gratitude from those members or golfers who you thought would never give it to you. GCI

John Walsh

We would like to hear

#### from you. Please post any comments you have about this column on our message board, which is at www. golfcourseindustry. com/messageboard.

## GOLF COURSE

Serving the Business of Golf Course Management

Vol. 19 No. 8

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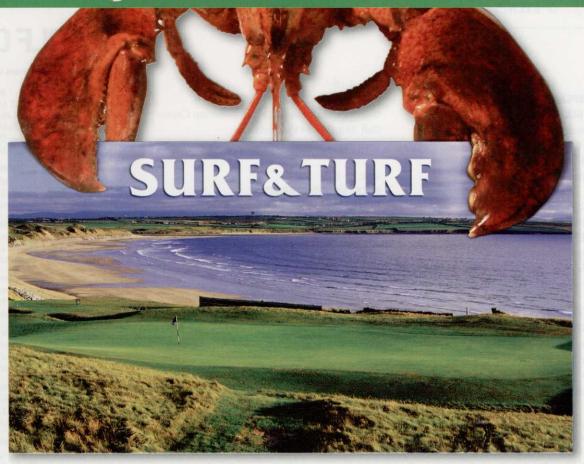
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Golf Course Industry is published 10 times per year by GIE Media, Inc., which also publishes:
Lawn & Landscape, Commercial Dealer,
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#### Oct. 16 - 18

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#### Jan. 8 - 10, 2008

## EASTERN PENNSYLVANIA TURF CONFERENCE AND TRADE SHOW

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#### Feb. 25 - 28, 2008

## WESTERN PENNSYLVANIA TURF CONFERENCE AND TRADE SHOW

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#### Feb. 29 - March 4, 2008

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Telus Convention Centre Calgary, Alberta Call 905-602-8873, or visit www.golfsupers.com.

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## Flying high: success amid the summer heat



Circling Raven director of golf David Christenson shows off some of the pro shop's wares. Photo: Circling Raven Golf Club his year, summer weather has presented a challenge for golf course operators in many regions of the country. Rounds generally decline when temperatures rise close to triple digits. Circling Raven Golf Club in Worley, Idaho, was faced with this dilemma. During July, the temperature exceeded 100 degrees F for two weeks straight.

"Every day, play basically just cut off at noon," says David Christenson, director of golf at the 18-hole course, which is adjacent to the Coeur d'Alene Casino Resort Hotel. "We looked at all the cancelled reservations and said if we don't use these existing tee times, we won't come close to meeting budget."

Christenson found ways to make the course enticing, even in the sweltering heat. Those who sill weren't buying it were drawn to deals in the clubhouse. At the end of July, the club was ahead of budget, making it 47 straight months the course's revenue has grown, and it was in

a good position for August.

"We're always exceeding the previous months' and yearto-date revenue numbers," Christenson says.

The club kept this streak alive during the heat wave by printing business cards with promotional opportunities to try to soothe the sting the heat caused. Deals included discounts in the pro shop and reduced green fees during certain days and times.

Christenson credits much of Circling Raven's success to its people. The staff, including starters and pro shop attendants, recently participated in a program to brush up on customer service skills. Due in part to some of these practices, the course exceeded its merchandising mark of last July, and by Aug. 1, the course had filled 85 percent of the month's tee times.

Christenson has been in the business since the early 1990s, when he worked at Indian Canyon Golf Course in Spokane, Wash., a 45-minute drive from Circling Raven. The golf industry was more robust at that time.

"There was no marketing," he says. "People just lined up and waited in the parking lot in the dark to play the course."

When he came to help open Circling Raven in 2003, the industry had taken a downward turn.

"Everything changed with recent events, especially Sept. 11," he says.

Those who continue to travel usually don't visit the same spot twice, Christenson says. Therefore, he focuses on attracting the customer base that's closer to home. Even these golfers aren't coming out in the same numbers they used to, so courses have to be creative to boost the number of repeat visitors and golfers who are new to the game.

"We need to know our customers and tailor services to meet the needs of the people who are coming out," Christenson says. "People have less time, aren't spending as much money and don't want to commit to a five-hour game of golf. It seems like people are more family focused and have different recreational pursuits."

Because of this, golf course marketers have to be more innovative than before to increase the number of rounds. But before a course can cater to its customers, it has to be clear about its own identity.

"The first step is to figure out who you are and what makes you unique," Christenson says. "How are you different from the facility down the road?"

Christenson read dozens of library books about the course's owners, the Coeur d'Alene Tribe, before coming up with the Circling Raven name. He named it after one of the tribe's first leaders. His reasoning was that it reflected the tribe and course well and drew attention as well.

Once golfers are drawn to the amenity, the relationship must be maintained to keep a steady customer base, Christenson says.

"For us, the successful operators moving forward, we're beyond the days in which golfers walk through doors and you didn't collect any information," he says. "My approach is almost

like big box retailers such as Macy's and Nordstrom. These stores always stay in touch with their customers, either with a catalog, note or letter. We try to personalize our service the same way so we can stay fresh in the consumers' minds as often as possible."

The staff has different methods to obtain information from customers while they're making tee-time reservations or just before they tee off.

"We employ a starter, and one of his responsibilities during the normal course of talking about the course and the expectations of the course is asking the golfers where they're from and collecting zip codes so we can employ marketing strategies throughout the year," Christenson says.

They keep the information in a database and organize it by demographics. They can then send personalized marketing items to each group.

Christenson suggests courses reward loyal golfers with special deals or with a tournament after the course closes for the season.

"Make the core group of players feel special," he says.

Christenson also finds Circling Raven's partnerships to be a valuable marketing tool. The club pooled some of its marketing dollars together with the nearby Coeur d'Alene Resort, home of the floating green, to promote both courses. Benefits are offered to those who play both courses or stay at one of the resorts.

The fact the course has received several accolades also doesn't hinder business. It has earned best-of acclaim from Golf, Golfweek and Golf Digest magazines, and its operations, customer service and merchandising also have been recognized.

Still, Christenson believes it's up to the staff to make sure golfers return.

"Overall, we try to be creative and use target marketing so we can measure it," he says. "Otherwise, we're just spinning our wheels and hoping." – Heather Wood

# Empire starts management services division

The timing was ideal for the creation of Empire Golf Management Services, a new division of Empire Golf Management, says Don Carpenter, the division's director. The division will focus on third-party management services, acquisitions and leasing, as well as selective consulting services.

"The reality is that there continued on page 15





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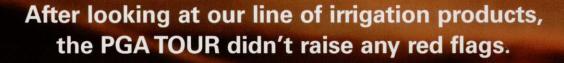
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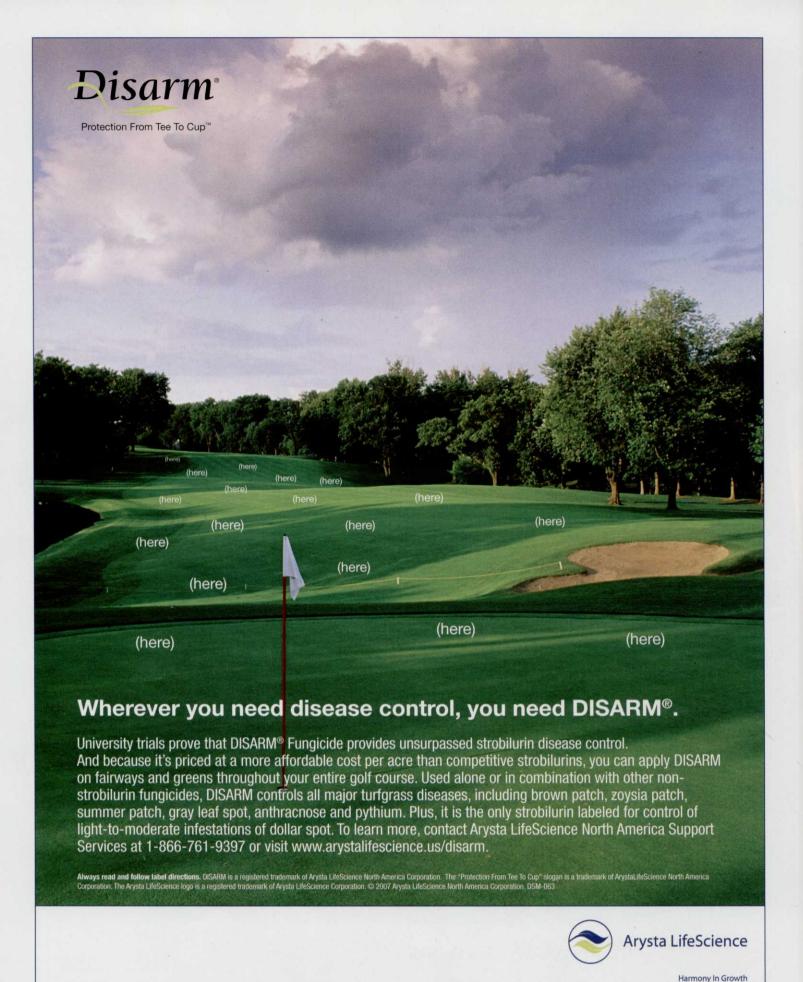
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continued from page 11 are an awful lot of golf courses and clubs that have been struggling for a few years," Carpenter says. "That has happened for a variety of reasons - overbuilding, the

economy and the fact that not as many people are joining clubs or playing golf. And some clubs have been undermanaged as well. Clubs are looking for help and that can come in a number of different ways, from an outright purchase to managing or some kind of joint venture."

Pomona, N.Y.-based Empire Golf Management, which is a subsidiary of Bergstol Enterprises, owns and operates nine championship golf courses in New York, New Jersey and Florida, including Pine Hill Golf Club in N.J. and The Links at Madison Green in Royal Palm Beach, Fla.

"Our clubs enjoy a certain reputation in the industry because we have a formula that works," says Eric Bergstol, owner of Empire Golf Management. "We stress conditioning, service and efficient operations and that pays dividends. Now we're working with other

clients to expand our reach and philosophy."

Carpenter was formerly Empire Golf's director of operations. His experience includes a stint as vice president of management services for American Golf Corp. and chief operations officer for National Fairways. He believes the experience Empire's executives have in the golf industry is a plus.

"Eric Bergstol has designed, built and managed great and successful golf courses, as well as clubhouses, so his company knows the business from start to finish," Carpenter says. "Those on our staff have strong

> backgrounds in the golf and business world. We've run everything from low-end clubs and courses right up to Bayonne Golf Club (a recently opened, premier Empire Golf property in New Jersey).

> **Empire Golf** Management Services can be successful in a competitive field already populated with high-profile management companies such as Billy Casper Golf, KemperSports, Arnold Palmer Golf, Troon Golf and American Golf, Carpenter says.

"One of the things Empire brings to the table is the ability to be a full-service company," he says. "Eric has 11 golf courses under his belt, and we can provide anything a client might demand, whether that's conducting a feasibility study about whether or not a client should build a golf course, to hiring an architect and

actually building the course and clubhouse. We feel there's a niche for us in the marketplace."

Empire Golf Management Services is in negotiations with a half dozen potential clients.

"We're in this to find ways to help make struggling clubs financially viable," Carpenter says. - John Torsiello



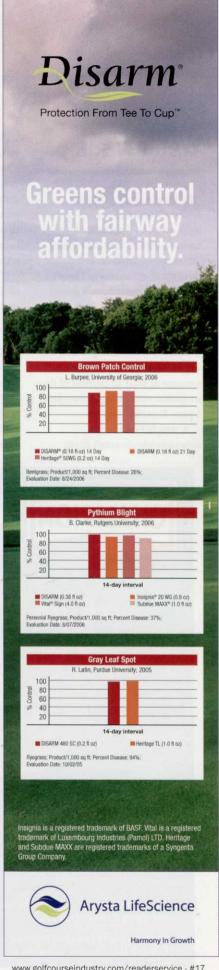
Carpenter



Bergstol

For more information about Empire Golf Management Services or Empire Golf Management, visit www. empiregolfmanagement.com or call 877-425-8269.





## Water ways

simple, daily irrigation maintenance routine can help save 2 to 3 percent of a golf course's annual irrigation water usage, says Shawn Emerson, director of agronomy at Desert Mountain Community, a group of six courses in Scottsdale, Ariz. That might seem insignificant, but it adds up, especially when combined with other practices. Regular system checks can save a course at least 10 percent of its irrigation water usage throughout a year, Emerson says.

A simple task many superintendents aren't doing is checking daily pump-station water output numbers with irrigation computer readings, Emerson says. If the amount of water that came through the pump station in a day is greater than the amount the computer ordered, the maintenance staff knows water is wasted.

"Things change," he says. "The computer is working right, but over time, nozzles wear out, so the amount of water coming out can change."

If the numbers are off, this tells the crew nozzles likely need to be fixed or replaced.

Emerson, who says he has been performing this routine for 10 years at different courses, estimates he's saved 15 to 20

percent of total irrigation water usage each year during his career. This was achieved not just by comparing pump station and computer numbers, but also with other regular system checks and, when necessary, maintenance.

Emerson's crew has a few other irrigation maintenance practices it follows. One of these is deficit irrigation. Emerson monitors the evapotranspiration rate on the course, which tells him how much water was lost from the plant. By monitoring, he figured out he only needs to put a percentage of the water lost back into the plant to maintain it at a healthy level. He usually replaces anywhere from 60 to 90 percent of the water lost in the plant.

Each turf variety has a different tolerance level for this practice, so superintendents will need to determine what percentage of water replacement is too low for that particular plant's threshold, Emerson says.

Another conservation tool is a standard irrigation system checkup.

"We have people who go out in the field and run the sprinklers at the holes for two minutes on each sprinkler to make sure everything is operating correctly," he says, adding that each designated irrigation crew member checks three or four holes each week.

The crew members make sure there are no leaks in the system. Also, if a sprinkler isn't turning



properly, it can mean one area is getting too much water and another area isn't getting enough. The problem could be something as simple as a rock stuck in a nozzle, causing a nonuniform distribution pattern.

"It's simple stuff, basic generic stuff," Emerson says. "The hard part is to create a routine to do it."

While many superintendents might think they're understaffed and can't add another item to the crew's maintenance schedule. it can be beneficial to take the time, Emerson says, Catching and correcting irrigation inconsistencies reduces water consumption, which also reduces the water bill. An efficient irrigation system can reduce a



Regular irrigation system checks can save as much as 10 percent of a course's irrigation water usage. says Shawn Emerson. Photo: Shane Link. Dreamstime.com

course's electric bill. Catching problems early also can reduce costly turf issues.

"Instead of being reactive with it by waiting to see signs with the turf, we send people out to catch problems with watering before they arise, not after," Emerson says. "It's no different than

taking care of your car. There are maintenance schedules that need to be done on a routine basis to make sure there are no problems."

Besides, it can take only a few minutes a day - or about an hour each week - to check the system. Emerson recommends checking

a few holes each day. It takes about 10 minutes to check the pump-station numbers with the irrigation computer numbers.

Emerson admits he has more resources at his fingertips than a smaller public course would, but says the task is important enough for courses of any size to do.



"I've worked at smaller golf courses, and (regular irrigation checkups) are part of the assignment," he says.

It's even more crucial for superintendents with a limited budget or water supply to

make sure their systems are running properly to avoid extra costs.

"Obviously, the more you can check, the sooner you can solve any problems," Emerson says. – *HW* 

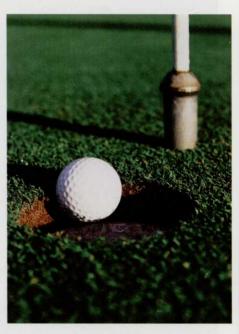
## Counter caterpillar care

Destructive turf caterpillars usually go unnoticed on golf courses until damage is noticeable. This was the message David Shetlar, Ph.D., entomologist at the Ohio State University Extension, shared at a recent Ohio Turfgrass Foundation regional seminar.

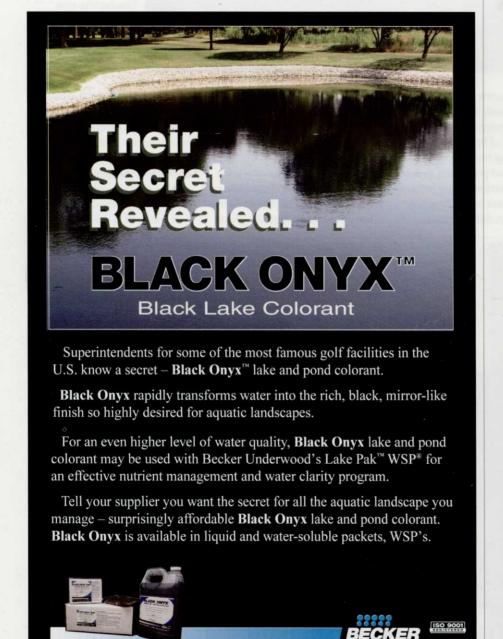
"They're always sliding under the radar until they build significant populations, and then superintendents say, 'What was that?'" Shetlar says.

The most common varieties of turf caterpillars in Shetlar's region include black cutworm, fall and yellow armyworm, common armyworm and true sod webworms. Black cutworms and fall armyworms can't survive Ohio winters, so they generally spend that time in the Gulf Coast states. It's common for the insects to be picked up in a storm as a moth and eventually land in northern states from Iowa to Ohio.

The first generation of black cutworm matures in late May or early June. They



Turf caterpillars slide under the radar until they build significant populations, says David Shetlar, Ph.D.



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typically lay their eggs on the tips of grass blades and then go back into the turf. It would seem like the eggs would be removed when the turf is cut, but the eggs have been known to survive, and if the clippings are dispensed nearby, the insect remains nearby, Shetlar says. Then, in mid- to late July, the second generation emerges. At the same time, the second generation of armyworm generally emerges, followed by its third generation in August.

Aerifying during the summer months isn't advised if an infestation is known or probable, Shetlar says.

"You're just making ready-made burrows," he says.

Pock marks in the turf in late August and September are a sign that fall armyworms are feasting on the turf, Shetlar says. A black cutworm or fall armyworm infestation usually can be identified by twin pock marks in the turf. The insect burrows a hole in the soil, leaves its waste and burrows back out of the soil, creating a second hole. Another sign of an infestation is a trail through the turf that can be seen in the morning dew.

"During the third and fourth instars, they will leave the nursery and wander," Shetlar says.

The insects can move from 50 to 90 feet at a time and generally travel every three to five days, he adds. Because of this behavior, Shetlar recommends spraying insecticide outside the perimeter of tees and greens at least one or two boom widths to catch the worms that wander.

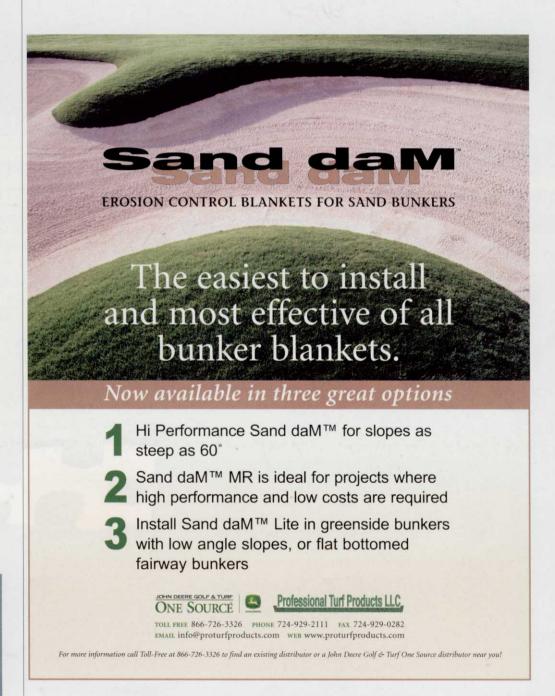
Armyworms are attracted to light, which often leads them gravitate to turf that's on the edge of a parking lot with lights that remain on during the night. Another place to look for the insect is post markers, flags and signs because they're known to lay eggs on those surfaces.

#### On the Web

> For more news articles about what's happening in the world of golf course maintenance and management, visit the *Golf Course Industry* Web site at www.golfcourseindustry.com.

Another way to determine if there's a cutworm infestation is to flush an area of turf for larvae. Mix one tablespoon of Joy, Dawn Ultra or Ivory clear dishwashing detergent per gallon of water for a solution. Use two

gallons for every square yard area of turf. If there's a cutworm infestation, the larvae will surface within three to five minutes. If insects surface after a half hour, they're likely to be sod webworm larvae. – *HW* 



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Jack Brennan founded Paladin Golf Marketing in Plant City, Fla., to assist golf course owners and managers with successful marketing. He can be reached at jackbrennan@tampabay.rr.com.

## **FOCUS YOUR SALES EFFORTS**

hen prioritizing your goals while creating a marketing plan, focus your time and energy on soliciting business segments that will generate the most revenue.

A good marketing plan is dynamic, so if you're monitoring it properly, it will change as the year progresses; and each subsequent year, you identify the most profitable marketing targets better. A good marketing plan requires realistic goals and market research, but even with solid research and preparation, a plan can go wrong if it's not monitored closely.

Paladin Golf Marketing conducted a marketing assessment report for Baywood Tree Golf Club (actual name withheld for contractual reasons) in November 2006. The report was a researched assessment of future public, member and expected play levels in a market with a priority placed on direct competitors. The purpose was to assess market demand for golf in all segments of area play: outside, membership, group business, hotel, seniors, etc. Once this market research is compiled, it can be used to assess market success levels at a course. If done correctly, it's all the market research needed to begin concerted marketing strategies and tactics for a public-access golf course.

Baywood Tree's owner wanted marketing assistance on an affordable, step-by-step basis. The course didn't have much cash flow, and the owner was contributing more than \$65,000 a year to the operation for the past several years. Although the owner had means, he wanted to begin with the marketing assessment report to determine if his course had the chance to succeed in the market or decide on a more viable use of the land.

First, we completed a demand analysis based on population demographics. On average, each 18-hole equivalent was projected to generate 7,000 more rounds than Baywood Tree was generating. Not good news for Baywood but promising for the future.

Next, we completed an Internet golf

course survey of all public and semiprivate courses in a 40-minute radius. Then we conducted a telephone survey of the same courses. Afterwards, we conducted in-person surveys to confirm the telephone survey information.

From our surveys and other sources, we reviewed facility-reported demand compared to consumer- or population-reported demand. Interestingly, the facilities were reporting almost 23 percent more rounds than the population method of demand analysis. The likely sources were golfers coming into the market from outside the radius used for analysis and tourism/visitors. After we confirmed the tourism pressure through the hospitality industry, the rounds opportunities would be duly noted and included in our marketing assessment recommendations with strategies to outmarket the competition for this business.

To assist our research, we needed direct feedback from customers and area golfers. Normally, we recommend a player survey - 12 questions distributed at the course for 10 consecutive days each quarter - but the course was in its off-season generating few rounds. We decided to conduct an esurvey and contracted with an e-marketing company for the opt-in e-mail addresses of golfers only.

One of the greatest benefits of the esurvey, besides the response information, is the quick turnaround time. Within 10 days, we were set to mail. With an incentive included, we experienced a 14.5-percent open rate on our e-mail blast, and 10.9-percent of those opens filled out the survey. It's not the greatest return ratio, but we had 126 completed surveys and were able to use the respondents' likes, dislikes and comments about the course and other favorite course information as a snapshot of how our subject course is perceived in its marketplace.

Think about the value of the research we have at this point and how it benefits our decision making while planning the marketing. We have the owners', long-time manag-

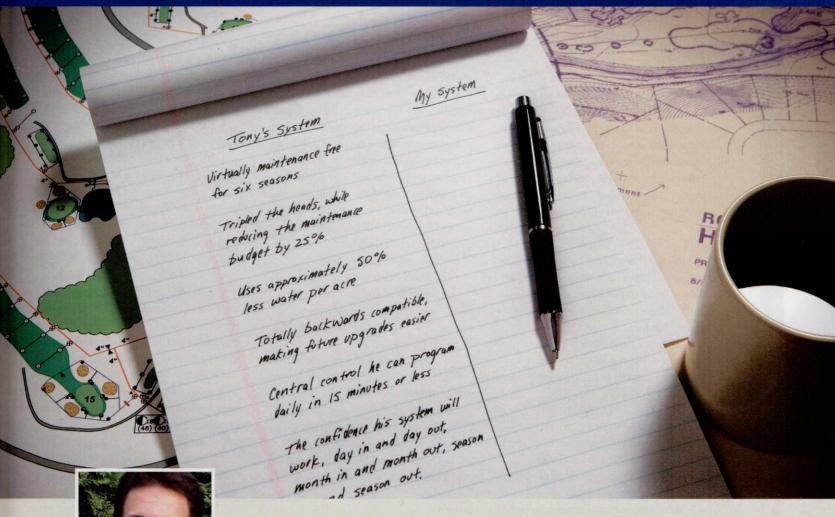
ers', sales managers', employees' and several loyal golfers' perceptions of Baywood Tree's strengths and weaknesses. We have industry statistics to gauge what demand levels could be expected at the course. We have a history of rounds and revenue the course has generated the past several years. We have a good but general idea of what segments are playing at all of the course's direct competitors through our Internet, telephone and in-person surveys. And we have direct feedback from our e-survey of area golfers. That's powerful research on which to base marketing.

Baywood Tree's owner is a busy medical specialist and doesn't have time to focus on the club as much as he would prefer. He bought the property, including the golf course, in 1979, and the club took care of itself through the mid-1990s. However, he didn't have any golf-industry experience, and his management team learned by the seats of their pants during golf's better times. Beginning with fiscal year 2002, the course began experiencing losses, which continued to mount primarily because of oversupply on the peripheral of his primary market and some neglect of the facility's clubhouse and food-and-beverage operation. Still, the golf course is in good condition and competitive relative to the market.

A marketing assessment report isn't intended as a marketing plan. It's the foundation on which to build a marketing plan. The problem that occurred a few months after the marketing assessment report was submitted and reviewed was it was left in the hands of the management team without proper monitoring mechanisms in place. It only took an hour-and-a-half phone conversation to realize the salesperson had gravitated to sales targets she was most comfortable with. They weren't the targets that could generate the most revenue.

The problem in Baywood Tree's case was prime selling time wasn't optimized by relying on the judgment of a salesperson versus a marketing planner. Know your business priorities, focus on them appropriately, and monitor your efforts in a systematic way. That's priority marketing. GCI

## Doing your homework still pays off.



**Tony Girardi**, Certified Golf Course Superintendent (CGCS), Rockrimmon Country Club, Stamford, CT

#### There is a difference in irrigation systems — just ask Tony Girardi, CGCS.

In 2001, Tony began a complete course renovation. After experience with two previous installations with competitive systems, he decided to look at Rain Bird to find out the difference for himself. "I started doing a lot of homework, and realized the tremendous benefits of Rain Bird, like the ease of central control and a satellite irrigation system that's fully backwards compatible. We're now in our sixth season, with no major breakdowns, and I've cut my irrigation maintenance budget by 25 percent. With Rain Bird I run virtually maintenance-free season after season, I just don't have to worry about it."

If your system doesn't stack up to Tony's, call 1-800-RAINBIRD or visit www.rainbird.com/golf.





**Jeffrey D. Brauer** is a licensed golf course architect and president of GolfScapes, a golf course design firm in Arlington, Texas. Brauer, a past president of the American Society of Golf Course Architects, can be reached at jeff@jeffreydbrauer.com.

## **CONSTRUCTION ROLE - PART III**

n the first two installments of this series about a superintendent's role in construction (May and July issues), I described contractual boundaries superintendents should work within if acting as an owner's representative during a construction or renovation project. Below are specifics superintendents should evaluate to ensure a project will be successful.

#### TURF, FERTILIZERS, AMENDMENTS

- Verify material for correct quantities and specification compliance, including slow-release components, if any, especially if the contractor is supplying an "or equal" product.
- Monitor the contractor's initial spreader settings and applications to confirm materials are applied evenly and at correct the rate.

#### TURF AND SOD

- Count seed bags and read tags, certification papers, etc., as necessary.
- Measure the cubic feet of each truckload to verify the quantity.
- Visit proposed sod farms to select sod for the project.
- Mark installation limits and direct initial watering.

#### **GREENS MIX AND GRAVEL**

- Design or review mix design. Recommend changes within the contract price or through a change order.
- Observe and accept mix and gravel deliveries. Reject those that don't comply but provide a specific reason for rejection.
- Monitor or provide ongoing mix testing against prototype samples.

#### CART PATH

 Assist with cart-path layout, bridge requirements (weight, width, etc.) and curb location.

• Monitor concrete deliveries and installation. Concrete mix design is usually done by consultants, but the owner's representative monitors concrete deliveries, including the monitoring of: (i) base compaction and base material installation; (ii) moisture content of the subsoil; (iii) form work and reinforcement installation; (iv) concrete depth; (v) finishing and curing procedures; and (vi) concrete materials.

For the concrete materials:

- · Collect delivery tags.
- Perform and/or monitor "slump tests," which measure how watery the concrete is. With concrete, 4- to 5-inch slump is typical.
- About 30 days after the installation, evaluate the concrete strength by providing or reviewing core cylinder tests after placement to confirm the concrete has sufficient compressive strength (usually specified at 3,000 to 4,000 psi).
- Check for cracks and the need to replace certain areas.

#### DRAINAGE

This is as important an element of construction as there is, and one you'll fight forever about, if not done correctly. So, this merits considerable effort to identify drainage-problem areas for correction by grading or pipe additions – including the cart paths, tees and fringe areas after every rain storm – and monitor pipe installation, including: proper line and grade; minimum grade for self-cleansing velocity; and catch basins, including grading around them to assure water enters.

#### IRRIGATION

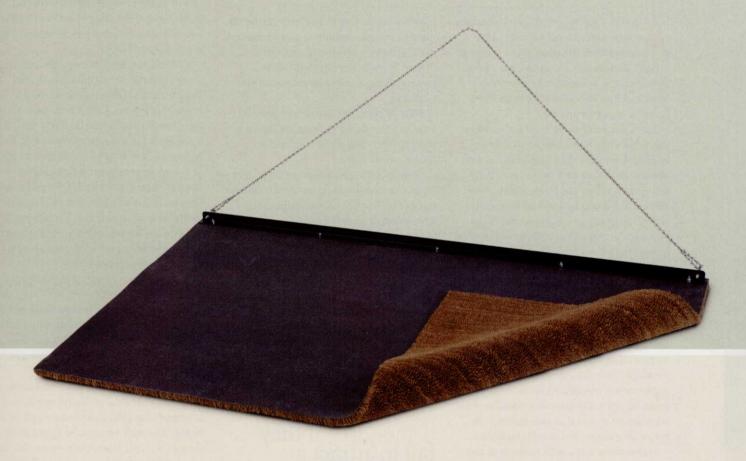
The heartbeat of the golf course – and an area that's prone to installation problems – is the irrigation system, which requires

much of the superintendent's attention. During a recent project, irrigation consultant Terry Little of Aqua Engineering in Fort Collins, Colo., provided the superintendent with this checklist of things to do or monitor:

- Participate in staking out the system, approving it as you go; and
- Monitor the installation, observing the proper installation of:
- Piping (i) thrust blocks; (ii) pipe depths, backfill material and routing within manufacturer's maximum deflection guidelines and "snaked" to allow for contraction; (iii) pipe ends tapered before assembly of bell connections; (iv) properly used PVC primer and cement and removal of excess material from pipes; (v) mechanical joints properly aligned, tightened and installed within manufacturer's guidelines; and (vi) trench compaction.
- Wiring 24- and 120-volt wiring and cables should be located: (i) below the pipe centerlines; (ii) loosely to allow for expansion/contraction; (iii) with expansion coils at directional changes; (iv) in a consistent location for future locating ease; and (v) wire splices should be minimal and logically located.
- Sprinklers set level and swing-joints should be set at 30 to 45 degree angles, not flat on the bottom of the ditch or vertical, and with proper lay length to achieve the correct angle.
- Pump house Other than the wet well and pump skid, these are often provided by the owner. So, as the owner's representative, you might take the lead to provide: (i) power to the pumps, meters and transformers; (ii) design criteria and/or review, including leaving room for future needs; (iii) arranging building inspections; and (iv) verifying wet-well depths.

Also, you might encourage good work habits, such as daily clean up, safety programs, meeting any regulations or permit conditions affecting the project. **GCI** 

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Jim McLoughlin is the founder of TMG Golf (www.TMGgolfcounsel.com), a golf course development and consulting firm, and is a former executive director of the GCSAA. He can be reached at golfguide@adelphia.net or 760-804-7339. His previous columns can be found on www.golfcourseindustry.com.

## SEARCH GOES ELECTRONIC

fter having dedicated several columns to the superintendents' side of the career Web-site issue, I'd be remiss if I didn't address the complementary impact electronics, in general, and career Web sites, specifically, soon will have on the search-committee process.

However, before looking at the impact electronics will have, search committees need to determine the quantity and quality of candidates they wish to attract to their job openings first. Too often, search committees feel their clubs will be dishonored if they fail to attract a high number of job applications. Accordingly, they tend to write all-inviting job notices hoping to catch the eye of every level of experienced candidate. The problems with this approach are twofold: first and foremost, upper echelon candidates don't respond to "cattle call" invitations to apply for job openings, and second, this is a guaranteed way to attract more resumes than the search committee can deal with effectively (i.e., they don't have the experience to identify the better four, five or six candidates to interview when so many resumes are received). Consequently, the better candidates often aren't considered.

If ever there was a solid example of less delivering more, it's when a golf facility understands it will fair better attracting as few as 25 quality applications than 90 to more than 125 applications from mostly less experienced candidates. To do this, the club/course should:

Write a tight job notice that will encourage the better candidates to apply because of the challenge the job opportunity presents, while at the same time dissuading the lesser-experienced candidates from applying; and

Directly invite several well-qualified candidates to apply. The best way to identify well-qualified candidates is through regional/state golf association staffs because they interface with virtually every superintendent within a region from one year to the next.

When converting to an electronic-based process, search committees should commit to the following seven-step process:

Step 1: Make the formal decision to require all applications be submitted electronically.

Step 2: Then, immediately register for a unique domain name to receive applications independent of the regular club/ course e-mail address.

Step 3: Circulate an appropriately tight job notice that would (i) attract the desired number and quality of applications; (ii) advise that all applications must be submitted electronically to the e-mail address indicated by a specific deadline date; and (iii) advise that applicants who incorporate personal career Web sites within their applications will be given priority (not exclusive) attention. (This approach will encourage the better candidates to apply.)

Too often, search committees feel their clubs will be dishonored if they fail to attract a high number of job applications.

Step 4: Forward applications electronically, as received, to each search committee member for review well before interviews. This will avoid building the dreaded tall pile of hard copy applications that are generally read at one time only after the closing deadline passes - an approach that discourages all candidates because it's so easy for the better applications to get lost in the shuffle.

Step 5: Once the closing date passes, delay the traditional approach of immediately selecting candidates for interview and invite about a dozen of the better qualifying candidates to submit time-sequenced, budgetsupported plans of action electronically to the search committee by a specific date (about 10 days before interviews begin). Upon receipt, the plans of action would be forwarded electronically to members of the search committee.

To facilitate this process, clubs/courses should (i) provide candidates with information packets (recent budgets, course consulting reports, OSHA records, etc.) they'll need to complete their due diligence homework and to prepare effective plans of action; and (ii) assign a committee member or two to personally escort candidates through their initial tours of the golf course because this is a unique, informal opportunity for both parties to gain comfortable insights of each other that generally aren't obtainable during the more formal traditional interview process.

Step 6: After a review of the submitted plans of action, identify the four to six candidates the committee believes have earned the privilege to be interviewed because of the quality of their applications and the merits of their submitted plans of action.

The benefits that accrue here are precedent setting. First, search committee members will come to the interviews well informed about the candidates' employment history and their anticipated approach to the job, if hired. Then, the pressure will be taken off the candidates to hard-sell themselves cold turkey during the brief interview minutes. These two elements taken in combination virtually assure a more relaxed, in depth and informative Q&A exchange that significantly enhances the likelihood of hiring the best candidate available.

Step 7: Finalize the selection process and

Without question, just as term papers and the like are submitted electronically throughout the academic world, assistants and superintendents should get their mind sets and Web sites ready to compete for jobs within this constantly evolving electronic world as soon as possible because there will be little other choice in two to three years. Electronic communications is a searchcommittee party waiting to happen. GCI

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## **ENSURING A FULFILLING FUTURE**

hat will you do differently next year? What will you be doing in 10 or 20 years? What will you be able to do in retirement?

I've worked closely with golf course superintendents for almost 20 years, and during that time, I've gained great respect for what you do and how you do it. I've also learned there are some unique opportunities and threats for you.

One opportunity is the myriad educational materials and seminars offered by the GCSAA, universities, state and regional member organizations, and the many companies selling products and services. These opportunities are unparalleled in other industries, so you should be proud of your market.

These opportunities are also a threat that you won't use them effectively, and thus, find yourself unprepared for the next 10 to 20 years or even for retirement. The threat is real. I've talked to many superintendents who seek advancement or a career change but don't have the necessary knowledge, skills and experiences to move into upper-level management or other rewarding positions.

Other unique aspects of a superintendent's position make this threat more real. First, many superintendents don't have a supervisor or mentor to guide them with their career development because many clubs don't have a traditional organizational structure. Second, there are many superintendents who don't have an obvious next step in their career, which also is influenced by the lack of structure at a club.

I hope you're asking, "What does this mean for me?" It means you must be thoughtful and proactive about your educational choices. If you're like most superintendents, when you get the course roster for the GCSAA conference at the Golf Industry Show or a regional event, you look at the offerings and select a few to attend. Although these selections will be beneficial, they'll likely focus primarily or exclusively on your short-term needs, and the lost opportunity will contribute to the aforementioned threat.

You're in charge of your professional development. As a correlation, you'd never think of applying fertilizer or pesticides without a plan. Similarly, you should never decide what offerings to take based only on what you see today. The offering selection should be based on a carefully thought out, professional development plan.

A superintendent in one of my seminars told me he takes two seminars each year at the Golf Industry Show - one for his course and one for himself. The seminar for the course focused on what he'll do differently next year. The seminar for him focused on what he'll be doing during the next 10 to 20 years and, perhaps, in retirement. He had a plan. Below is a three-step process for you to develop a plan.

#### Step 1

Think about and visit with family, mentors, friends and acquaintances in other roles and even industries to discuss what you want to do and accomplish with the remainder of your career. Consider these questions:

- · Do I want to continue in my current or similar position until I retire?
- · Am I driven to strive to be a superintendent at a prestigious course?
- · Do I want to advance to a position such as director of golf covering multiple courses or leading all of the

ent position within the golf business, such as a position in the many companies tendents and golf courses?

Outline or write your observations and conclusions.

#### Step 2

Determine the knowledge, skills and experiences you'll need to excel in what you seek to accomplish during the rest of you career. This won't be easy and will require research and conversations with people in positions you seek. Be proactive and talk to individuals in these positions. You'll be surprised how willing people are to talk to you.

#### Step 3

You're now ready to lay out your professional development plan. The following should help:

- 1. Focus on topics beyond the normal turf management courses - leadership, sales training, supervision, strategic planning, team building, interpersonal skills, customer orientation and marketing.
- 2. Move outside your comfort zone. Your training could move outside offerings specifically for superintendents. Look to local chambers of commerce, colleges or universities, or executive educational programs.
- 3. Don't restrict yourself to traditional courses and seminars. The Internet offers almost unlimited opportunities for learning.

Armed with your professional improvement plan, your seminar selections for the GCSAA conference at the Golf Industry Show and other educational events will be thoughtful, proactive and planned. GCI



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Offer is valid from September 1, 2007 through November 30, 2007. Some restrictions may apply. Qualifying purchase(s) must be on one invoice and paid for with your LESCO credit account. Offers listed are not valid with any sales covered by contract and/or bid pricing. All truckload orders will be direct shipped to your location. Some offers only available in limited areas. The names used may be registered trademarks. Items on sale may not be in stock at all locations. LESCO reserves the right to substitute a like product if out of stock.

## **Alternative** product research

he USGA is conducting research projects about the effectiveness of new and alternative products for golf course construction, including testing bunker sand, bunker liners and sand erosion products, according to Jim Moore, director of construction education for the USGA Green Section. Here's what he had to say about some of them:

- 1. Flat pipe in green construction. "It's another option that works. It's cost effective and practical, but you need to use fittings that are designed for the flat pipe."
- 2. Alternatives to gravel, such as plastic or geotextiles. "Geotextiles were never accepted by the USGA. I think they're acceptable, but I need to convince others in the USGA in order to put them in the USGA guidelines."
- 3. Alternative seeding processes. "For example, BlueYellow's product is difficult to apply because it's lightweight. It's like spreading Kleenex on the ground."
- 4. Inline filters for drainage. "We need to be more prudent with grow-ins. We're putting down too much nitrogen, and it's running into bodies of water. We need to filter the water as it comes through a green. These filters won't be installed on every green, rather in certain environmentally sensitive
- 5. Wireless sensors in greens. "These will help the superintendent know if there's a perched water table."
- 6. Subsurface drip irrigation. "This will most likely take off in tees. You need water to move upward so you should use dirty sand with silt and clay because with 100-percent sand, water will drain more quickly."

### How are we doing?

he growth or health of the industry is measured in several ways. Two of those are rounds played and golf course construction. The charts below provide a glimse of each. Overall, growth remains fairly stagnant.

#### **National rounds played**

Jan	Feb	Mar	Apr	May	Jun	YTD
-20.6%	-10.6%	11.3%	-15.1%	5.4%	3.4%	-1.8%
-18.3%	-6.1%	6.0%	-15.4%	4.5%	2.9%	-2.7%
-21.3%	-12.1%	12.6%	-15.0%	5.6%	3.6%	-1.6%
-8.7%	-3.3%	6.4%	-7.5%	1.6%	4.6%	-0.4%
-15.8%	-8.1%	7.8%	-15.6%	6.7%	5.0%	-0.9%
-27.2%	-16.9%	16.2%	-15.9%	5.6%	2.9%	-2.1%
	-18.3% -21.3% -8.7% -15.8%	-20.6% -10.6% -18.3% -6.1% -21.3% -12.1% -8.7% -3.3% -15.8% -8.1%	-20.6% -10.6% 11.3% -18.3% -6.1% 6.0% -21.3% -12.1% 12.6% -8.7% -3.3% 6.4% -15.8% -8.1% 7.8%	-20.6% -10.6% 11.3% -15.1% -18.3% -6.1% 6.0% -15.4% -21.3% -12.1% 12.6% -15.0% -8.7% -3.3% 6.4% -7.5% -15.8% -8.1% 7.8% -15.6%	-20.6%         -10.6%         11.3%         -15.1%         5.4%           -18.3%         -6.1%         6.0%         -15.4%         4.5%           -21.3%         -12.1%         12.6%         -15.0%         5.6%           -8.7%         -3.3%         6.4%         -7.5%         1.6%           -15.8%         -8.1%         7.8%         -15.6%         6.7%	-20.6%         -10.6%         11.3%         -15.1%         5.4%         3.4%           -18.3%         -6.1%         6.0%         -15.4%         4.5%         2.9%           -21.3%         -12.1%         12.6%         -15.0%         5.6%         3.6%           -8.7%         -3.3%         6.4%         -7.5%         1.6%         4.6%           -15.8%         -8.1%         7.8%         -15.6%         6.7%         5.0%

Figures represent facilities that have submitted rounds data for both time periods. Source: National Golf Foundation, as of 8/15/07

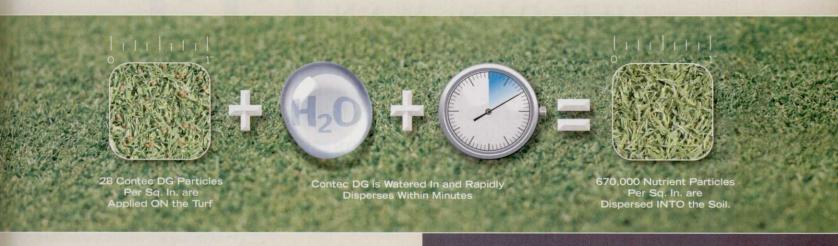
#### **Construction report**

as of 8/14/2007										
Туре	Und	er construc	tion*	Completed*						
	9-hole	18-hole	Total	9-hole	18-hole	Total				
New facilities		HEAT HE		In miles						
Daily fee	27	118	145	10	26	36				
Municipal	10	7	17	2	4	6				
Private	8	69	77	6	17	23				
Total	45	194	239	18	47	65				
Additions		- Ipho		Hillian	The Th					
Daily fee	89	5	94	13	3	16				
Municipal	4	1	5	1	0	1				
Private	9	5	14	9	3	12				
Total	102	11	113	23	6	29				
Grand total	147	205	352	41	53	94				

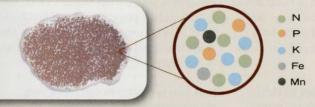
· Figures don't include courses classified as reconstructions. (57) nine-hole and (90) 18-hole reconstructed courses were under construction and (16) 9-hole and (31) 18-hole reconstructed courses opened. • Source: National Golf Foundation

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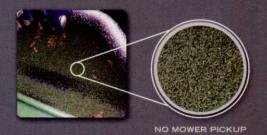
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NO BALL PICKUP

# THE OLD MAN AND THE

Terry Bonar discusses what it takes to succeed at a private club for many years

#### BY PAT JONES

A fter 45 years – except for a brief hiatus to serve in the Air Force – it's safe to say Terry Bonar and Canterbury Country Club have been there for each other.

"It's been a pretty good ride," says the man who showed up at the course in Cleveland's prosperous eastern suburbs as a green college kid in 1961 and who officially has overseen Canterbury's grounds for almost 25 years.

Canterbury is a prestigious old club – a Herbert Strong design many feel is the best among a bevy of outstanding private facilities in the Cleveland area. The history of the place overflows with notable moments.

Jack Nicklaus broke Ben Hogan's record for major wins at Canterbury with a victory at the PGA Championship in 1973. Bonar was there for that event. The club hosted the U.S. Amateur in '64 and '79. Bonar was there for those events. Canterbury was the site for four consecutive Senior TPCs – the tournament that essentially launched the Champions Tour – from '83 to '86. He was there. And the 1996 U.S. Senior Open? Guess who was hosting the event.

Currently, more than 300 members come to the club – when it's not snowing – to enjoy one of the best facilities in the country.

Bonar has been a fixture at Canterbury for five decades. I'm guessing you can count the number of superintendents with that kind of tenure on your fingers and a couple of toes. And, if you factor in the USGA, PGA and Champions Tour events he's hosted or assisted with during that time, he might be the only guy who's stayed at an elite private club that long and survived the pressure of setting up big events.

So what's the deal? How has he done it? What can you learn from a man who has defied all the odds, kept a mostly low profile and, amazingly, kept his pride and his sense of humor? I wanted to find out, so I visited him at his none-too-fancy maintenance facility that sits just a few hundred yards from the clubhouse of one of America's great classic golf courses.

## ARE YOU THE SECOND-MOST FAMOUS PERSON FROM STEUBENVILLE, OHIO?

Probably not, but my hometown is probably best-known because Dean Martin was born there.

#### DID YOU EVER MEET HIM?

Not in Steubenville, but I saw him in Las Vegas in 1959. I wasn't old enough to drink at the time. He was playing blackjack with Frank Sinatra, and I screwed up my courage and introduced myself. I was able to see the Rat Pack during their heyday. That was pretty neat for a kid.

## YOUR MOM WAS A TEACHER AND YOUR DAD WAS A STEELWORKER. HOW'D YOU GET INVOLVED IN GOLF?

When I was 12 or 13, I got a set of clubs – actually it was an 8-iron, putter and a driver

– and taught myself to play. I caddied a lot and ended up on the high school team (in Steubenville) and became a fair player. I was a two handicap at one point, and our team's record while I was in school was 65-2. I graduated in 1958 and wasn't sure what I wanted to do, but Penn State had just started their turf program, and I decided to give that a try to stay involved in golf. Burton Musser, Ph.D., was in charge of the program then and Joe Duich, Ph.D., was his understudy. We had guys like Frank Dobie, Bill Burdick and Bruce Denning in that class.

## HAD YOU WORKED IN GOLF COURSE MAINTENANCE AT THAT POINT?

Yes. During college, I worked some at a football stadium and later worked at Oglebay Park in Wheeling, W.Va., but I hadn't had much experience. When I graduated in 1961, Canterbury had sent a letter to Penn State looking for a crew member, and Duich asked me about it, and I said, 'Hell, why not? It's closer to home." That's how I ended up here.

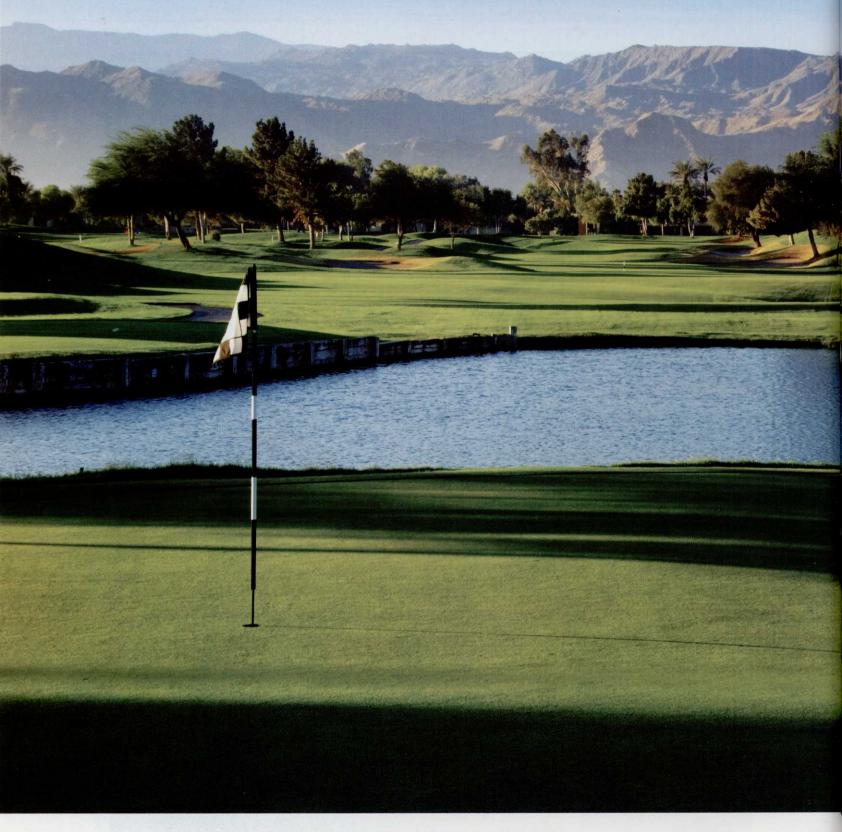
I started in April of 1961. The superintendent was a Hungarian guy – so was most of the crew. He spoke some English, but spoke Hungarian to the rest of the crew when they didn't want me to know what they were saying. They were good guys, and they liked me because I didn't mind hard work. They taught me the little stuff – all the detail work –and educated me about the course. I kind of became an honorary Hungarian.

32



Photo: D.S. Resch

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#### **HOW DID YOU END UP IN THE SERVICE?**

As a crew member, I was laid off during my first and second year. In my third year, I became an assistant. There was no way I was ready to take over, but I was definitely ready to be an assistant by the summer of '63. That's when I received a notice to take a physical for the (Army) draft. I went to see the Air Force recruiter because I didn't want to be a "ground-pounder." I ended up as an intelligence analyst. I spent my time analyzing intercept stuff and monitoring radio traffic. I was in school in Texas for a year, went to Germany for two years and then a year in Vietnam. I got out in '67 and came back here.

#### YOU WERE HERE FOR THE PGA **CHAMPIONSHIP IN 1973 AND A BUNCH** OF OTHER COOL EVENTS. WHAT WAS THAT

In '73, they didn't even televise much, only the back nine holes. There was no pro-am, no sponsor tents - the peripheral things were concession tents, bleachers and a few TV towers. It was a different time. We did a lot of prep work and worked long hours. By the time the tournament got here, I was fried. All the pros that I idolized were right here at our golf course, and I didn't really care. We did all right and the event was a success, but it taught me a lesson. I made up my mind that I wouldn't burn out myself or my

crew before a big event.

During both U.S. Amateurs, we put up ropes but that was about it. They did televise the 1979 Amateur, but it was on a delay. By the time the Senior Open came in '96, we'd hosted a bunch of events and working with USGA had never been a problem with us. It was great working with Tom Meeks, Tim Moraghan and Mike Davis. The event ran very smoothly. The weather cooperated, the course was firm and fast, and was well received by the players.

#### **DID YOU USE A BUNCH OF VOLUNTEERS** FROM OTHER AREA COURSES FOR THE **SENIOR OPEN IN '96?**

I never did the volunteer thing. In '96, Matt Shaffer (then at The Country Club of Pepper Pike in Ohio, now at Merion Golf Club in Pennsylvania) sent a couple of guys over as backups, but that was about it. Local superintendents Joe Volk, David Webner and Thom Martinek came over and kept me on the right track. I remember going to the Open at Congressional in '95, and Paul Latshaw had 65 volunteers. I couldn't imagine what I'd have done with all those guys. I'm sure Matt and Paul were just trying to help guys get a major on their resumes.

IS MENTORING ASSISTANTS AND YOUNGER FOLKS A BIG PART OF YOUR APPROACH?

A while back, Terry Bonar made up his mind that he wouldn't burn out him or his crew before a big event. Photo: D.S. Resch

It's not something I've focused on every day, but since '71, I've had 17 guys who have worked for me and moved on to become superintendents, including guys like Dan Pierson, Dave Webner, Joe Kosoglov, Bob Holmes, Doug Miller and Craig Kachline. I'm not trying to compete with Paul Latshaw or other guys like that. I'm not in a hurry to turn 'em over or run them off. I'm a little greedy and want the good guys to stay for a while.

#### DO YOU REMEMBER THE FIRST DAY - 25 YEARS AGO - THAT YOU WERE OFFICIALLY THE SUPERINTENDENT AT CANTERBURY?

I remember I lost a lot of sleep the first year. On one hand, I didn't have to worry about what the superintendent thought anymore. But, on the other hand, I was responsible. I traded one set of troubles for another. It's like buying a gift for your wife ... no matter what you do, you're worried you'll be wrong.

#### WHAT ARE THE THREE BIGGEST CHANGES YOU'VE SEEN IN THE TOOLS OF THE TRADE **DURING YOUR TIME?**

No.1 is getting rid of steel golf spikes. It's made the biggest improvement to our greens. The PGA Tour guys bitch about damage around the holes, but it's their fault. It's the stupid steel spikes. I can remember how bad our greens looked before we went to spikeless. There's no comparison.

No. 2 is the development of plant growth regulators. I use Primo, and almost everyone I know is using it or other PGRs. Now you can fertilize and grow grass when you used to have to starve greens and fairways.

No. 3 is aerification equipment. Nothing can take the place of core aeration. It's necessary, but we also deep tine and use the "job-saver" 3/8 inch tine. I've become a big fan of the PlanetAir. Dan Pierson from Wilmington Country Club (in Delaware) told me, "If you've got push-up greens, you've got to have one of these." It's expensive, but it's fast and isn't disruptive. It goes two inches deep - which is past my roots in some cases.

I SNUCK INTO YOUR EQUIPMENT BUILDING BEFORE I CAME HERE TO YOUR OFFICE. YOU HAVE A TON OF STUFF, AND SOME

#### IS PRETTY OLD. ARE YOU COLLECTING ANTIQUES OR WHAT?

There are no excuses at this level. The members don't want to hear about broken-down equipment. I believe in backups and taking care of the equipment the club buys for me.

### YOU'RE PRETTY WELL-KNOWN THROUGHOUT THE INDUSTRY. DO YOU GET A LOT OF PRESSURE TO ENDORSE PRODUCTS?

Not really. I get approached occasionally. To me, nothing carries as much weight as another superintendent I trust who's using something. The first thing I do when I'm approached by a salesman with a new product is to ask is for their users' list. I'll call those guys. There are salespeople I trust – guys like Glenn Omari with Harrell's. They've been there and they're in the business for the long run. We're blessed in northeast Ohio to have really knowledgeable and helpful sales reps.

#### HOW DO YOU SHARE YOUR KNOWLEDGE AND EXPERIENCE WITH YOUR PEERS?

I like to write articles, but it's difficult. I do some things for our club newsletter and that gives me a lot of self-satisfaction. I've talked at the Ohio Turf Conference and been on panels, but not a lot. I don't mind talking if they ask me to talk.

#### WHAT DO YOU TELL YOUNG GUYS WHEN THEY ASK FOR YOUR ADVICE?

First, you have to be an honorable person. Honesty comes before everything else. You have to have a lot of resolve. Things aren't going to go your way all the time. Don't be afraid of hard work. Someone will notice if you're out there humping every day. You have to motivate your people, and the best way to do that is by example. My father used to tell me, "Don't be mediocre." It stuck with me.

#### ARE THERE TOO MANY YOUNG FOLKS IN THE PROFESSION NOW?

Sure, or too few courses, depending on how you look at it. I was on the ATI advisory board for Ohio State's turf program. I suggested every applicant should have to work on a course before they can enroll. You can't have any illusions that this is an easy or simple job before you commit to a career in this business.

#### IF YOU COULD CHANGE ANYTHING ABOUT THE INDUSTRY, WHAT WOULD IT BE?

There's nothing wrong with most clubs that an influx of new members wouldn't cure. We provide a quality product for a good price. I'm proud of that. As superintendents, our management skills are important. Things aren't the same, and you have to change. We've cut our staff a little to keep up. Our budget hasn't been cut, but we're putting the money into the golf course. The members are proud of the golf course, and I'm honored to be in charge of it.

About six or seven years ago, my green chair asked what he could do for me. I told him I'd like to sit in on the board meetings. The president asked if I wanted to stay for the whole meeting, and I said if you're asking I'm staying. I've learned a tremendous amount from that. It's given me a new insight into how clubs run. It's helped me and helped my credibility. They're smart people and watching how they interact impressed me. I try to stay calm and mostly succeed. Sometimes I sit through the whole meeting and don't say anything. Oftentimes it's just better to listen.

One of the things they let me do is to help set the agenda for green committee meetings. Of course, I always ask him if he wants anything in particular on the agenda. The meeting is always scheduled for one hour before the board meeting. It's a great idea because it helps the committee focus because they have to finish before the board meeting.

#### HOW DO YOU SURVIVE FOR DECADES IN A HIGH-PRESSURE CLUB CULTURE?

You hate to see someone lose their job, but the ones that do – it's mostly because of things beyond their control. There's a change in the general manager position or you have a g.m. who doesn't recognize the value of the course. It's good when the club manager and superintendent are on equal footing. You need to have regular meetings to talk honestly about what's going on to prevent those kind of misunderstandings.

## DO YOU THINK SOME VETERAN SUPERINTENDENTS GET IN TROUBLE BECAUSE THEY BEGIN TO FEEL THAT IT'S "THEIR" GOLF COURSE AND THE MEMBERS CAN'T TELL THEM WHAT TO DO?

I want my assistants to think like that. They should feel a sense of ownership. But I've learned you can't do that when you become a superintendent. If the members decide they want me to build a tee box on top of an oak tree, I'll get three estimates. It's their golf course. On the other hand, if its agronomic, that's why they hired me.

#### YOU'RE NOT QUITE THE PLAYER YOU WERE IN HIGH SCHOOL, BUT YOU'RE STILL A GOOD STICK (AN 11-HANDICAP). HOW OFTEN DO YOU PLAY WITH MEMBERS?

They want you to play golf, but don't overdo it, it's a fine line. You need to make sure everything's right first. That's your job. I tell my assistants they need to play. It gives you credibility with golfers. You don't need to be great, but you need to be good. It gains people's respect.

#### I KNOW YOU'RE IN NO HURRY TO RETIRE, BUT YOU WILL EVENTUALLY. HOW DO YOU WANT TO BE REMEMBERED?

As an honorable person, someone who's straightforward and willing to help, I always try to call the new guy in the neighborhood. During past years, they've been guys like Matt Shaffer, John Zimmers and other terrific guys. John Spodnik, who is now retired from Westfield Country Club, remembered my name when I just started at Canterbury. It meant a lot to me then and I've tried to pass that along. A sense of honor and a willingness to be a friend to your colleagues will take you a long way in this business.

#### SO, WHAT'S THE SECRET? WHAT HAVE YOU DONE THAT'S ENABLED YOU TO STAY HERE SO LONG?

I've been blessed over the years to have really good people on my staff. Some have moved on to other positions, but a lot of them stayed for a number of years. The staff I have now works very well together. I've learned a lot from being a superintendent, but the main thing might be that I'm good at efficiency of operation. I just have to look around and see where people are to know if things are going right. I've always thought I should spend money like it's mine. I try to be very budget conscious. I want to give the club the best bang for their buck.

That's worked out great, because I have credibility with the members. It's the most valuable thing I have. I would never do anything to jeopardize that. You have to be an honorable person and treat people – the members and your employees with respect. **GCI** 

Terry Bonar can be reached at 216-561-0909 at tbonar2@aol.com.

## THE PUSH FOR PERFECTION

Golfers and superintendents strive for the best possible course conditions

Hosting tournaments impacts the turf conditions of Flintrock Falls Golf Course. Photo: ClubCorp

#### BY JOHN WALSH

ven though there's no such thing as a perfectly conditioned golf course, superintendents move heaven and earth to get as close as they can to that impossible standard. Pressure from golfers, owners and, most often, themselves drives superintendents to aim for perfection. From high-end private clubs to municipal tracks, the common goal is to provide the best possible playing conditions.

Different areas of the country react differently to golf course perfection, but clubs that host major tournaments drive the demand for perfection, says Doug Miller, vice president of golf course management for Dallas-based ClubCorp.

"Greens are stimping at 12 to 14 for tournaments but not daily," he says. "You won't find those conditions during the tournaments every day. Those conditions peak after a year of preparation."

Mission Hills Country Club in Rancho Mirage, Calif., Firestone Country Club in Akron, Ohio, and Flintrock Falls Golf Course in Austin, Texas, are three ClubCorp facilities that host tournaments.

"They all produce excellent playing conditions and good visuals to go with that," Miller says.

Almost all of the company's 90 facilities are private with the exception of five public facilities that have been in the company's portfolio for a while. Most of its managed facilities' golf course maintenance budgets fall in the \$600,000- to \$2-million range.

Depending on Mother Nature, having a wallto-wall green course at a higher height of cut is easier and cheaper than producing tournament conditions, Miller says.

"For tournament conditions, you need more control of water, which means more labor, and more money is spent on chemicals because you're putting the plant under pressure," he says. "Brown areas are OK in some cases during tournament preparation because playing conditions are paramount to color. Brown turf is more accepted than in the past. Areas of the country that have water restrictions understand water use better than a place that receives a lot of rain. There will always be places where water is an issue. Those places understand the lush look

isn't always possible."

Tournament or not, perfect course conditions start with greens.

"You treat the greens like a princess, then move out from there," says Jay Willis, superintendent at the 18-hole Glen Eagle Golf Course in Millington, Tenn. "People will still push the conditions and limits. For example, walk-mowing fairways ... that's too much."

#### PRESSURE

As all superintendents know well, stress comes with the job, and whether that stress is self induced or brought on by owners or golfers, superintendents will continue to feel it.

"Members always want course conditions to be better," Miller says. "There always seems to be pressure from the club down the street. Superintendents also put pressure on themselves to do more with what they have to work with. But conditions have improved because superintendents have pushed the limits. Eight to nine feet on the Stimpmeter was fast 20 years ago. Today, it's average at best."

Willis says he puts more pressure on himself than golfers do.

"Recently, when I looked at the course from a distance, it looked fine because it was green, but when I played the course, I was

sick to my stomach because the greens weren't in good condition," he says.

Yet a superintendent who works at an equity-owned club will feel more pressure for perfect course conditions than one at a public course because the golfers have a stake in the club, Willis says.

Mission Hills Country Club produces excellent playing conditions, says Doug Miller, v.p. of golf course management for ClubCorp. Photo: ClubCorp "My director of golf plays all of the courses in Memphis, and as long as the greens, tees and fairways are the best I can condition them, he's OK with that," he says. "He understands I can't do certain things such as weeding around every tree and trimming around cart paths. For awhile, I worked around the clubhouse, designing the landscaping around it. That saved the owner a bunch of money, but it was time spent away from the course. I'm paying for it now because the thatch has built up in the Bermudagrass greens."

Fred Behnke, CGCS, at Mount Prospect (Ill.) Municipal Golf Course, agrees the demand for perfection is self inflicted.

"I see what everyone else is up to when we have local superintendent chapter meetings," he says. "We're a funny group of guys. We'll trade equipment or share a jug of fungicide to get through the tough times, but by the same token, we're competitors. You're always measuring yourself against others.

"If I don't see that prime-time demographic after the regulars tee off in the early morning and if I see open slots on the tee sheet, I feel pressure because I think it's because the conditions aren't measuring up," he adds. "We had nine inches of rain in August. We're a swamp.





I'm under pressure to get golf carts out there, but I'm holding the line."

#### MINDSET

Although under pressure, knowing the golfers who play their courses and being in the right mindset helps superintendents improve course conditions. Glen Eagle, which was built in the mid-1950s as a nine-hole course and renovated in 1999 into an 18-hole facility, sells memberships, so members tend to have more of a concern about course conditions than those who aren't members or don't play there regularly. Willis says the golfers range from young people to seniors.

"It's all over the board," he says.

Previously, Willis worked at a private course in Germantown, Tenn., so he tries to keep up the standards at Glen Eagle.

"I'm thinking about course conditions just like the golfers because I grew up on a country club," he says. "I look at the golf course like a member. I try to bring the experience I had growing up. I'm a 7 handicap. I like tight slopes around greens and fast greens. More superintendents play golf nowadays and manage the course as a golfer.

"We're always looking for negative things to improve on to make it a better course," he adds. "Our greens are good, but we have to triplex them because of labor constraints. If I could walk-mow greens, they'd be a lot better. The fairways have gotten better, but we need to pay more attention to the roughs. Roughs and out-of-play areas get neglected."

Fred Behnke, CGCS, puts pressure on himself to make the conditions at Mount Prospect Municipal Golf Course the best they can be. Photo: Hi-tech Fred

One area of the course Willis improved is the older runway tees. He grew rough in between the tees to separate them and give them definition.

#### **CUSTOMER FEEDBACK**

Golfer input is an important aspect of trying to reach perfect course conditions. For Willis, playing golf with customers to ask questions about his practices helps put conditions into perspective.

"They usually ask about aerification and why the grass is the height it is," says Willis, who has been at Glen Eagle for the past four years. "It's always good to get feedback. I usually wait until the sixth hole to tell them who I am. The golfers here are very reasonable because they understand what I have to work with, even though they're always asking why this course doesn't look like the one down the street."

Willis has a staff of five in addition to six or seven inmates from a local prison. The inmate program is through the Navy, which owns the course, and has been in place since before Willis arrived. Prison labor pays 12 cents an hour.

"I only get four or five hours of work a day from them," says Willis, who works with a maintenance budget of about \$500,000. "I'm constantly training people because they rotate. Only one or two work at a good pace, but it's worthwhile to have the inmates because I need to get the work done."

Willis says the better golfers complain about how true the greens roll and want a shorter height of cut in fairways. Higher handicappers want a higher height of cut in fairways, which is a half inch.

"We go after the better golfers," he says. "Ten or higher on the Stimpmeter is what people expect. The ideal height of cut on fairways is 0.375 inch, but we can't cut it that low because of the higher handicappers. It's the same with tees and approaches. We're not a high-end course. We're a low-end public course."

High handicappers also complain about roughs.

"It depends on the person and how much of a naturalist he is," Willis says. "The rough, which is two inches here, should take the spin off the ball."

Recently, there was a complete bunker renovation at Glen Eagle because the better handicappers expected better conditions. The old sand had a high pebble content.

At Mount Prospect, a golf advisory committee representing men, women and seniors conducts monthly meetings to talk golf, maintenance and operations. Behnke, who participates in those meetings, anticipates golfers' feedback.

"In April, the meeting is about goose poop," he says. "The May meeting is about *Poa* seed heads. We use Proxy and Primo to combat that. The July meeting is related to the club championship. And bunkers are always an issue. I encourage discussion about ball marks and divots, too. We distribute divot repair tools. Currently, high school golf is going on, and the kids don't take care of the course like the residents do."

Like all superintendents, Behnke receives good and bad feedback from golfers.

"I have a couple of customers who think I'm an idiot – four people who will never change their minds," he says. "But the other 98 per-



At Mount Prospect
Municipal Golf Course,
course conditions
have been improved
by walk-mowing
greens, switching to
bentgrass fairways,
grooming regularly and
topdressing native-soil
tees with sand. Photo:
Hi-tech Fred

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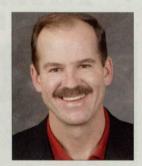
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cent of golfers understand when I explain my rationale if they come to me. I try to be up at the pro shop daily and let people know who I am and what I do."

An example of positive feedback came when a golfer let Behnke know one of the back tees was encroached upon by a tree, compromising the tee shot. So he brought an arborist in to take care of the problem.

"Golfers refer to this course as their club," he says. "When I started here, the quality of the greens was compromised and rebates were demanded. Expectations are high."

#### MAKE IT BETTER

Although Behnke says Mount Prospect, which generates 47,500 rounds a year, has the typical range of golfers that play there, he says it's not a typical public course.

"We hand-mow greens and have bentgrass

fairways," says Behnke, who has been at the 18-hole course since 1987. "We provide upscale conditions. We're a 3.5-star-rated facility by Golf Digest. We've made efforts to upgrade the site. Chicago public golf is competitive. We try to keep up with the Joneses because that's what golfers demand."

The height of cut in the fairways at Mount Prospect, which was built in the mid-1920s, is 0.45 inch, and the greens stimp at 9 to 9.5.

."We can't go faster because of the contours on the greens," says Behnke, whose maintenance budget is \$750,000. "Anything over 10 is exceeding the architectural speed limit. We had a tournament and double cut the greens and got the speed up to 11, but we ended up having six-hour rounds. A good thing happened because the green-speed problem has gone away. Nobody had fun. Nine and a half is a good speed for our greens."

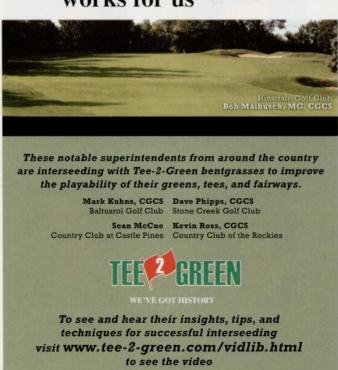
Other things Mount Prospect has done or is doing to try to achieve perfection include changing to bentgrass fairways, forming a master plan (the course needs a new irrigation system, Behnke says), grooming regularly and topdressing native-soil tees with sand.

"It's an additional cost that I hope will provide better drainage," he says about topdressing the tees. "We could spend \$5 million down the road to improve the golf course. We're on the look out for new and better ways to do things. The Park District board and administration (who operate the course) have never said, 'Sharpen your pencil and cut costs.' They don't want to get the phone calls and hear the complaints."

#### **NEGATIVE EFFECTS**

With all the talk about perfect golf course conditions, the negative effects – stress, long hours, remaining under budget, etc. – can be





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detrimental to progress. However, negatives involving golfers' expectations aren't as bad as they were 10 years ago because the golfing public is more educated about course conditions and the stresses that go with that, Miller says.

Superintendent Jay Willis maintains Glen Eagle Golf Course with a golfer's mentality. After all, he's a golfer. Photo: Glen Eagle Golf Course

"Education at the club level, by GCSAA and on TV help reduce those expectations," he says. "Technology has allowed for better overall conditions on all golf courses compared to 10 years ago."

Time away from family is another consequence of the push for perfection.

"I had no family life when I was on bentgrass down here," Willis says. "Ultradwarfs have helped with putting conditions."

#### CONSTRAINTS

Whether private or public courses, big budgets or small, all superintendents have to deal with Mother Nature when trying to provide the desired level of course conditioning, which can make things difficult.

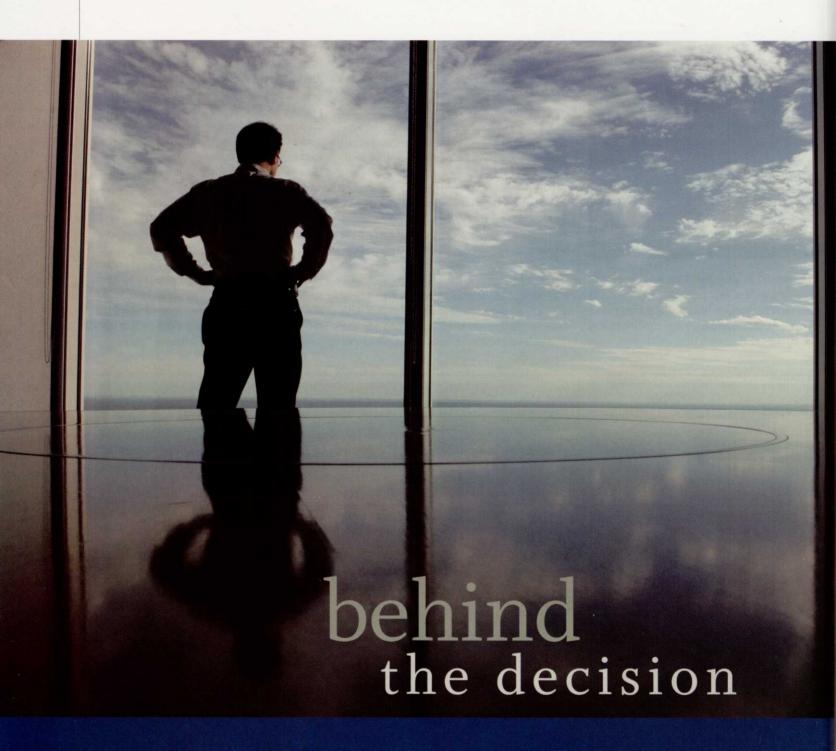
But few if any superintendents have an unlimited budget to manicure a course just right. Most superintendents have to skip some maintenance practice somewhere in pursuit of perfection in the areas of play because of budget or labor constraints. Usually, those things aren't as important to members or are out-of-play areas. An example is native areas, which help superintendents focus on highly maintained areas.

#### TECHNOLOGY

The drive for perfection also is causing improvements in technology.

"Turfgrass will be engineered to do other things, equipment will be engineered to do different things," Miller says. "Superintendents, breeders, manufacturers and members will still force the limits to where we can go, but we'll reach a point when we can't go any farther." GCI





Facilities involve several people, have multiple criteria and use different avenues when hiring the right person for the job KemperSports looks for hands-on people to be superintendents at its properties, such as Bolingbrook (III.) Golf Club. It looks for people willing to work alongside their crews. Photo: KemperSports



#### BY JOHN TORSIELLO

nthony Williams, CGCS, at the Stone Mountain Golf Club in Georgia, remembers the moment clearly. "I was leaving an interview and was actually on the pro shop steps when the owner stopped me and asked me to translate a conversation in Spanish for him," Williams says. "I never faltered and finished the interview in Spanish, and I got the job. I learned a valuable lesson that an interview isn't over until you leave the property, so be prepared for anything."

Sound words of advice from an industry veteran.

At one time, if a person could grow and care for grass skill-fully and was willing to work seven days a week 12 hours a day, he was qualified to be a golf course superintendent. However, the current demands of the job and skill sets owners and general managers need have changed dramatically.

"You have to remember my superintendent oversees a million dollar budget and has 25 to 30 people working under him," says Gary Sciarrillo, general manager at Great River Golf Club in Milford, Conn. "I look for the financial skills to manage a large budget and the people skills to communicate and motivate a staff. I want somebody who will nurture his staff and make them better at what they do, which is to grow grass and maintain the golf course and surrounding landscape."

The hiring process for a superintendent position is often lengthy and exacting. The open position at Great River generated about 120 applications from all over the country. Sciarrillo reviewed about 50 applications and reduced the number of potential candidates to 25 then 10.

"We went to all the courses of the final 10 candidates unannounced, and we wound up reinterviewing five," he says. "The process took several months."

The hiring process for a new superintendent at a Billy Casper Golf-managed property takes four to five weeks, says Bryan Bielecki, vice president of agronomy.

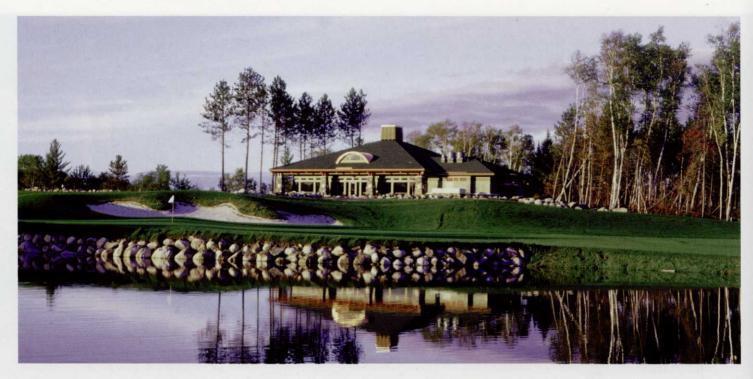
"It varies, and we'll wait a little longer for the right person," Bielecki says. "With the resources we have as a management company, we can move people around to cover a course until the person we want can leave his present position and come on board."

Vienna, Va.-based Billy Casper Golf manages more than 70 properties.

Usually, an owner, general manager of a property or a highranking executive within a management company will serve as the point person for the hiring process, often involving a head professional, director of golf, assistant superintendent and, especially at private clubs, members into the process.

"We make it a collective decision when hiring a new superintendent for a course," Bielecki says. "I often get the facility's general manager and regional manager involved because I want to be sure, from a personality and communication standpoint, the person I hire will be able to work well with his team. And its always important to get input from members at individual clubs about what they would like to see improved at their course and what's important to them."

At an equity ownership club, the green committee might be involved in some part of the process, usually toward the



To maintain courses at its properties, such as The Wilderness at Fortune Bay in Tower, Minn., KemperSports wants people who are staff oriented and good team builders. Photo: KemperSports

end, and at a privately owned club that's run for profit, one is normally dealing with the general manger and owner, says Dave Wasenda, owner of Appliedgolf, a management and consulting company, and general manager of Knob Hill Golf Club in Manalapan, N.J.

The three-year-old, private Hollow Brook Golf Club in Cortland Manor, N.Y., involved the club's board of advisors in the process.

"The candidates were interviewed by the general manager and the board of advisors before their selection," says general manager David Fleming. "A Plotkin test (to measure personality characteristics) was requested of each of the final candidates, and the field was reduced to the top three. A final selection process was conducted with the general manager and the board."

#### **DESIRABLE QUALITIES**

Club members are becoming more demanding these days. According to a poll of more than 800 golf course superintendents conducted by the GCSAA, 66 percent of superintendents inter-

viewed said golfers have increased expectations of their courses. This attitude has been a key factor in increasing course maintenance budgets and superintendents' responsibilities.

"We always say we have five businesses at Great River: the learning center, golf services, food and beverage, the retail operation of the pro shop and the superintendent's business of growing grass," Sciarrillo says. "If you don't have a great golf course, none of the other businesses really matter. So it's vital you have the right person to run that business.

"Our superintendent, Sean Flynn, is out there at 3 p.m. or 4 p.m. with his crew syringing hot spots," he adds. "We're asking a lot from him, considering he's been at the course since 4 a.m., but that's the type of person we looked for. One with a great work ethic, and someone who wasn't going to delegate the work. We have enough bosses around here."

Northbrook-Ill.-based KemperSports is looking for hands-on people to be superintendents, people willing to get out there and work with their crews, says executive vice president Jim Stegall.

"Clearly, the person has to have the agronomic skills and a clear understanding of the type of environment he or she will work with," he says. "But we also want somebody who is staff oriented, interested in developing and maintaining good relations with superiors and is a good team-builder."

When looking for someone to fill its superintendent position – now occupied by Tim Hetrick – Hollow Brook looked for expert knowledge in the field of agronomy and experience with growing and maintaining grass in the Northeast, Fleming says. Leadership, budget and planning experience was important, too.

"We wanted a self-starter," he says. "We needed someone who could communicate effectively with his staff, members and the board advisors. We also felt it was important to find a person with interests outside of the superintendent position. We needed an all around person with many interests."

Naturally, having a solid background with the types of grasses one will be asked to care for is always a plus, although not having worked in a particular geographic region before doesn't necessarily rule a candidate out.

"Obviously, having a working knowledge of the types of grasses that you'll be caring for is a plus, but we aren't afraid to take someone with one season's worth of experience in a particular region who has the right skill sets over someone who has worked with all types of grasses in all seasons but isn't the type of person we need on other levels," Bielecki says. Superintendents are often asked to work long hours, perhaps every day of the week during growing season, so there are special circumstances they must be made aware of during the hiring process.

"Our course was built in an area that had many environmental and government restrictions because of a wood turtle habitat on the property," Fleming says. "There's also a creek running through the course that's a source of drinking water for the local community. Along with these restrictions, we had others that involved limiting the amount of trees that could be taken down during the construction phase and a strict monitoring of our pesticide and fertilizer levels by the appropriate agencies."

Also, technology plays an increasing role in the life of a superintendent, so it's no surprise employees look for that type of experience.

"Technology is playing a larger role in the jobs of all department heads, and the superintendent is no different," Stegall says. "We expect our superintendents to be as effective as possible to drive efficiency and quality. That person needs to stay up on the latest technology and have the ability to use that technology for staffing and project management."

#### SEARCH FOR THE ONE

Management companies aren't afraid to promote an assistant to a superintendent position if the person meets all the criteria they're looking for. Management companies such as Billy Casper Golf and KemperSports often have a large file of resumes they can access, but that doesn't stop them from advertising an opening with a state or national superintendents organization.

"Typically, when we start the process, we try to find someone in the local area, and that's done through the GCSAA's local chapters or our network of general managers," Stegall says.

Appliedgolf will post a superintendent position with a local superintendent chapter to get worthwhile leads.

"Many times we find that an assistant superintendent who's looking to move up will get a letter from his current boss recommending him or her for a head superintendent position," Wasenda says. "They're a loyal bunch and work effectively to get one another promoted. Sometimes the person that fits the bill perfectly is working as an assistant and can slide easily into the head superintendent post."

Management at Hollow Brook placed ads in golf course periodicals and worked through headhunters who deal with finding and recommending qualified superintendents. The club also called regional chapters of the GCSAA and ran an ad for the position on the association's Web site.

"We also received a great deal of interest in the position from people who heard about the opportunity from suppliers and companies the



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club had done business with throughout the year," Fleming says.

#### **ADVICE FOR CANDIDATES**

It's crucial for candidates to be prepared and

thorough when submitting an application and interviewing for a superintendent position.

"I received some applications that had 20-page booklets attached detailing their philosophy of course maintenance and pictures of projects

they had undertaken at their courses," Sciarrillo says. "That kind of information helps in the process because you get a good handle on who the person is and what they've done."



Williams advises candi-

dates to be prepared and demonstrate organization and leadership from the first contact until the conclusion of the hiring process.

"Research the company and/or management before the interview," he says. "Know what issues exist so you can offer solutions for them."

Cutler Robinson, director of golf operations at Bayville Golf Club in Virginia Beach, Va., recommends candidates research the facility, tour it and talk to the architect, builder, staff and managers.

"Have a prepared portfolio that's short yet thorough," he says.

Stegall likes the approach offered by Williams and Robinson.

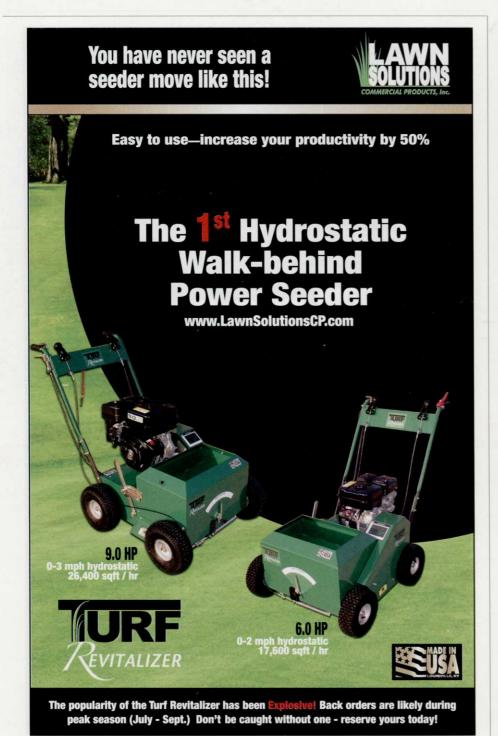
"I'm looking for somebody who's open minded and can demonstrate good problem-solving skills. I want them to talk about the challenges they've had and how they went about solving issues. I like to see candidates who've done their homework on the property they're interviewing for."

Wasenda says it's a good idea for the candidate to walk the course before the meeting to find out if there are any questions he has about the facility. Sometimes, you might find that after the person sees the course, the equipment and financial allocations the club makes toward maintenance, they might make a decision the job isn't the right opportunity for them. You always want it to be the right fit for both sides."

One of the biggest turnoffs for those conducting the interviews is talking about money right away.

"If money is one of the first things a candidate wants to talk about, I'm not interested," Sciarrillo says. "I'm going to give somebody a fair wage, but I want someone who's passionate about the job first and knows that the money and benefits will come." GCI

John Torsiello is a freelance writer based in Torrington, Conn. He can be reached at jtorsiello@ sbcglobal.net.



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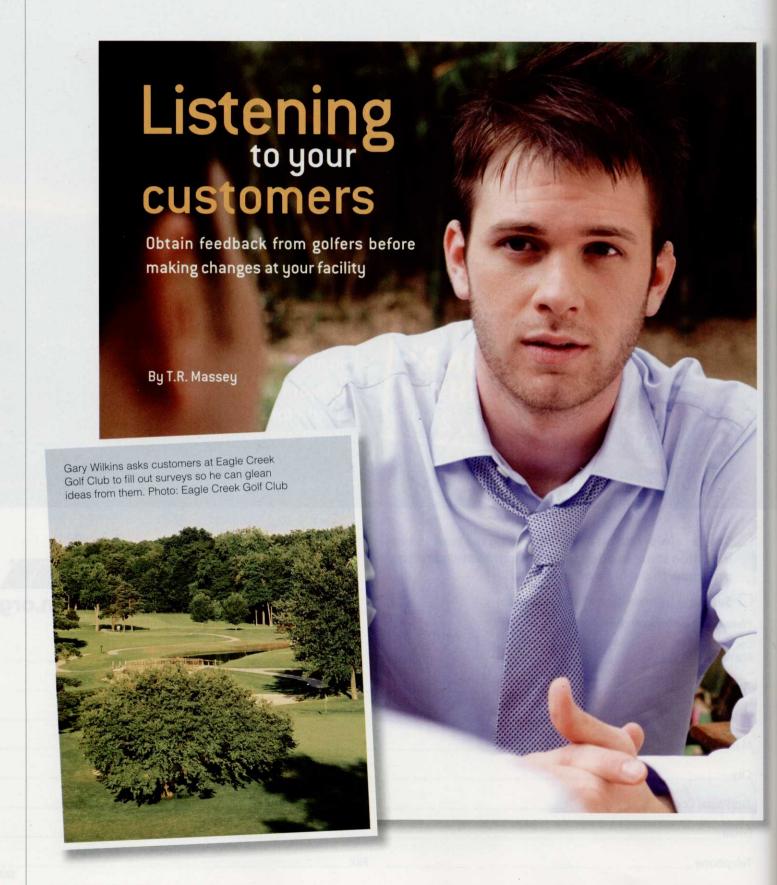
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hort will be the days of the man who doesn't know which way the wind blows. Successful golf course owners/operators know this and realize listening to customers is the way to give them the product they want.

It might come as a surprise to the average golfer, but what he thinks directly influences golf course owners, who know customers vote with their feet, especially at public venues, and pay the bills.

Owners have developed formal and informal ways of listening to their customers. Surveys, focus groups and suggestion cards are dovetailed with simply talking to golfers and employees and appreciating what they say.

ClubCorp has several devices to listen to golfers. Of the company's 160 properties, 95 are golf and country clubs, and the majority of them are private. It's much easier to hear what private club members are saying, says executive vice president of membership Frank Gore.

"Our members are more forthcoming about what they think because they feel ownership," Gore says. "It's part of our strategy to get the members to feel that way."

ClubCorp conducts an electronic member survey asking questions about the facilities and programming at each of the clubs. The survey provides an open response spot that allows members to write whatever they want. Gore says the company receives a high return from the survey.

Each private club ClubCorp operates has a board of governors that consists of members representing different categories – men, women and ethnic groups. They meet as often as once a month but no less than once a quarter. ClubCorp receives a lot of feedback from these groups. Each club also has a minimum of a membership and social committee, from which more ideas are generated.

"They give us the majority of the feedback on programming and amenities," Gore says.

When considering making physical changes to a property, ClubCorp puts together focus groups for ideas. The top request from members is for expanded athletic facilities.

"Thirty years ago, no one asked for that," Gore says. "Back then, the top request was for a men's-only area. Now we get very few requests for that."

The second most popular request is for a

larger, family-oriented casual dining space.

"The grill is too small, and the formal dining room is too big," Gore says. "Thirty years ago it was the opposite."

These member wishes have caused ClubCorp to systematically install athletic components and casual dining at many of its properties during the past four years. The third most requested item is a men's and women's adult area.

"We've been doing a wine bar and some dining," Gore says. "It's a casual space that's separate from the kids."

But not every request can be met quickly.

"Some of this must be done by evolution not revolution," Gore says. "The older members and younger members want different things, so you have to take care of both sides of the equation."

ClubCorp also is beefing up its activity offerings. Aside from golf, tennis and swimming lessons, people want cooking classes and other things they can do as a family because their time is precious, Gore says.

#### WHAT THEY WANT

At its eight public courses, ClubCorp collects e-mail addresses from customers and contacts a small sampling, asking about the experience and how can it improve. "Daily fee is pay for play, so if your product isn't right, you find that out pretty quickly," Gore says. "You hope you have employees that are sensitive to the customer. You hear what people like and don't like. Observation is probably the best way to find out what's going on."

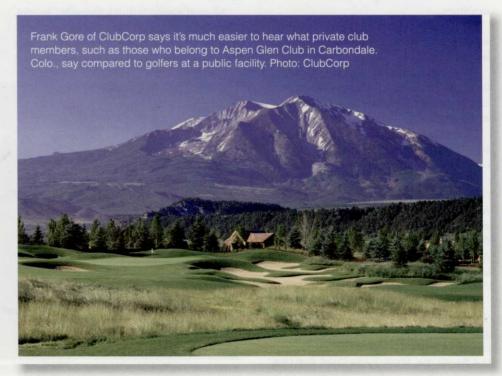
Dick Schulz knows exactly what Gore is talking about. The owner of The Oaks Course, a semiprivate facility in Covington, Ga., Schulz has had his ear to the ground since he bought the property in 1989.

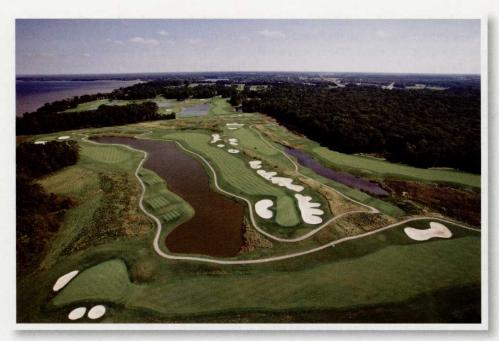
"I listen to customers regularly," he says. "Our staff constantly listens. The food-and-beverage manager, the head pro and the superintendent meet with me once a week to talk about what we heard that week, positive or negative. It doesn't matter what situation you're in – public, semiprivate or private – the man who turns a deaf ear to a customer has lost his mind. Leisure time is dissipating, and people are choosy about how they spend it."

Schulz renovated nine holes and added nine new ones at the request of customers. He installed all new greens in 2005, and now his customers want more putting speed.

"They see it on TV," he says. "Some of them are probably sad they asked."

Schulz has changed mowing patterns and converted a par-4 hole into a par-5 because that's





what his customers wanted.

"We surveyed the membership, and the No. 1 thing they wanted was to change that hole," he says.

Schulz started having members-only dinners on Tuesday nights, and he's considering spreading out his tee times to 12 minutes instead of 10 because of overcrowding complaints on Saturday mornings.

"That has an impact on the number of golfers we get out, but it improves the experience," he says.

Other amenities, such as complimentary towels for members and a bottle of water on the cart when they start, improve the experience as well.

"It's just listening, day in and day out," Schulz says. "Some of it's hard to listen to, some of it's easy."

#### LISTEN CAREFULLY

An owner or operator must listen to customers, says Jim Hinckley, c.e.o. of Century Golf Partners/Arnold Palmer Golf Management in Addison, Texas. The company has 23 private facilities and 25 public ones.

Owner Gary Wilkins believes it's easier to implement change at a public course compared to a private one. Photo: Eagle Creek Golf Club

"It's different for public and private facilities," he says. "With private facilities, you have a regular customer base, and it's much easier. We have active committees along with the board of governors. The members give us great input."

Many people in the industry track customer input at public golf courses differently, Hinckley says.

"All good managers do it informally," he says. "They listen to employees. We'll survey a sampling of our customers, check the e-mail database and find the issues important to them. Then we Jan Holt of Atlantic Golf says it was risky to add forecaddies at a course in Queenstown Harbor, Md., but in a saturated market, a course needs to separate from the crowd. Photo: The Brick Cos.

do a forced ranking of top-10 factors that have meaning to the customers."

By polling customers, Hinckley can ascertain the factors that motivate customers to play again.

"We're able to arrange our programming around that," he says.

But not everyone agrees it's easier to obtain customer feedback at private clubs. At Eagle Creek Golf Club in Norwalk, Ohio, co-owner Gary Wilkins works at the daily-fee course every day. Wilkins asks his customers to fill out surveys and gleans ideas from them.

"It definitely affects what we do," he says.

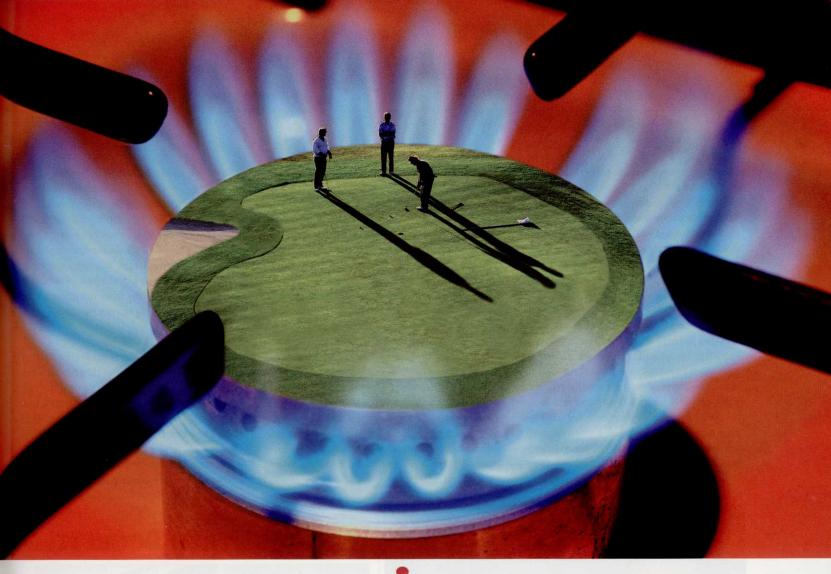
Wilkins believes it's easier to implement change at a public course compared to a private one.

"I just decide it, and we do it," he says. "We don't have meetings with the green committee. There aren't the layers of red tape that come with a private golf course."

To indicate hole locations on greens, Wilkins used to have yellow flags for the front, white for the middle and yellow-black for the back.

"Some people couldn't see them and asked for red, white and blue, so we changed to those colors," he says. "Unfortunately, you can't see the







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blue flags, so we'll need to tinker with that."

But while Wilkins listens carefully to his customers, not every request can be honored. "Sometimes they make a suggestion, and they don't understand what's going on," he says. "It doesn't make sense for the course. If we think it's going to be good for the majority, we'll definitely consider it, though."

#### RECURRING COMMENTS

The Canadian Golf & Country Club in Ashton, Ontario, hosts a bunch of corporate outings and regular public play. But owner and general manager Mark Seabrook doesn't poll the club's 175 annual members or players formally. A couple of years ago, the club ran a few focus groups.

"It was effective but very costly because we did it by third party," Seabrook says. "We received good comments but almost the same comments we've gotten on our own."

When Seabrook or his staff hear the same

comment from more than one golfer, it's put on his task bar.

"As they gain momentum with more people talking about these items, we take a handful of items and show them to our regular members and others and see what they think," he says. "If there's a topic that gets thrown out, say a fairway widened in a certain spot, the reality is there are quite a few groups you can focus on quickly. People like tournament organizers, league golfers, regular members – it doesn't take long to get a cross section of individuals."

For instance, Seabrook has received requests for faster greens, so next year, one of his budget items will be devoted to greens rollers.

Seabrook believes a key to worthwhile customer feedback is in the way questions are asked.

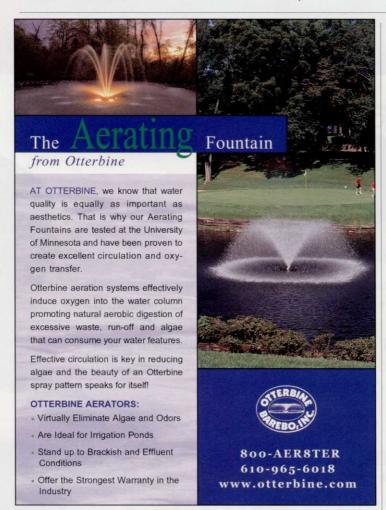
"We try to phrase questions so we don't lead them to a certain answer," he says. "We would say, 'If there were any widening to do, where would you do it?" Seabrook also relies heavily on feedback from his staff.

"It's a clientele that you really didn't think about," he says. "But if they're happy, that's good. After a few weeks of hard work, I find it's good to buy a few drinks for a staff member and ask them what they'd change. You get some really good comments quickly. And when those start to copy what we're hearing from the golfers, then that's when something starts to happen."

#### **CUSTOMER-DRIVEN DECISIONS**

It's not so easy for all owners to obtain customer or member feedback. Those with more than one course will usually find it easier to cut through red tape. It goes hand in hand with the structure of a corporation. For instance, Edgewater, Mdbased The Brick Companies has a golf division, Atlantic Golf, which is finely layered. It owns and operates three different properties.

"Our owners are directly involved," says Jan



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Holt, chief marketing officer. "We have a leadership team, and we all do everything together in the same building and meet biweekly. We talk about these things. Then we make a decision."

Holt depends on general managers and superintendents as part of the information gathering

"I run it past all of them," she says. "If they aren't on board, it's not going to work."

The company constantly is defining market demands.

"We feel strongly to give people what they want, not what we want," Holt says. "They wanted Nike apparel, we got Nike apparel. We added forecaddies at our course in Queenstown, Md. It was a risk, but in a saturated market, you have to separate yourself."

Atlantic Golf surveys golfers daily as they leave the course. If there's a problem, the general manager should handle it on the spot. It also conducts an annual survey of customers who are Players

Card (a loyalty program) holders and receives about 1,500 responses.

"We try to capture every bit of information we can," Holt says.

Players asked for better practice facilities, so Atlantic Golf built them. Customers wanted the golf course maintenance practices to be more green, so they use chicken scat as fertilizer. Atlantic Golf also recycles and uses rain barrels and testing wells.

"Environmentally, we started before the green movement came, and now everyone's on board," Holt says. "We listen. Our Web site has a million places for customers to give their suggestions. We collect them. They don't get dumped."

#### THE REAL BOSS

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Ralph Stading, owner of the Lewis River Golf Course in Woodland, Wash., has a fine ear for customers' ideas, too.

"After you've been around the business for

a substantial time, you realize golfers are your real boss," says Stading, a second-generation golf course owner. "Some poll their customers as a fine art, and others listen to the cash register. We try not to wait until someone decided to leave before we change what's happening."

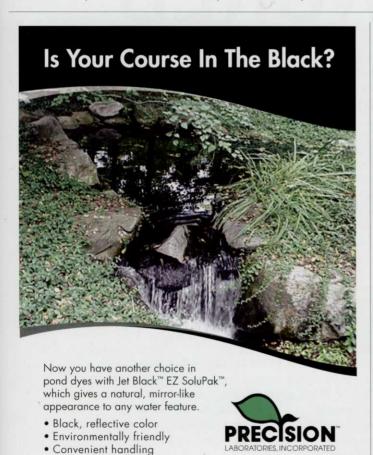
Simply talking to customers is Stading's best chance to learn, he says, and he knows a trick of the trade.

"I ask if they heard of someone with a problem," he says. "They'll respond to that in a more neutral way than if you ask them directly if they have the problem."

Like many other owners, Stading knows which way the wind blows.

"The customers pay the bills, ultimately," he says. GCI

T.R. Massey is a freelance writer based in Columbus, Ohio. He can be reached at trm@ columbus.rr.com.



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## WORLD

BUDGETS, LABOR AND **ENVIRONMENTAL ISSUES SHAPE AQUATIC HERBICIDE MANAGEMENT PROGRAMS** 

anaged well, ponds add to the aesthetic quality of a golf course, provide drainage basins and support irrigation. Water features often add sound and movement, cool the surroundings and provide a haven for wildlife. Last but not least, ponds might come into play, adding another challenging dimension for golfers.

On the other hand, ponds invaded by weeds and algae detract from the golfing experience and affect golfers' perceptions of course quality. Yet the nature of water features adds to the likelihood of weed encroachment. Ponds are usually small and shallow, allowing sunlight to penetrate, creating warm water that encourages weed growth.

The basics of pond management could be covered in a 101-level class (see info box on page 58). Yet each pond is essentially its own complex environment. Savvy superintendents combine the basics of pond management with observation, planning and implementation to fit the unique needs of their courses. A management program needs to be effective for the type of aquatic weeds and algae and be workable within the limitations of budget and labor availability. It also must be in compliance with governmental regulations from the local to national level.

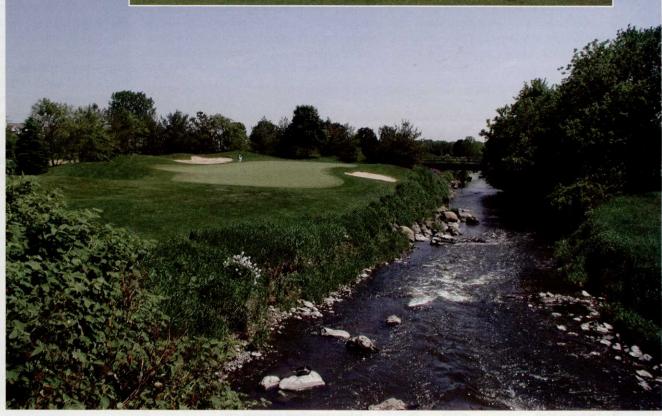
#### **DUCKWEED AND FILAMENTOUS ALGAE**

At Milburn Golf and Country Club, an 18-hole championship course in Overland Park, Kan., there are two ponds - one is an acre, the other an acre and a half - that Bill Maynard, CGCS, and assistant superintendent Danny Huntsinger manage. Each pond is equipped with a two-horsepower pump and fountain for continuous water movement, which is one of the preventive components of their weed and algae management. Another is the buffer zone of turf-type tall fescue and Kentucky bluegrasses that surrounds both ponds. The width of the buffer zone varies but averages about 14 feet. For the area of the buffer zone that's in play, the crew uses string trimmers to maintain the height at 3.5 to 4 inches.

Duckweed and filamentous algae have been recurring problems with pond maintenance at Mulburn Golf and Country Club (right). Each requires a different product to manage. Photo: Milburn Golf and Country Club

At Seven Bridges Golf Club (below), the only problem with pond maintenance is surface algae along the shoreline when rainfall is inadequate. It's treated with copper sulfate. Photo: Seven Bridges Golf Club





"The aesthetics at that height fit the park-like look of our course," Huntsinger says.

Maynard and Huntsinger also have a border collie to help rid the course of geese.

"Keeping that population away reduces the nitrogen levels in the ponds," Maynard says. "We can tell through scouting when the ponds will start to act up based on temperature levels and the degree of sunlight each receives.

"Duckweed and filamentous algae have been recurring problems," he adds. "We use a liquid aquatic herbicide (Reward) for the duckweed and pelletized copper sulfate for the algae. We plan the timing of applications primarily for prevention, making the first application just as active growth becomes visible in July and the second in August."

Though Maynard and Huntsinger hold all pertinent pesticide application licenses, there are no special aquatic licenses required in Kansas, and the control products they use aren't restricted-use pesticides. Still, one of the two makes or supervises the applications, which are made from the banks of the ponds using a handheld sprayer. Both ponds can be treated in about 45 minutes - five minutes travel time and 20 minutes at each pond. The product costs about \$1,500 for a year's supply.

Additionally, Maynard and Huntsinger are planning to add a black dye application to their preventive program.

"Area superintendents are reporting good results with Black Oynx and LochNess," Maynard says. "The darker water reduces the photosynthesis, thus limiting vegetative growth. Though black dye doesn't sound too pleasing aesthetically, it actually produces an almost mirror-like effect, reflecting the sky."

#### ALGAE AND SHORELINE WEEDS

The 18-hole Leavenworth Country Club in Lansing, Kan., has two ponds - one is bigger than four acres, the other is about one acre - and neither is used for irrigation. Buffer zones consisting of a turf-type tall fescue base overseeded with wildflowers surround the ponds and range from 5-feet to 150-feet wide. The narrower sections of the buffer zones are cut to an 8- to 10-inch height with string trimmers, making it a playable rough. The wider areas are out of play.

"We allowed the widest section to naturalize as part of a budget cut, converting it to a no-mow zone to reduce operating costs," says superintendent Mike Boaz. "We spot spray any noxious weeds, such as thistle, within the buffer areas but do little else maintenancewise. It's become a haven for wildlife. It also serves as a filter because water flows from the course through the buffer zone, is channeled into the main pond first, then into the smaller one."

Triploid grass carp serve as a biological control agent for the submerged aquatic weeds. There were some carp in the ponds when Boaz started working at the course eight years ago. Since then, he's introduced between two and three dozen small grass carp each year.

"Despite those preventive measures, we've had an ongoing problem with algae that we've needed to control aggressively. We've also had to control shoreline weeds."

Boaz, a certified pesticide applicator, treats the algae and weeds with Cutrine and Reward mixed together for surface applications using a 25-gallon electric sprayer. He uses a small, hand-paddled rowboat to work across the ponds, then travels around the shoreline to treat the weeds. Two individuals are needed in the boat, one to row and one to operate the sprayer. Boaz supervises those making the applications, each of which takes three hours from start to finish.

Previously, Boaz allowed some of the shoreline weeds to remain in the shallowest areas to lessen a more pressing problem - algae.

"In years past, we needed to treat every three to five weeks, depending on the water flow in the ponds," he says. "This year, we began our attack earlier, making the first application in the spring just as pond temperatures warmed to the point of triggering growth. We followed with a second application about three weeks later. Despite erratic rainfall, we haven't had to treat again. It appears we've knocked the algae down enough so there's no incubation population sufficient to reestablish."

The savings are significant, Boaz says. The aquatic products had been equaling about 25 percent of his total chemical budget - between \$7,000 to \$9,000 a year. This year, it's about \$2,000.

#### MITIGATED WETLANDS

The 18-hole Seven Bridges Golf Club in Woodridge, Ill., borders the Green Valley Forest Preserve and the east branch of the DuPage River. The club's course features a tributary creek, a lake and three ponds. The entire water surface is equivalent to 32 acres. The course serves as a storm water management system for the village, releasing controlled amounts of water into the

#### Resources for aquatic herbicide management

- · Internet resources can provide information about everything from the basics of balancing the pond environment to the identification of specific aquatic plants and algae to the details specific herbicides.
- The USDA National Invasive Species Information Center includes an Aquatic Species section: www.invasivespeciesinfo.gov/ aquatics/main.shtml.
- The U.S. Army Corps of Engineers Aquatic Plant Information site provides aquatic-plant specific information: http://el.erdc.usace.army. mil/aqua/apis/apishelp.htm.
- · Invasive Plant Management in Florida Waters contains a section about aquatic herbicide control: http://plants.ifas.ufl.edu/guide/ herbcons.html.

- · Washington State Department of Ecology's Aquatic Plants, Algae & Lakes covers aquatic plant identification and management: http://www.ecy.wa.gov/programs/wq/ links/plants.html.
- · AquaPlant from the Texas Cooperative **Extension Department of Wildlife and** Fisheries Sciences at Texas A & M University offers aquatic plant and algae identification by common name and a visual identification: http://aquaplant.tamu.edu/database/index.

Editor's note: Part of an aquatic herbicide management program must include a review of the current regulations issued by governing agencies at the national, regional, state and local levels. Don't assume all Internet postings are up-to-date.



Some of the ponds at Thunder Hill Golf Club are deep enough and have enough slope on the edges to reduce aquatic weed encroachment. Photo: Thunder Hill Golf Club

river downstream.

"Our ponds are mitigated wetlands," says Don Ferreri, superintendent and manager of the course. "We worked closely with the Army Corps of Engineers from the design concept through construction. We embellished a couple of the ponds, relocating the fish temporarily and then reintroducing them."

The buffer zones surrounding the ponds included in the original design meet Clean Water Act regulations. The zones are a combination of tall fescues and wildflowers. More wildflowers have been reintroduced periodically to keep variety in color and texture. The buffer zones add a challenge for golfers and beautify the setting.

"It certainly enhances our wildlife, attracting land and aquatic creatures," Ferreri says. "We've had an Audubon connection from the beginning and have completed four of the six steps for certification."

The original design was planned to keep the ponds in balance, and it's working, Ferreri says.

"We have very low maintenance in the aquatic area," he says. "The only problem we've had is some surface algae along the shoreline when rainfall has been inadequate. We've treated that with copper sulfate in a granular form broadcast from the shoreline."

Ferreri is a licensed pesticide applicator. Any applications are made under his supervision.

#### A FISH HATCHERY

One golf facility that has more ponds on its course than most is the 18-hole Thunder Hill Golf Club in Madison, Ohio. It has 67 ponds, partly because the property was used as a fish hatchery before it opened as a golf course in 1976. More than half of the ponds still are being used as a fish hatchery. The course stretches across 200 acres, including about 50 acres of ponds. About 20 of the ponds are tied together to feed the course's irrigation system.

"Some of our watershed flows into the Grand River Basin, but we haven't had any issues with regulations or restrictions because of the attention paid to maintaining balance within the aquatic environment," says Todd Bishop, CGCS, PGA, who serves as the general manager and director of golf operations.

The fish hatchery ponds are leased to Jeff McKinney, who manages them and works closely with golf course superintendent James Rensel on the overall management program to ensure nothing jeopardizes the water quality or fish population.

The ponds are deep enough and have enough slope on the edges to reduce aquatic weed encroachment. Several of the ponds also have white amur (grass carp) that feed on submerged vegetation. Buffer zones around the ponds vary in width from 10 to 40 feet. The buffer zones started with a fescue base that has become naturalized gradually.

The only herbicide needed to date has been Reward. It's applied only as needed as a spot application using a hand sprayer or a wicking tool. An application is made in late spring as temperatures warm. A second spot treatment might be needed in late summer.

"Our two licensed pesticide applicators are trained in aquatics and know which weeds to target," Bishop says. "Because of the number of ponds, the process is time consuming, requiring around 40 hours for each application. The product cost is about \$500 per application." **GCI** 

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## BUILDING ISSUES

GCBAA members discuss the impact of poor water quality and appropriate budgeting on construction

ditor's note: During the annual summer meeting of the Golf Course Builders Association of America, which was in Monterey, Calif., this year, Golf Course Industry hosted a roundtable with six GCBAA members to discuss the golf course development industry. Participants were Glenn Caverly, president of Golf Course Construction in Howell, Mich.; Bob Bryant, president of Bryant Taylor Gordon Golf in Costa Mesa, Calif.;

Oscar Rodriguez, vice president of Weitz Golf International in Temecula, Calif.; Klaus Ahlers, golf sales manager with Colton, Calif.-based Leemco; Wayne Massey, president of Medalist Golf in Cumming, Ga.; and Willie Slingerland, sales manager for Dallas-based Flowtronex. The following is an excerpt from the discussion.

**GCI**: Describe your main challenge in the current environment and what you're doing to overcome that.

**CAVERLY:** Our biggest hurdles today are environmental permits and getting paid for projects.

**GCI:** Is there anything you can control about either of those?

**CAVERLY:** No. I wish we could. Bureaucrats are becoming tougher about regulations. We've been on jobs that take as long as five years to receive permits. We've conducted studies in the past, and maybe we need to redistribute those to the environmentalists to let them know how



BY JOHN WALSH

good golf courses are for communities.

BRYANT: The challenge we face is the one we've faced for many years, but it's getting to be a serious problem. It's the availability of water and water quality, particularly in the western part of the U.S., but that's been expanded to all parts of the country. Water quality has continued to decrease, and that affects us two ways. One, if water quality decreases, it affects agronomics and the equipment because it doesn't last as long. Second, it increases the cost of the systems

we design because, when trying to minimize waste, it requires more sophisticated irrigation systems. We're constantly balancing having too many bells and whistles yet having adequate technology in place to control water.

**CAVERLY:** Another key is the development of useful technologies and tools to take ocean water, brackish water and poor-quality well water, and treat it to make it useful from an agronomic standpoint so it's good for the turf.

BRYANT: It's a challenge that faces all parts of the industry. It affects the contractor and its bidding. It affects the agronomics, not only initially but long-term. It affects the research and development that's being done on turfgrasses and how these turfgrasses are maintained.

**GCI:** At this point, is it a crisis, or do you see it becoming one during the next few years? Do you



#### **COURSE DEVELOPMENT**



Clockwise, from top left: Glenn Caverly, Klaus Ahlers, Willie Slingerland, Wayne Massey, Oscar Rodriguez and Bob Bryant discuss how water quality impacts the cost of building golf courses. Photos: John Walsh sense the industry is adapting to this problem?

BRYANT: It's a crisis in some parts of the country simply because some golf courses can't move forward because they can't get a permit to have a reliable water source. In some parts of the world, they start building a golf course without having permits in place to have a water source. China is a prime example of that, Mexico to a certain degree and even in the U.S. We've been involved in projects in which developers weren't quite in place with their water source and struggled with the project because of that.

RODRIGUEZ: It's also affecting the standards in golf course construction. As we migrate to the Dominican Republic, for example, they're using paspalum grasses that are more tolerant to salt water. But you don't get the quality of USGA construction on greens. It has a counter effect. The USGA standards for greens construction no longer apply. The water availability isn't there. Without paspalum grasses, we couldn't build some golf courses that are being built today.

**GCI:** Is the USGA is willing to change its specs because of water quality?

**RODRIGUEZ:** I don't think they're going to change them, but when you're looking at it worldwide, you have to make some concessions.

**CAVERLY:** You have to make adjustments from region to region based on water, and in many cases, the availability of materials you have to use in construction to begin with.

BRYANT: What we're having to do because of water quality is continue the soil profile that we've created. We can fan the profile we've used in greens into the fairway and, in some cases, into the rough just to have a surface in which we can control percolation rates because even with paspalum, the less uniform the water distribution, the higher the salts come up. There's been a lot of talk about salt intrusion and salt-affected turfgrass. It's back to irrigation systems again. We've been forced to move sprinklers closer and closer to maintain higher distribution uniformity to push salts down.

**RODRIGUEZ:** It goes back to getting paid projects off the ground. We started budgeting golf courses and throwing out current irrigation budget numbers. We need to sit back and rethink if it makes sense or not to have that project.

CAVERLY: What we're finding frequently on the construction side is that owners are projecting budget numbers based on other courses that have been built. And when all this stuff comes up, that's where we all get in a pickle because when the true numbers come out, we're four or five million dollars short. It's almost like the consultants don't do enough homework up front to let the owners know what a true dollar budget is that they need to deal with.

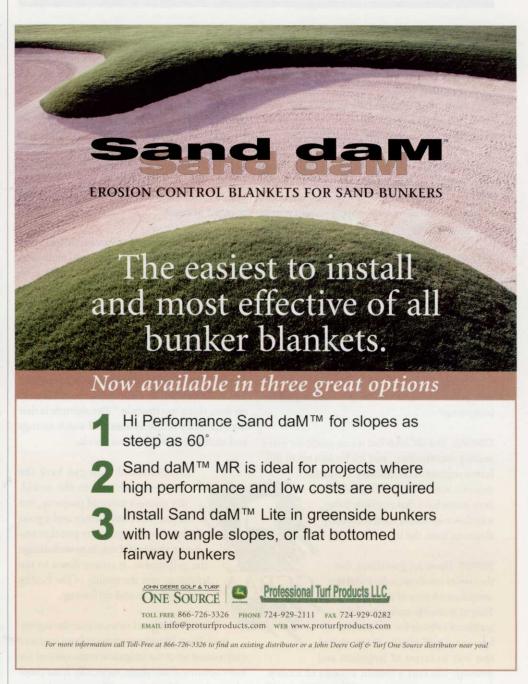
Every job's different, every piece of property is different. It's county to county, city to city anymore. There are different soil and water properties that need to be dealt with. So there's a lot more research that needs to go into preplanning and prebudgeting a golf course today.

**SLINGERLAND:** When you're dealing with these higher salt contents, you're not using standard equipment anymore. You're using pumping systems that are completely made out of 3/16 stainless steel, which is three times the cost of a regular station. You have to use special fittings just to handle the high salt content or the acidic

water, whatever it might be. Even the sprinkler heads have steel springs and 3/16 instead of 304 plungers. All of these things continue to add to the cost. You don't see them in most cases, but they keep adding up. If you do a job in the

Dominican versus a job in central Texas, it's not even remotely in the same price range.

**AHLERS:** We're changing over from standard iron to almost everything being epoxy coated. We



www.golfcourseindustry.com/readerservice - #38

#### "We're changing over from standard iron to almost everything being epoxy coated. We started it because of water conditions ..." - KLAUS AHLERS

started it because of water conditions and fertigation injection, acid injection, things of that nature. We changed all the internals to stainless steel. You can't look at this and say they've got good water and everything's all right and not think that in the future if the quality of reclaimed water deteriorates everything will fall apart.

BRYANT: Remember it's not just water. It's a combination of water and soil. Both of those have to be analyzed for what the total effect of that profile will be when you apply certain water to a certain soil.

AHLERS: In some cases, the soil conditions are as bad as the water conditions for salinity. It's easier to epoxy in and out, otherwise you're going to tape it off and separate it. In some places it has been done that way. The stuff we shipped years ago to Saudi Arabia was like that, and Hawaii has always been that way because of the soil conditions.

GCI: What are some challenges with regard to budgeting?

CAVERLY: The GCBAA has a cost guide for estimating construction, and it's broken up in different regions of the country. It's based more on true numbers not guess numbers, so we have that available today, which is a lot closer than somebody shooting from the hip.

BRYANT: Those are guidelines. But the owner needs to understand the unique conditions of the property. They also need to understand the architect's vision for the project because a golf course that's routed one way in terms of irrigation and drainage can cost a certain amount of money. For irrigation, one linear project can add 20 percent more mainline pipe to get from one place to another if it's a long, linear housing site. Those are the things owners don't always realize. The individual aspects of the project need to be understood in terms of water, soil design and everything else. And quite often, the owner already has a budget before he has hired an irrigation designer. There are still owners who believe in a certain number because they've heard that number kicked around forever.

GCI: Are architects setting the owners straight in terms of cost?

AHLERS: There was case in North Carolina recently in which there were several architects who didn't see any value in the irrigation. A good, well-known irrigation consultant, who was actually brought in by the architect to begin with, made a presentation to the board. Everything looked fine with the budgets. Then the architect comes back in and says, "That's ridiculous. You don't need all this stuff. There's way too much stuff on this system that you don't need. We can put in more bunkers and tees or do something worthwhile." The attitude is that the efficiency of the system and water savings and stuff like that is just too much.

> SLINGERLAND: You can have the greatest architect in the world, the greatest piece of property, but if you don't have water and a good distribution system to put that water on that turf, I might as well design the golf course. It comes down to the irrigation and the quality of the facility you're going to end up having.

BRYANT: The good news is that during the past 20 or 30 years architects have come to understand what the irrigation costs are and are more realistic about them, especially from those who understand agronomy. There are architects who understand design and have a vision, and there are those who not only have that but also have an agronomic understanding or a staff that has an agronomic understanding of running the course. Those that have that also realize the costs that are involved, and it's the age-old story that you have to spend the money on the irrigation and drainage upfront because that gives you the long-term value on the project. Otherwise, you end up with golf courses that have had to add an additional million dollars worth of drainage, and that's a shame when that happens. That's not always the architect's fault. Sometimes the architect tells the owner, and the owner isn't always willing to spend the money.

GCI: Are the builders and contractors brought in early enough in the development process?

**RODRIGUEZ**: It's a disservice if the architects don't educate their clients on the budget side. Many of these architects have their preferred contractor. But I don't remember ever having an architect call saying, "Hey Oscar, there's no commitments here, but I have a project. What do you think?" Most contractors would be happy to say, "Yeah we'll do that." If they want us to sign on the dotted line about it, that's a different story.

GCI: You can catch red flags early on, right?

RODRIGUEZ: Sure. Recently, we were bidding on a project in Northern California. I went to the site, and they were turning over the topsoil right into everything. I called this person and said 'Hey, I just want you to know I'm not going through a proper RFI because this is what I see. This soil is what you want on top. You've got to strip this.' He says, 'That's a budget cut. All these prices - PVC, copper - have gone up so we've got to find a way to cut cost.' I said 'You're making a lifetime decision about this golf course.' I'm not blaming the consultant because maybe the architect told him that. He was making a budget decision. Maybe he was stuck with that budget.

The architect should make a better attempt to contact builders and say, 'Hey guys, just give me your budget for this so we know if we're in the ballpark.' I do that on irrigation systems. I'll call Bryant Taylor Gordon or Marvin Mills and say 'Hey guys, give me a ballpark figure?' so I don't go in with a budget and do what I'm complaining about with other architects.

MASSEY: I don't know of any builder who won't offer those services a year and a half to two years in advance and give these guys ballpark numbers, some real numbers.

BRYANT: The most successful projects we've been involved in have been when we're part of a team, whether that was just the architect and us and the number of builders that were being considered. Usually, when you have that team together and the agronomist, you have the opportunity to establish a budget, evaluate it and then choose what things are worth considering, cutting or saving here and there and what things are detrimental to the project long term.

GCI: What areas can you cut that won't negatively affect the project long-term?

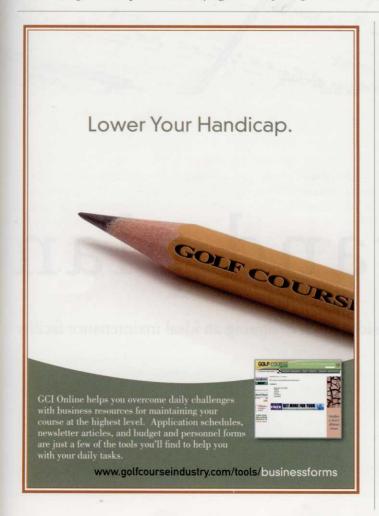
AHLERS: It depends on the soil conditions. Oscar had a good example. You're burying the topsoil underneath. Just moving dirt without considering what it costs you to stockpile it and put it back to what your long-term costs are is ridiculous. But somebody's got to hear that and understand the situation. When I was still doing construction, it was ridiculous to see these guys with the attitude of 'I'm not even going to be around here for this long-term thing. I want my \$100,000 premium lots around this golf course. I'm not going to maintain it. I'm not going to take care of this thing later.' And then they wonder why nobody's playing the golf course and why members are leaving.

RODRIGUEZ: Two or three years ago, I started on a trend of sand-capping everything. It was eight to 12 inches of sand. It's expensive to plate the entire golf course with that. Well, that seems to have gone away because of budget reasons. I haven't done that lately. Something as simple as repricing tee sand with masonry sand or straight sand. Those kind of things make sense.

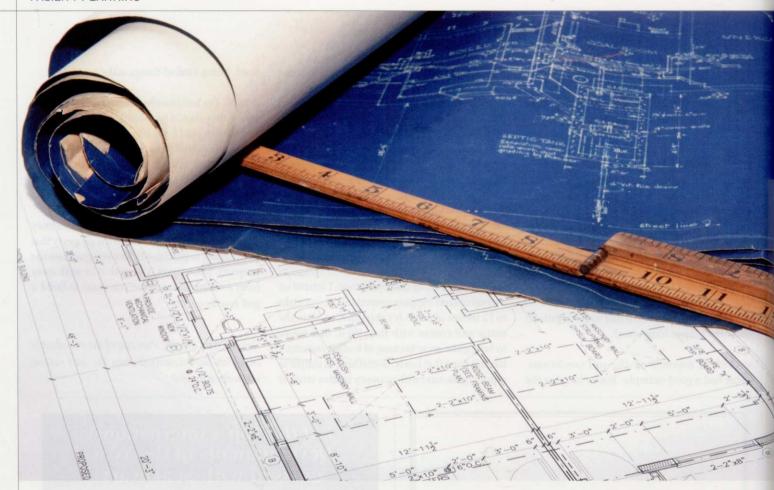
BRYANT: I've been involved in a couple of projects where they should have sandcapped and didn't, and they've paid for it 10 years later. An option is to sandcap, and if that option is too expensive, then another option is to consider stripping the topsoil and screening on site. Again, it's so specific.

CAVERLY: It's almost to the point where they need to take consultants out to the property that you're going to purchase before you purchase the property. Sometimes it's worth it to walk away from a chunk of land that you want to build a golf course on. GCI

Coming next month: Part two of the roundtable in which participants discuss the golf course renovation market.







## a grand plan

There's much to consider when designing an ideal maintenance facility

Maintenance facility design should attempt to accomplish three primary objectives: provide a safe environment for workers, allow for optimal efficiency and reduce risks to the immediate environment. Photo copyright: Branko Miokovic (istockphoto)

#### BY MICHAEL VOGT

he challenge for golf facility operators is to deliver a high-quality golf experience continuously and manage costs effectively. Delivering a quality golf experience ensures a golf operation retains its loyal customers and supports maintaining a positive revenue stream.

However, operators don't always consider golf course conditions as a competitive necessity and don't plan the facilities that support golf course conditions, specifically the maintenance facility or turf-care center.

Operators can expect to spend \$35,000 to \$78,000 per hole maintaining a golf course. These figures include payroll, supplies, employee taxes and benefits. Additionally, facilities have made significant investments in maintenance equipment. Many clubs have more than a million dollars worth of equipment and related maintenance items needed for a smooth operation.

#### **DECISION MAKING**

With all golf facilities, the first priority is the golf course. The second priority are those areas highly noticeable to a club's membership or the public, such as the clubhouse. The golf maintenance facility is overlooked often. However, it's imperative leadership reach consensus that something needs to be done.

A method facilities can employ is the use of a strategic/business plan, which would identify issues and clarify goals. A plan establishes a timeline when the issue should be studied and a recommended solution proposed. Then a person or group is assigned ownership of the task. When a business creates a written record, it's usually followed and most issues can be addressed before they become major problems.

The task of analyzing and studying the maintenance facility normally is assigned to a planning committee, green committee or ad hoc golf planning committee. The task of reviewing the maintenance facility occurs in conjunction with a golf course improvement project. Ideally, this committee is composed of past and present members of the green committee and the board of directors, who represent every segment of a club's membership. For technical expertise, the committee also might include the golf course superintendent.

The committee also should include the appropriate specialists such as a golf course architect and an environmental specialist. For those committees assigned the task of analyzing the maintenance facility, the participants within this group will change.

The committee's initial tasks are to study the condition of the existing maintenance facility to determine the scope of work needed in a master plan. From here, an improvement plan for the maintenance facility can be developed with prioritized issues. Then the committee can develop probable cost estimates, which include construction costs and contingency amounts such as cost overruns and an estimate of the financial impact on the golf operation.

The committee also is responsible for com-

municating with the membership and other parties interested in the project's development. In a private club environment, space should be dedicated within the club's newsletter for the chairman of the planning committee or other officer to provide project updates. For municipal and daily-fee operations, the manager/owner is the primary decision-maker regarding the project, consequently consensus is achieved more easily. Within this streamlined environment, it's helpful to have experienced individuals available to assist with the plan's development.

#### A FINANCING PLAN

With a private club, developing financial options is the most critical success factor in cultivating membership support and approval for capital projects. The most preferred methods of funding a capital improvement are:

Monthly capital dues increase. A club uses a capital dues increase to finance a loan. The advantage of this is that most members prefer a low monthly payment in lieu of a large one-time payment. A member is excused from future payments if he leaves the club. The disadvantage of this financing method is that a loan will put a club in debt, and future member resignations could threaten a club's finances.

Nonrefundable assessments. The total project cost is divided equally among all golfing members and paid immediately. The advantage of this is that the project is immediately paid for. The disadvantage is it's the most unpopular method of securing funds with a membership



An example of a maintenance facility within the interior of a golf course. Photo: McMahon Group

because the high initial cost, and it forces the current membership to pay most of the cost.

Refundable assessment. The upfront assessment can be made more marketable to a membership if the club provides a refundable feature that becomes effective if a member leaves the club. It's recommended the refundable amount be depreciated during the life of the project. Experience shows the depreciation feature has little impact on gaining member approval for the project, but it will support the club's future financial profile.

Cash flow from operations. At times, facilities will set aside a portion of their revenue in a capital reserve fund that's been created for improvement projects. For private clubs, initiation fees or funds generated from a monthly capital fee is normally the source of this revenue. For others, a percentage of green fee revenue might be set aside to fund capital projects. Ideally, operating surpluses would be used to finance golf projects.

The important point is for the owner/operators to monitor their cash flow from operations carefully. The primary revenue source for municipal golf operations is tax revenue. As with private clubs, it's important for a municipal operation to explain the benefits to the taxpayers of the community clearly.

#### **FACILITY DESIGN AND CRITERIA**

It might be necessary to use a third party to review the existing facility, provide recommendations and prepare communications for a project related to the maintenance facility. One type of service includes visiting a maintenance facility, reviewing the site and floor plans, conducting a needs analysis, reviewing the maintenance schedule and staffing levels, then comparing the facility to the strategic goals of the course. Along with this analysis, a report can be generated to include an architectural solution and an opinion of probable cost, an outline of specifications and how to proceed with improvements. This process will identify the facility's shortcomings and propose a solution.

Another type of service is less expensive but still requires a site visit. It includes reviewing the golf course, staffing, maintenance facility site and building floor plans; conducting a needs analysis; and providing a recommendation based on a review of the site and floor plans of the maintenance facility.

Maintenance facility design should attempt to accomplish three objectives. One, provide a safe environment for the employees of the club and golf course. Two, allow for optimal efficiency by the maintenance staff. Three, reduce the risks to the immediate environment. Improper handling and disposal methods at a maintenance facility can create serious environmental problems and potentially expose members and owners to legal

It's essential the facility is well conceived and organized, otherwise a club could be living with a maintenance facility that's wasteful, fails to address the needs of the operation and exposes the club to legal liabilities, which could include penalties and fines.

#### **DETERMINING THE SITE**

Consider a few planning issues when selecting a site for the maintenance facility. For new and existing courses, site identification is important to the design and efficiency of the facility. While some courses will attempt to centrally locate a maintenance facility within the course (see photo at right), other clubs don't have this option. Consequently, the location of the maintenance facility is on the border of a club's property, sometimes next to a residential area. Regardless of the location, the site should have enough space to allow for ample traffic circulation. When deciding on a location, several key questions should be answered:

- · Does the site provide enough space for buildings the size you want?
- · Are there utilities nearby?
- · Is there space on the site for fuel storage and dispensing?
- · Are natural water sources nearby?
- · Is there sufficient space for chemical and fertilizer storage and equipment wash areas?
- · Is there sufficient space to allow for the primary structure, ancillary buildings, the delivery of supplies, storage bins and wastegathering areas?
- · Is there enough space to provide employee parking?
- · Is there enough space for a loading dock and
- · What are the anticipated reactions from neighbors?

It's equally important to know if the site being considered is on a floodplain and is suitable for construction. At times, this critical piece of information is overlooked and causes problems when it's time to secure building permits.

Also, determine if the area is concealed from the golf course. This is usually a consideration when the quality aspects of the operation are reviewed. Whether or not the initial site analysis is favorable, it's advisable to have a secondary location in mind in case an unforeseen circumstance eliminates the first choice.

For maintenance facilities that care for more than 18 holes, the floor space for each key area should increase 50 percent with the exception of the administrative office spaces.

#### **BUILDING, SITE REQUIREMENTS**

A few planning guidelines should be considered when designing and building a maintenance facility. A total of 10,000 to 13,000 square feet should be allocated for the main structure. Administrative space, primary equipment storage, the mechanics area and possibly an irrigation storage room would be included within the primary structure. The chemical and fertilizer storage building should be separate from the main building. Construction materials should be chosen based on local and federal codes. When reviewing the operation of the site, it's critical all government requirements are verified to ensure code compliance.

Other planning characteristics:

- The outside area should be paved to support the delivery of equipment and supplies by large trucks. A paved area allows for easy pickup of waste.
- Fuel storage areas should be above ground.
- Outdoor covered storage bins should be used for sand and soil.
- A greenhouse should be included if it's feasible.
- Waste and Dumpster areas should be included. Consider excavating and paving a bay that puts the top of the Dumpster at ground level.

#### PRIMARY MAINTENANCE FACILITY

The primary maintenance facility structure should include the following:

Administrative space. This area handles the

communication of the daily work priorities. The location should be as far away from the equipment storage area as possible. Maintenance logs, invoices and other records must be maintained daily, and a quiet workspace ensures accuracy. Storage should be provided for the maintenance department's records and supplies. A fireproof cabinet should be used to store material safety data sheets, spray application records, backup irrigation programs and inventory documents – all of which should be duplicated and stored off site.

Climate control is a requirement of this area as well. Computers are used for record-keeping, updating the superintendent's maintenance procedures and running an irrigation system. Climate control will help computers operate efficiently. If the club's maintenance and invoice records are stored on a computer in this area, the superintendent should consider having this information backed up daily. A third-party provider might be considered as a resource to back up important records.

Other key characteristics include:

- 1,500 to 2,500 square feet allocated to administrative/break room areas, record storage, etc.;
- Private office space for the superintendent, assistant superintendent, horticulturist, irrigation technician and mechanic and a conference room area;
- · A break room or conference room;
- · Men's and women's locker rooms;
- A guest restroom for club members or visitors; and
- A drying/mudroom to hang and store damp clothes.

The goal of the administrative area is to provide an efficient workspace that promotes communication of daily requirements.

Equipment storage. For most, 6,000 to 8,500 square feet should be allocated to maintenance equipment storage. Floors should be marked so each piece of equipment has a designated space. There should be a small, secure equipment storage area for handheld equipment such as trimmers, chain saws, etc. And there should be optimum circulation so equipment can be driven through, eliminating the need to back up into a space.

Mechanics repair area/parts storage. Most equipment repair areas are 1,500 to 2,000 square

#### VC-60 VERTI-CUTTER

By First Products, Inc.

The VC-60 VERTI-CUTTER is designed for continuous heavy duty operation for fairways and tees, in all types of turf. This unit has a patented swing hitch that allows the operator to verti-cut around objects while turning without tearing the established turf. Cutting depth is 1 1/2 inches deep..





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feet and are connected to the equipment storage area and the parts storage room. Space should be designated for equipment that's scheduled for repair. This area should be equipped with a hydraulic lift that positions the equipment for quick repairs and adjustments.

Parts storage in most golf maintenance facilities average 200 to 250 square feet and should be used to store the most frequently used repair items. Some clubs will secure this area with a locked door so the mechanic and superintendent are the only personnel that have access to it. Regardless of access, there should be a direct entry into the equipment repair area so the technicians working on the equipment don't have to waste time retrieving parts.

Other considerations include an identified area for equipment in repair, an overhead rail system and forced air - with thermostat control - for heat in Northern climates.

Compressor rooms. A separate compressor building is acceptable for Southern climates, but a compressor should be located inside the primary structure in Northern climates. Compressor noise can be distracting to the players on the course and to the neighborhood. A separate compressor room should be provided within the equipment storage area or main repair shop with ventilation and sound insulation.

Grinding room. The grinding room in the main structure of the maintenance facility should be located adjacent to the mechanic's

repair area. It should range in size from 200 to 300 square feet and should support rotary, reel and bed knife grinding. An adequate ventilation system - one that controls the filings - should be available.

Other considerations. Depending on the size of the maintenance facility's primary structure, other rooms can be introduced. Many operations have added irrigation storage rooms, oil and lubrication storage rooms and equipment tool set-up rooms.

#### **CHEMICAL AND FERTILIZER STORAGE**

Chemical storage. One of the most important features of a maintenance facility is the chemical storage building. A maintenance facility should use a separate structure that meets local environmental and safety requirements. The most obvious benefit of a separate facility is safety. If chemicals aren't stored properly, they could end up in high-traffic areas where the original container could be ruptured.

Another benefit of a chemical storage facility is the ability to contain spills and minimize a club's exposure to the immediate environment. A dedicated space also promotes an accurate inventory, reducing waste, theft and business order duplication.

Other characteristics include:

· Being located at least 50 feet away from other structures on the site to allow for emergency access and 500 feet away from

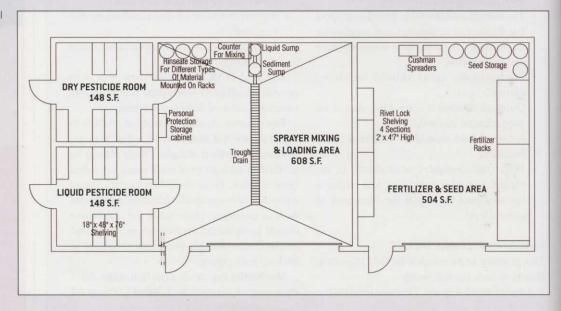
- natural water sources;
- · Averaging 400 to 500 square feet more space is required if a mix/load area is incorporated in the design;
- · An all-steel or sealed masonry construction (noncombustible materials);
- · Shelving that's chromed, coated or painted metal or plastic;
- · All light switches on the outside of the building, allowing all systems to be activated before entry.
- · An electric garage door opener so the building can be opened with entry.
- · A fire/smoke/security alarm with a dedicated line to the fire department or security company; and
- Exhaust fans and an emergency shower/eye wash station.

The use of a prefabricated structure should be given consideration when the installation of a new chemical storage facility is necessary. One of the advantages of a prefabricated structure is the different sizes available for the maintenance facility site. Prefabricated structures can range from 62 cubic feet to 2,300 cubic feet.

Other benefits include having all the necessary building, fire and electrical codes met. These structures also are compliant with environmental legislation.

Fertilizer storage facilities. Fertilizer storage areas are equally important, and many of the principles outlined above apply as well. An

An example of a chemical and fertilier storage/mix room area. This floorplan doesn't provide forklift access to the fertilizer storage area. Photo: McMahon Group



important feature of the fertilizer storage area is a racking system that has a high weight capacity (18 tons) and is capable of being loaded with a forklift. Other characteristics include:

- Averaging 1,500 square feet and featuring a high weight racking system that can be loaded using a forklift;
- Seamless flooring made of nonskid metal or concrete that's treated with chemically resistant paint;
- Exhaust fans and emergency wash areas; and
- Meeting OSHA and federal and local EPA compliance.

Mix/load area, storage combination facility. The principle goal of this area is to provide an environment that promotes efficient mixing of chemicals and water-soluble fertilizers while maximizing safety and minimizing environmental risk. Some maintenance facilities have created a combination facility where chemical and fertilizers are close to the mix/load area. Features include:

- Being a minimum 600 square feet and connected to the chemical storage facility;
- All-steel or masonry building made of noncombustible materials;
- Three bays, one drive through bay as rinsate/ mix load pad, one to store products and one to store spray equipment;
- The door height of the entrance should be large enough where the club's equipment can be parked for filling;
- Two available water sources potable water for eyewash and safety shower and nonpotable irrigation water to fill the sprayers;
- Exhaust fans with the volume capacity that can exceed six air changes per hour;
- Electric to code with wires in sealed conduit between inner and outer walls;
- Concrete filled steel pipe to protect corners of the building and entryways; and
- · Air gap quick cam hose hook ups.

Equipment cleaning. The Clean Air and Water Act is specific about what can and can't be passed as effluent from the wash-down from an equipment cleaning area. When a club is renovating or building a new facility, the wash-down area should strive to meet three objectives: (1) it must contain 100 percent of the oils, greases, solvents, fuels and any other contaminants found on the equipment; (2) it must be compli-



Equipment storage with designated parking areas. Photo: McMahon Group

ant with state and federal environmental protection agencies; and (3) it must be affordable and within the budget of the capital project. Other characteristics include:

- Creating a blowing station that has the ability to remove materials from the equipment prior to washing;
- A wash pad that's 750 square feet (30 X 25), allowing two machines to be washed at one time; and
- Water recycling systems that are compliant with state and federal EPA requirements.

#### **ENVIRONMENTAL RESOURCES**

Resources for dealing with environmental issues, including the sale, storage and use of pesticides, include the U.S. EPA Web site (www.epa.gov/pesticides/regulating/storage\_resources.htm) and the GCSAA's Web site (www.gcsaa.org). Interestingly, the federal EPA doesn't have regulations regarding the sale and use of fertilizers. Those requirements are defined at the state level. With regard to water and rinse containment, federal legislation has yet to be adopted. It's best to review those requirements at the local level.

#### **FOLLOW GUIDELINES**

Many times, a maintenance facility is constrained by the physical size of the building site, where the complex is located or by the funding capacity of the operations. When considering the installation of a new facility or a renovation of an existing facility, it's important the best general practices are observed:

- Ensure the safety needs of the staff are
- The facility is organized to minimize the cost of labor and supplies.
- Chemicals and fertilizers should have a defined storage place that can contain a spill.
- The maintenance facility complements the strategic needs of the golf course.
- Compliant with all federal and state EPA and OSHA guidelines.
- Compliant with all local zoning guidelines.

For the physical facility, it's best to see if plans address the following areas:

- · Overall site circulation;
- · Staff and fleet parking;
- Outdoor storage bins for topdressing sand, bunker sand, mulch and other materials;
- · Green waste disposal and recycling;
- · Chemical storage and mixing areas;
- · Fertilizer storage;
- · Fuel storage;
- · Equipment wash and rinse containment;
- · Equipment storage and circulation;
- Equipment maintenance, including a lift and parts storage; and
- Administrative offices, staff locker and break room. GCI

Michael Vogt, CGCS, is a golf and turfcare consultant with the McMahon Group based in St. Louis. He can be reached at 800-365-2498 or mvogt@mcmahongroup.com.

## **CLOSER TIES**

Carolinas superintendent forms relationships with a group of international greenkeepers

ne of the best aspects of our industry is the free exchange of information and the relationships that are forged. I was able to experience both at their finest on a trip to England in January with nine other GCSAA members from throughout the country. Among them was esteemed Carolinas GCSA colleague, Bob Farren, CGCS, from Pinehurst. The group of 10 golf course superintendents had been assembled through the efforts of Bernhard and Co. as part of an exchange program between the British and International Golf Greenkeepers Association and the GCSAA.

For the past seven years, 10 members of BIGGA have been sponsored by Bernhard and Co. to attend the Golf Industry Show to have a first-hand look at the golf industry in the United States. This year was the first time the program provided a trip to the United Kingdom for U.S. superintendents.



### NOT MUCH RESEARCH

BIGGA's annual conference and show is hosted in northern England in the town of Harrogate, which is where our week-long trip began. We started with a short road trip to the Sports Turf Research Institute in Bingley. Unlike in the U.S., university turfgrass research in the U.K. is almost nonexistent. The primary functions of the STRI are to provide the facilities and staff the means to carry out this research and provide consulting services based on their findings. In many ways, the STRI provides services similar to those of the USGA Green Section, albeit on a much smaller scale.

We toured the 20 acres of plots and saw first hand some of the current research being investigated. Everything from varietal trials, slope stabilization and even the surface for a greyhound run. We could have easily spent the remainder of the day talking shop with the staff but a visit to an area club was set for the afternoon.

### THE REAL DEAL

What a treat we had in store for us at Alwoodley Golf Club in Leeds. Alwoodley has the distinction of being the home club to the great Alister MacKenzie, Ph.D., who has crafted many classic courses all over the world. We met with club historian Nick Leefe, who provided us with some history of Alwoodley and MacKenzie's involvement with the club, as well as detailing the many design changes that have happened throughout the years.

With daylight running short, a walking tour of the course gave us our first look at golf in the U.K. Wow! What an eye-opening experience. There was nothing at all manufactured about it. There wasn't a huge industrial machine that had produced what was before us. This was the real deal. Simple, straightforward, unadulterated golf. The club's cart fleet consisted of a grand total of six trolleys (that's a golf cart for us Yanks), and if you couldn't walk and play a round in less than three hours, something was terribly wrong. It was obvious golfers on both sides of the pond might play by the same rules but certainly not the same game. With the sun setting on the course, we had our first day under our belts. What a great start.

### TRADE SHOW TECH

The bulk of the week allowed us to attend the BIGGA Turf Management Exposition, which consisted of educational opportunities and a trade show. It was truly an international event, with the opening ceremonies hosting then-president of the GCSAA, Sean A. Hoolehan, CGCS, and then-president of the Canadian Golf Superintendents Association, Neil Blayney. Both presented the current state of affairs for their respective organizations, and both emphasized how critical it would be to strengthen our alliances on a global scale. This became a recurring theme for the week.

We all face similar problems worldwide. Rounds are down, waiting lists at clubs are a thing of the past, and it's becoming more difficult to attract qualified labor. There's also the looming threat of losing many pesticides, if not all of them. For example, Switzerland has implemented a complete ban of pesticides throughout the country. Only under eminent threat of a national public health crisis can they be used. With a population of just

more than 60 million, less than 2 million play golf on some level annually in the United Kingdom, and this number is shrinking yearly. Anything sound familiar yet?

One informational tool that was launched at the BTME opening ceremonies was the World Turfgrass climate map developed by the Royal & Ancient (www.bestcourseforgolf.org). Currently, it's just a platform, only allowing users to view simple statistics and distribution of turf by region. However, after spending

some time with it, one can see the map has endless possibilities as an information-sharing tool. I'm sure we won't see its full capability for several more years.

The trade show was surprisingly large, occupying four halls at the convention center. Almost every imaginable facet of the industry was represented except the big three. Textron, John Deere and Toro weren't present at the show. The major manufacturers follow an alternating annual conference schedule, and 2007 was an off year. Even so, more than 6,600 unique visitors passed through the convention center halls perusing the latest the industry has to offer.



The traveling team - Back (left to right): Mike Morris, CGCS; Robert Murtaugh, CGCS; Todd Pippin, Ken Williams, CGCS; Roger Stewart, CGCS; Bob Farren, CGCS; and Gregg Blew, CGCS. Front: Bob Becker, David Phipps and Dave Ward, CGCS. Photo: Bernhard and Co.

Midweek, we joined the previous 60 BIGGA delegates who enjoyed the exchange program and saw the next 10 named for the trip to Anaheim, Calif., this past February. A great group and organization hosted us for the evening, making us feel at home with a wonderful dinner to end Harrogate week for all the delegates.

The Alwoodley Golf Club in Leeds, England. It has the distinction of being the home club to Alister MacKenzie. Photo: Todd Pippin

### A TRUE CLASSIC

Our final day was spent at Ganton Golf Club. Ganton hosted the great Harry Vardon as its head professional from 1896 to 1903, earning three of his six British Open titles, and the U.S. Open in 1900 during this tenure. I thought Alwoodly was impressive, but this was just phenomenal. Head greenkeeper Phillip K. D. Baldock hosted us for almost the whole day, walking the course and touring the clubhouse. Labeled as the finest inland links course in the country, it was easy to see that this was as good as golf gets. Like many classic courses, the professional has outgrown these links with the latest drivers and balls. You could still see, though, this was a real test for the rest of us mortals.

As host site for the 1949 Ryder Cup when Ben Hogan was on the winning team, the 2000 Curtis Cup and the 2003 Walker Cup, this track was made for the serious player. The member list comprises an elite and international flavor. The cost to join is a mere \$1,800, and everyone is assessed for operations at the end of the year. The wait list is endless. The club secretary told us they print a list in the monthly newsletter of those who have moved from the wait list to full member, members that have passed away and those on the wait list that have died before making it. I wasn't quite sure if I should chuckle or be humbled by the clout the club carries. So I did both.

### SHARING RESOURCES

Having seen it first hand, all eyes truly do look to the West for the standards of conditioning. But are we missing out on how to make a golf course here in the U.S.? In our pursuit of excellence, have we bypassed the heart of the game and created something entirely different?

After the week there, I returned with more questions than answers. A return trip is definite. The friendships forged with the group I traveled with will last a lifetime, as well as those made while there.

It might not fit the schedule for an annual visit, but Harrogate week is a must for all to attend at least once during their careers. Our future relies on standing on a common ground, forging friendships and sharing our resources to follow the road to success. GCI

Todd Pippin is golf course superintendent at The Club at Longview in Weddington, N.C. He can be reached at 704-443-2535 or todd@pippin.com.







There's no better relief for the burn of summer stress than the new and improved ProteSyn from Floratine, now with Amino-Lok Technology.

ProteSyn has helped superintendents battle summer stress for years, and the new formula makes energy management even easier, by renewing fuel sources before they're depleted, beating respiration stress, and offering a complete solution to plant strength.

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# NEW on the market

Demanding course conditions inspire new turfgrass varieties

esearchers continue to develop turfgrass varieties that are designed to withstand today's demanding golf course conditions. Here are some of the newer cultivars, which were developed to offer protection from factors including dwindling water quality, low height of cut and heavy play.

COMPILED BY HEATHER WOOD

### **BARENBRUG USA**

Baroness Kentucky bluegrass is performing well in different locations throughout the country. It tops the National Turfgrass Evaluation Program list for drought tolerance. Baroness has high turf quality and is very dark green. It's a small, seeded variety, which means it has twice the seed as other bluegrasses. Barenbrug offers a new coating for this variety called Zeba, a nontoxic, biodegradable, starch-based, absorbent coating that forms a hydrogel to provide moisture on demand to increase germination and establishment efficiency. Every Kentucky bluegrass variety sold by the company must pass its wear simulation program.

Barnique Kentucky bluegrass performs well in NTEP trials. Barnique tolerates wear and is lighter green than Baroness. It also has small seeds and is available with the Zeba coating.

TurfStar perennial ryegrass is a blend that contains high-quality varieties, is guaranteed *Poa annua* free and has a high germination rate. This fall, the company introduces TurfStarXPC perennial ryegrass mix. XPC stands for extra *Poa* cover. The mix has lighter-colored perennial ryegrass varieties in it, which allows for concealing *Poa*. It also contains Bargold, a fine-leaved, perennial ryegrass variety and exhibits wear tolerance. It also withstands close mowing – as low as one-fifth inch – which is uncommon for perennial rye.



# **BARENBRUG**

SOS plus Panterra is for overseeding Bermudagrass. The SOS program allows users to create a regional specific overseeding mixture based on climate and desired transition speed. SOS was developed in conjunction with David Chalmers of Texas A&M University. It's based on Panterra, an annual ryegrass with favorable turf characteristics.

Barbados hybrid seeded Bermudagrass is finer-leaved than Princess 77 and Riviera and exhibits spring and summer density. It's aggressive in the spring, which allows for smooth transition from winter overseeding stress. In the fall, Barbados exhibits a more open turf, allowing for better establishment of overseeded cool-season grasses. Barbados is closing the gap between seeded varieties and vegetative varieties; in several trials it ranks higher than the vegetatives. It can be cut to one-sixteenth inch and is only available with the Zeba coating.

For more information, visit www.barusa.com.



### **BURLINGHAM SEEDS**

Firebird tall fescue is one of the darkest tall fescues available. It has improved brown patch resistance, is slower growing and requires less maintenance. It's highly rated in drought tolerance and is ideal for primary or secondary roughs, bunker facings or around the clubhouse in sun or shade for traditional tall fescue usage areas.

Zodiac chewings fescue has been the No. 1-rated chewings fescue in turf quality in the last two NTEP trial years. It's fine textured with improved disease resistance and ability to mow at short cut heights of one-half inch. It's ideal for Northern climate fairways and tree-lined greens surrounds or for dormant overseeding in the South.

Overdrive perennial ryegrass has broad adaptability and is resistant to gray leaf spot. It's slower growing, which requires less mowing, and has high endophyte for better stress tolerance. Overdrive has summer active growth, which helps it recover from stress.

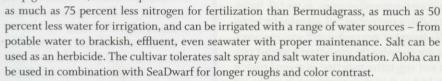
For more information, visit www.burlinghamseeds.com.

### **ENVIRONMENTAL TURF**

SeaDwarf seashore paspalum is a true dwarf paspalum, which means it delivers fast green speeds and high-quality greens. SeaDwarf may be used for high-quality, tee-to-green golf courses, offering superintendents just one grass to manage. SeaDwarf is drought tolerant, requires up to half the water for irrigation needed by Bermudagrass, and may be irrigated with a wide range in water quality - from potable water to brackish, effluent, even seawater

with proper maintenance. The way it grows enables it to heal twice as fast as Bermudagrass from divots and sports-related damage. SeaDwarf is environmentally friendly and is highly salt-tolerant. It requires as much as 75 percent less nitrogen for fertilization than Bermudagrass. Additionally, salt can be used as an herbicide.

Aloha seashore paspalum was developed by the University of Florida. Fine-textured with a deep green color, Aloha requires



PristineFlora zoysiagrass also was developed by the University of Florida. PristineFlora zoysia is a highly shade-tolerant grass with a fine texture and rich green color. It can be used for golf and ornamental use. It works well on golf course tees and fairways. It's faster growing than many other common zoysiagrasses, allowing it to heal from wear. It also tolerates most herbicides.

For more information, visit www.environmentalturf.com.





### JACKLIN SEED BY SIMPLOT

**4-Season Kentucky bluegrass** is an elite variety with remarkable spring green-up. Its year-round performance earns the "four-season" designation. It features a darker green color, improved disease resistances and heat/drought tolerance.

For more information, visit www.jacklin.com.



### SCOTTS TURF-SEED

Developed by Pure Seed Testing in cooperation with the University of Georgia, **Sea Spray paspalum** is the first release of an improved, seeded seashore paspalum. Ideal for temperate to hot, humid coastal climates, it's extremely salt tolerant and is drought and shade tolerant. Bright, blue-green in color, it's ideal for use on turfgrass areas irrigated with effluent water or subject to naturally high saline conditions.

For more information, visit www.turf-seed.com



### **LESCO**

Noble Eagle perennial ryegrass blend contains three advanced-generation cultivars of turf type perennial ryegrass derived from three unique genetic backgrounds. All three varieties – Notable (Exp AF), Prototype (exp DCM) and Attribute (exp CIS PR270) – have demonstrated ideal turf performance at varied mowing heights and maintenance levels in the current NTEP trial. The varieties have good turf density ratings and have shown resistance to gray leaf spot. Noble Eagle is a premium ryegrass blend and is blue-tag certified. It works well in high-traffic areas such as golf course tees and fairways.

For more information, visit www.lesco.com.

### SEED RESEARCH OF OREGON/PICKSEED

Creeping

Bentgrass

Tyee creeping bentgrass was the top-rated bentgrass in the NTEP greens trials on sand and at or below one-eighth-inch height of cut. It's derived from plants that survive and thrive under heat and stress. It's extra density helps keep *Poa annua* away.

**007 bentgrass** was developed by Richard Hurley, Ph.D., in cooperation with Rutgers University for performance and high dollar

spot resistance. All individual parental clones of creeping bentgrass used in the development of 007 were selected for improved dollar spot resistance, medium bright green leaf color and a vigorous, uniform, moderately dense growth habit. Recommended uses include seeding or sodding putting greens, tees and fairways. It will adapt well to

low mowing on greens or for reduced fungicide use on fairways and tees.

MacKenzie bentgrass has the density required for low heights of cut on greens, especially at the reduced fertility often used with the more aggressive lateral growth needed for fairways. Once established, it has the density to withstand wear in all seasons and for all uses. It has high summer performance and a winter-active growth. The cultivar was developed from bentgrass clones selected from high stress environments.

SR 1150 bentgrass was developed to form a vigorous, moderately dense bentgrass fairway, tee or green under lower maintenance conditions. The development of SR 1150 traces to genetic studies on dollar spot resistance by Stacy Bonos, Ph.D., of Rutgers University. SR 1150 won't form thatch as readily as more dense varieties. It has a bright, dark green color and a moderate leaf texture. It demonstrates high resistance to dollar spot, brown patch and pink snow mold.

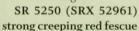
SR 4600, Harrier and Zoom perennial ryegrasses have high resistance to gray leaf spot. All varieties show excellent turf quality. Zoom has shown the highest turf performance under all conditions in the 2004 NTEP trial.

Headstart 2 and Calypso III ryegrasses are two varieties that complement these cultivars because of their dark green color and high resistance to dollar spot and red thread.

Bandera Texas x Kentucky hybrid bluegrass has been shown to have excellent drought resistance and recovery because of its deep extensive rhizomes. Another Texas x Kentucky hybrid, Spitfire bluegrass, combines

the darker color of Midnight Kentucky bluegrass with the drought and heat tolerance of Texas bluegrass.

The company is introducing new high-endophyte fine fescues that show superior turf performance for all usages, from fairways to unmowed roughs.



is heat tolerant and can be used from full sun to shade in a broader area than older creeping red fescues. It has shown wear tolerance when cut at fairway heights and can be established with other fine fescues, Kentucky bluegrasses or perennial ryegrasses.

SR 3150 (SRX 3961) fescue can be used on fairways to unmowed roadsides. Traditionally, hard fescues were used on shade sites of home lawns or golf course roughs but the advances in SR 3150 enable this variety to be used from sun to shade and high to low maintenance sites. High endophyte levels enable it to resist surface insects and help provide protection against diseases such as dollar spot. Improved heat and summer stress resistance further expand its uses.

SR 5130 (SRX 51G) chewings fescue, the latest of this cultivar from the company, has shown ideal performance under traffic stress when cut at fairways heights. It performs well under shade. Resistance to dollar spot, summer patch and red thread contributes to the high performance of this variety. It can be used in mixtures with other fine fescues, Kentucky bluegrasses and perennial ryegrasses.

For more information, visit www.sroseed.com.



### TEE-2-GREEN CORP.

Recognized for its distinctive bluish-green color, **Crystal BlueLinks bentgrass** had top-rated performance in the 2005 NTEP trials. Multiyear field trials indicate it maintains remarkable disease resistance to significant turf diseases such as brown patch, dollar spot and copper spot.

Alister colonial bentgrass is guaranteed to be free of crop and weed seed, features a bright color and exhibits solid winter growth. It's recognized for improved leaf spot and take-all patch resistance. Alister isn't as aggressive as creeping bentgrass, which enables it to coexist with fine fescue or thrive under low-maintenance conditions.

For more information, visit www.tee-2-green.com.



### TURF ECOSYSTEMS

Platinum TE paspalum has no genetic-based grain. It exhibits dwarf-like transformation characteristics as height-of-cut is reduced below 0.125 inch, forming shorter internodes and smaller, narrower leaves as the grass is groomed. The cultivar exhibits continuous growth that provides wear tolerance and divot and ball-mark recovery. It has a low nitrogen requirement because of high nitrogen uptake, but when a growth enhancement is needed, the cultivar rapidly responds to additional nitrogen applications.

For more information, visit www.platinumte.com. GCI

Editor's note: If there are other new varieties that aren't included, please send the information to Heather Wood, Web editor, at hwood@gie.net.

# **COURSE CONSTRUCTION** After 20 years of planning and

# What a long, StRaNge trip it's been

golf course instead of an industrial park would be a no-brainer. Two years later, voters gave the go-ahead, and the city began the process. It hired architect Greg Nash to design the layout.

as part of the cast. After 20 years of planning, permitting delays, designs and redesigns to satisfy every regulatory board imaginable, with site constraints that left the grading contractor ready to walk off the job after 24 hours, and a plane crash on the third green that killed three people and necessitated the rebuilding of the entire putting surface just days before its unofficial opening, the 18-hole championship course will have its long-anticipated grand opening Sept. 26.

f a television producer ever comes up with

▲ developers of The Crossings at Carlsbad

(Calif.) municipal golf course should be booked

a reality show based on perseverance, the

"We had more constraints on this site than I've encountered in my entire career," Nash says. "We had endangered plant and bird species, wetland issues, archeological sites, expansive soils and high-power transmission lines. It was a major puzzle putting it all together.

"It's a wonderful feeling to bring it to completion finally," says Skip Hammann, special projects director for the city of Carlsbad. "It has been a long road for a lot of people."

park would ers gave the ress. It hired yout. is site than eer," Nash our species, expansive nes. It was nonstraints ery time egotiate dy with ve had rvice. ency. ered in n "We tried to get a list of all the constraints by different agencies," he adds. "Every time we put together a plan, we had to negotiate with them. For a while, we dealt mostly with the Army Corps of Engineers. Then we had to deal with U.S. Fish and Wildlife Service. We spent one to two years with each agency. While we were engineering, we discovered things such as part of the property being in a coastal sage area, or we'd come across an endangered black-tailed gnatcatcher habitat. We kept tweaking this and that. Then the Coastal Commission stepped in, and its plans were quite a bit different. They had a zero-tolerance policy when it came to any disturbance. We had to redesign about 40

### WHY SO LONG?

The city first floated the idea of building a golf course in 1988. A search for an appropriate location led city planners to the 400-acre site with beautiful ocean views. Yet the city already had received permits for an industrial project there. The belief was that obtaining approval for a

BY PETER BLAIS

percent of the course again."



Although the course is 6,850 yards long, the golf course challenges golfers in various ways. One example is the tiered putting surfaces on several holes. Photo: carlsbadimages.com

The difficulty of dealing with various state and federal regulatory agencies, especially in an environmentally conscious state like California, has left developers yearning for a more streamlined permitting process with a clearinghouse where requirements of the various agencies could be listed for developers to see beforehand. Hammann agrees such a clearinghouse for information is appealing. But the reality is that there are so many conflicting regulatory requirements that even if one agency signs off, developers have to meet the new guidelines as new regulations are adopted.

"Because this project went on for so long, things kept coming up," Hammann says. "It's a reiterative process. You keep going through the grind until you finally get there. It's a long, painful process that takes tremendous willpower. Developers hit a roadblock. By the time they got through the problem at hand, all these other things cropped up. You'd think you have everything figured out and try to put a design together so you can go out to bid, but some significant issue comes up that requires another major redesign. You do the redesign, go through the grind again, and something else comes up."

With some environmental studies, developers have to wait until a certain part of the year for a study to be completed before they could start the redesign.

"Starting and stopping makes it difficult to keep momentum going and get a project completed," Hammann says. "Then you have to allocate additional money, and consultants change, which means starting over again in some areas. Greg Nash was one of the few consultants who stayed with this from the beginning. Greg stuck it out. He did a great job and was great to work with."

Nash's final design basically split the 400-acre parcel in half, with 200 acres set aside for the golf course and 200 preserved for habitat to protect multiple endangered species and help tie together more than 1,000 acres of open space in the central part of the city. The Coastal Commission's requirements meant shaving off another 150 yards, which brought the total yardage closer to 6,850 yards rather than the 7,000 yards the city had anticipated.

Winding through coastal terrain and natural canyons, the 400-acre property was home to wetlands, sage brush and other plant, animal and bird life but also had to be infused with massive pines, oaks and sycamore trees.

Bridges – or crossings, thus the course's name – were designed into the layout to meet specific existing environmental and topographic conditions. Five bridges span protected areas and include environmentally sensitive design elements.

### **CONSTRUCTION CHALLENGES**

Construction finally began in September 2005. SEMA Construction was responsible for the

grading and infrastructure, and Wadsworth Golf Construction took over course construction once the site was rough graded. A Wadsworth subcontractor also was responsible for habitat-restoration areas. Jaynes Contracting oversaw building construction including the maintenance center, clubhouse, halfway house and restrooms.

"Often times, we're challenged by soil conditions, but in this case, the issues were primarily man made, apart from the environmentally sensitive areas," says Steve Harrell, president of Wadsworth. "You couldn't simply apply construction techniques to resolve matters. Instead, you had to work within the governmental agency requirements. Usually, we can solve construction problems by simply throwing horsepower at them, but these had to be solved by people meeting and working out the best solutions for both parties."

Nash's design took the 150 yards lost during the Coastal Commission's final changes into consideration. The last few holes on each nine play directly into wind. The variety of holes also helps keep players off balance, while tiered putting surfaces on several holes provide additional challenges.

"People comment about the huge difference between the two nines," Nash says. "One is up on a hillside with long views toward the ocean. The other is along a canyon with wetlands and vegetation."

One permitting requirement forced Nash to design an unusual hole. The California Coastal Commission and Army Corps of Engineers refused to grant permission to develop a crossing near what was going to be the 12th tee. Instead, they insisted developers use an old country road behind the 12th green. To accommodate the requirement, Nash's design leads golfers along a cart path from the 11th green around the adjacent 12th green and then back along the entire length of the 12th hole to the 12th tee. After playing the 12th hole, golfers exit the 12th green along the country road to the 13th tee.





One nine is up on a hillside with long views toward the ocean. The other nine is along a canyon with wetlands and vegetation. Photo: carlsbadimages.com

"People are going to ask what the heck we were thinking when they play the hole," Nash says. "But it was something we couldn't negotiate or overcome. There was simply no place else we could go."

Revegetation was a big part of the project.

"We spent a lot of money, effort and time to recreate the naturalness of the site," Hammann says. "The result is a great contrast between manicured turf, bunkers, a golf experience and environmentally sensitive areas."

Workers spent as much time revegetating natural areas as they did on course construction in terms of watering and vegetative grow-in, says golf course superintendent Chris Latham.

A requirement to use native soils was challenging. Native soils provide the growing medium for the Tifway 419 Bermudagrass on the tees, roughs, fairways and green surrounds. The only place native soils weren't used is on the 6,500- to 8,000-square-feet greens, which are Dominant bentgrass. The irrigation system provides potable water for the greens and effluent elsewhere.

The builders installed playable and nonplayable rough areas along the edges of the course to serve as buffers, particularly near environmentally sensitive areas. The buffers restrict runoff from pesticides and fertilizers, inputs Latham tries to minimize.

"We've subcontracted with Habitat Restoration Service to take care of the revegetation," Latham says. "They're maintaining the irrigation system devoted to the revegetation for the next five years. After that time, all the irrigation piping will be removed."

Latham works for KemperSports, who the city hired to manage the facility. Kemper will monitor HRS' activities and bridge the gap in those areas to fulfill the permitting requirements and make it hospitable for players.

"For instance, if we're growing-in a coastal area in front of a tee box, we have to make sure the plant life is low enough for players to shoot over," he says.

### WHERE DID THE MONEY GO?

In 1988, the city estimated the course would cost \$7 million to build. The final figure was \$63.3 million.

"That includes permitting, design, everything associated with preparing the course for construction and construction itself," Hammann says. "It includes hard and soft costs."

One has to look at the cost from a different

perspective, Harrell says.

"You can't just say it's a \$63-million golf course," he says. "It was the development of a difficult site for recreational enjoyment. Without the golf course it would be vacant property with a bunch of power lines on it. Some people might say that's fine. Other people wanted something different. It's not like the money was spent on greens, tees, bunker sand, storm drains and a fancy irrigation system. It was spent on a number of things unique to that site."

The project required two separate irrigation systems, one for the manicured turf areas of the golf course and a second for the natural revegetated areas, which cost about \$2 million apiece. Then there are several million dollars worth of bridges. Add to that almost 20 years of consultant and permitting costs.

"An untrained eye might ask why it cost so much, but there were many things you wouldn't encounter on most courses," Nash says. "The average guy might ask where they spent all that money, but it can add up quickly.'

The course meshes well with the area's economic base, which consists largely of golfequipment manufactures, such as Callaway, Cobra and Titleist, and tourism. Two hotels are planned - one, the Sheraton Carlsbad Resort & Spa, is scheduled to open in January. The city also is encouraging the development of two manufacturing parks in the immediate area that will generate significant tax revenue.

"It's a good addition to the San Diego North area," Nash says. "The city of Carlsbad is in this for the long haul."

Voters approved this project years ago, and despite the hefty price tag, the city believes it's getting something more than just a golf course.

"We're getting an amenity in the middle of the city that provides linkage for our open space and trails and a 28,000-square-foot clubhouse that's a gathering place for the community," Hammann says. "The city is looking long term rather than short term and believes this will be a tremendous asset to the city, the golf industries in this area, the folks who live in and around Carlsbad, and the tourism industry that comes through here. The long-term goal for the city is that the revenue generated from the course will repay the general fund. The repayment is estimated at 30 years."

### **DAILY MAINTENANCE**

The steepness of the site, distances from hole to

hole, and the fact the course is spread out over 400 acres (counting the revegetated area), means additional maintenance considerations.

"The challenge is traversing the property and getting from place to place," Latham says. "The front nine has quite a few elevation changes. The back nine has more canyons."

Latham plans to use manpower studies, process mapping and multitasking to allocate resources and control costs as best he can. Changeovers from employee to employee and job to job will occur during lunch hours as frequently as possible to avoid unnecessary trips back and forth from the course to the maintenance center. For instance, workers will bring a mechanized blower and trimmer along with them when mowing greens. As they move around the course, they'll also trim curbs, tee-box surrounds, greens and banks rather than simply mowing the greens and then going back to the maintenance center to pick up tools to perform the other functions.

Latham's crew also will maintain a lighted driving range. That job will be somewhat easier thanks to an artificial turf-teeing area that aligns golfers with five target greens. The artificial surface looks and feels like real grass and allows golfers to tee their balls.

"We have a modern maintenance facility and a central-service system similar to a Jiffy Lube," he says. "We'll probably carry 20-plus workers on the crew. In addition to an assistant superintendent, we'll have a second assistant whose job is strictly to monitor the habitat-restoration area."

And the crew will be responsible for maintaining three water features - one on the 18th hole that also will be used for irrigation and two on the seventh hole, an upper one that feeds into a lower one via a waterfall.

### **PLAYING CHALLENGES**

The Crossings' unofficial opening was August 11. Feedback from players has been that the course's dramatic elevation changes on the front nine and canyon setting on the back make it look much harder to play than it actually is, says general manager Jeff Perry. Golfers are encouraged to select an appropriate set of tees to match their abilities and take what the course offers them rather than imposing a certain style of play on the layout.

Slow play was an initial concern because of the elevation changes and long distances from some greens to tees. But foursomes generally

### AT A GLANCE The Crossings at Carlsbad

Location: Carlsbad, Calif.

Web site: www.thecrossingatcarlsbad.com Type of project: New construction of a

municipal course

**Architect: Greg Nash** 

**Builder: Wadsworth Golf Construction** 

Superintendent: Chris Latham

**Owner: City of Carlsbad** 

Project started: Conception 1988;

construction 2005

**Project completed: August 2007** 

Cost: \$63.3 million, which includes all hard

and soft costs

Notable: Conception to construction took almost 20 years because of the coastal location and California's complex regulatory climate. Builders installed a separate irrigation system for the out-of-play revegetated area that will be removed in

five years.

have played the course between four hours and 15 minutes and five hours.

Nash did a nice job of working with the land and making a dramatic but playable course, says Steve Skinner, president of KemperSports.

"We hope it will be playable for all levels of players," Skinner says. "We will know better when the everyday golfer begins getting out there. It's in a great market with great weather. The course could host as many as 60,000 rounds annually."

By area standards, The Crossings should be affordable for most everyday golfers in the San Diego market, where green fees at some facilities exceed \$200. The cost to play will be \$90 Mondays through Thursdays, \$95 Fridays and \$110 Saturdays and Sundays. Carlsbad residents will pay \$30 less and San Diego County residents \$15 less.

"Time will tell how successful and well received the project will be," Hammann says. "It has created a lot of buzz and excitement. It will be a success." GCI

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BY JEFF HAAG

# Grow playable, healthy turf

A look at factors that damage chloroplasts and the defenses that protect them

The goal of every turfgrass manager is to ■ provide a playable surface and aesthetically pleasing green turfgrass. Achieving the latter involves a reciprocal balance between soil, fertility, moisture, temperature, humidity, grass species, mowing techniques, cultural practices and cooperation from Mother Nature. All these aspects have to be working in sync for turfgrass to perform properly and be appealing colorwise.

Protecting and strengthening chloroplasts would seem like the logical action to take because this is where chlorophyll, a pigment that gives turfgrass its green appearance, is developed.

The most important characteristic of plants is their ability to photosynthesis - to make their own food by connecting light energy into chemical energy. This process is carried out in specialized organelles called chloroplasts. A photosynthetic cell contains anywhere from one to several thousand chloroplasts. The electrons from chlorophyll molecules in photosystem II replace the electrons that leave chlorophyll molecules in photosystem I.

Located inside the chloroplast are thylakoid membranes where light reactions take place. This is where chlorophyll is found, therefore, there's a synergistic relationship between keeping the chloroplasts and the thylakoid membranes as healthy as possible.

There are events that can be harmful to chloroplasts and thylakoid membranes, as well as necessary components that can prevent damage to them.

### **FREE RADICALS**

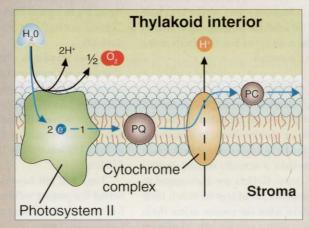
One event that can damage chloroplasts is the development of free radicals. The medical profession has shown that free radicals can cause diseases in the human body. Likewise, turfgrass managers know that research throughout the past several years has shown free radicals can damage lipids, proteins and DNA inside cells of turfgrass plants, including chloroplasts.

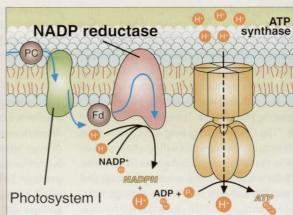
Typically, free radicals are stable molecules

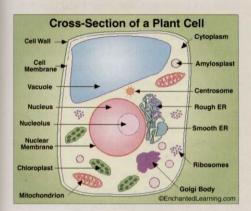
that contain pairs of electrons. When a chemical reaction breaks the bonds that hold the paired electrons together, free radicals are produced. They contain an odd number of electrons, which make them unstable, short-lived and highly reactive. As they combine with other atoms that contain unpaired electrons, new radicals are created, and a chain reaction begins (Droge, 2002; Haag, 2005).

This chain reaction, or accumulation of reactive oxygen species, in plants is generally ascribed to several possible sources (Klessig and Malamy, 1994; Corpas et al., 2001; Desikan et al., 2001; Blokuna et al., 2003): cell-wallbound perxidases, membrane-located NADPH oxidases, amine oxidases, xanthine oxidase, chloroplastic electron transport chains, mitochondrial electron transport chains, and peroxisomal fatty acid B-oxidation, which includes the H<sub>2</sub>O<sub>2</sub>-generating argyl-coenzyme A oxidase steps (Couee et al., 2006). These sources can be attributed to environmental causes such as

The electrons from chlorophyll molecules in photosystem II replace the electrons that leave chlorophyll molecules in photosystem I Images: Sinauer Associates and WH Freeman







drought, heat, and ultraviolet light, or chemicals such as herbicides (Haag, 2005).

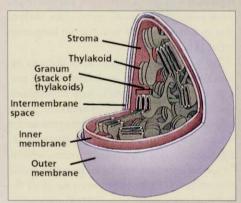
Accumulation of reactive oxygen species is central to plant response to several pathogens. One of the sources of reactive oxygen species is the chloroplast because of the photoactive nature of the chlorophylls (Kariola et al., 2005). The free radicals, or reactive oxygen species, are singlet, hydroxyl, superoxide and hydrogen peroxide.

### LIGHT

There's a catch-22 with light. Light is necessary for photosynthesis to occur; however, it also can play a part in the degradation of chlorophyll.

When photosynthetic organisms are exposed to ultraviolet radiation, significant, irreversible damage to important metabolic processes within the cell might occur (such as lesions in DNA and inhibition of photosynthesis). Through these reactions and others, radical forms of oxygen are often created. Many reports suggest this damage is because of oxidative stress resulting from UV-A, (Dring et al., 1996, Jeffrey and Mitchell, 1997, Turcsanyi and Vass, 2000) UV-B (Teramura and Ziska, 1996, Gotz et al., 1999, Mazza et al., 1999, hideg et al., 2000, Estevez et al., 2001) or both (Krause et al., 1999, Muela et al., 2000, Vega and Pizzaro, 2000, Laloi et al., 2006).

Photosynthetic light absorption and energy usage must be kept in balance to prevent formation of reactive oxygen species in the chloroplasts. Drought causes stomatal closure, which limits



the diffusion of carbon dioxide to chloroplasts and thereby causes a decrease of carbon dioxide assimilation in favor of photorespiration that produces large amounts of hydrogen peroxide (Noctor et al., 2002). Under these conditions, the probability of singlet oxygen production at phtosystem II and superoxide production of photosystem I is increased (Niyogi, 1999; Foyer et al., 2005). These can cause direct damage or induce a cell suicide program (Tambussi et al., 2000).

It has been known for a long time wavelengths in the ultraviolet-B region of the spectrum are effective in inactivating photosynthesis, and the molecular target is photosystem II (Jones and Kok, 1966., Chen and Gallie, 2005). An excess of light brings about the inactivation of oxygenic photosynthesis, a phenomenon known as photoinhibition (Powles, 1984), and the molecular target of photoinhibition is photosystem II, a thylakoid multisubunit pigment-protein complex (Bergo et al., 2003). The major effect of ultraviolet-B light on the thylakoid proteins is the breakdown of the reaction centre D1 protein (Trebst and Depka, 1990; Friso et al., 1994; Barbato et al., 1995).

One must question whether ultraviolet-B radiation will become an even more serious factor in the future. The depletion of the stratospheric ozone is causing renewed concern about the increased level of ultraviolet-B radiation reaching the earth's surface (Smith et al., 1995). It's also

There is a synergistic relationship between keeping chloroplasts and thylakoid membranes as healthy as possible. Images: Sinauer Associates and WH Freeman.

known exposure to environmental ozone can cause significant damage to turfgrass by imposing conditions of oxidative stress (Chen and Gallie, 2005; Grimes et al., 1983; Schraudner et al., 1998). This might be the case because we're seeing a gradual increase in yearly temperatures throughout the world and an increase in skin cancers in humans. How it affects crops and turfgrass plants in the future remains to be seen.

### SENESCENCE

Senescence results in massive levels of cell death, but the purpose of senescence isn't cell death; rather death only occurs when senescence has been completed. Senescence occurs in two stages. The first stage is reversible, and the cells remain viable throughout. The second stage results in cell death (Buchanan-Wollston et al., 2003; McGlaughlin and Smith, 1995; Mothes et al., 1960; Riefler et al., 2006; Venkatrayappa et al., 1984).

The key enzyme in the pathway to chlorophyll degradation during senescence appears to be pheophorbide *a* oxygenase. The activity of pheophorbide *a* oxygenase increases dramatically during senescence, implicating this enzyme as a control point in the process (Buchanan-Wollston et al., 2003; Hortensteiner et al., 1998). Light absorption by pheophorbide *a* oxygenase also is believed to cause the production of singlet oxygen (Pruzinska et al., 2005), which is a free radical.

Because senescence is reversible, it suggests that fully developed chloroplasts retain enough genetic information to support regreening and chloroplast reassembly.

### **CALCIUM AND POTASSIUM**

From a nutritional standpoint, there are various

# Research

nutrients and compounds that can be applied in the process of strengthening and defending chloroplast damage.

Because the chloroplasts and thylakoid membrane are located inside the plant cell, the first line of defense would seem to be to strengthen the plant cell by keeping calcium and potassium at optimal levels. Calcium plays a key role in strengthening the cell walls of the turfgrass plant, while potassium helps strengthen cell walls inside the turfgrass plant, which makes it harder for physiological problems to occur inside the cell wall (Haag and Serrato, 2006).

With regard to calcium applications, add a light amount of zinc along with the calcium because zinc helps calcium to translocate to the cell walls (Haag and Serrato, 2006).

### **AMINO ACIDS**

Amino acids are the building blocks of proteins. Under optimal conditions, proteins are able to perform the normal physiological function to synthesize amino acids, but intensively manicured turfgrass, such as golf courses and athletic fields, are rarely operating under optimal conditions because of stress caused by low mowing heights and traffic (Haag and Serrato, 2006).

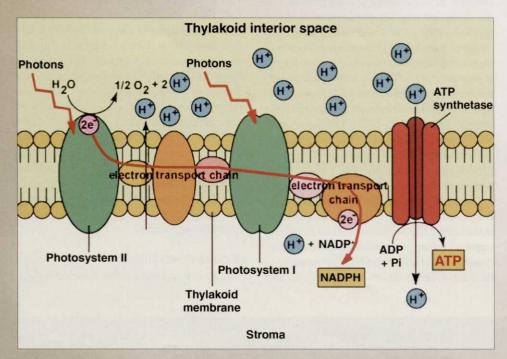
To date, 154 proteins in the turfgrass plant have been identified – 76 (49 percent) are integral membrane proteins. Twenty-seven new proteins without known functions, but with predicted chloroplast transit peptides, have been identified – 17 (63 percent) are integral membrane proteins. These new proteins are likely to play an important part in thylakoid biogenesis (Friso et al., 2004).

The application of amino acids plays an extremely important part in developing the proteins specifically designed to help chloroplasts, thylakoid membranes, photosystem I and photosystem II to function properly. These proteins are known as D1, D2 CP43, CP47 (de Weerd et al., 2002, Zheleva et al., 1998) and cytochrome b559. Of special importance is the D1 protein because it exhibits the highest turnover rate of all the thylakoid proteins (Matto, 1984; VonWettstein et al., 1995; Prasis et al., 1992; Aro et al., 1993; Schuster et al., 1988) and is highly vulnerable to singlet oxygen (Barber, 1984), a free radical.

### **ANTIOXIDANTS**

The antioxidants a-tocopherol (vitamin E), ascorbic acid (vitamin C), carotenoids (B-carotene), vitamin B6 and mannitol in some biostimulants play a vital role in scavenging free radicals (Barna et al., 2003) and helping protect chloroplasts, thylakoid membranes inside the chloroplasts, photosystem I and photosystem II.

The best biostimulant that I've encountered to date is the N.O.G. product.



### CAROTENOIDS (B-CAROTENE)

In terms of its antioxidant properties, carotenoids can protect photosystem I and photosystem II in one of four ways: (i) by reacting with lipid peroxidation products to terminate chain reactions (Burton and Ingold, 1984; DellaPenna and Pogson, 2006); (ii) by scavenging singlet oxygen and dissipating the energy as heat; (iii) by reacting with triplet or excited chlorophyll molecules to prevent formation of singlet oxygen, or (iv) by dissipation of excess excitation energy through the xanthophyll cycle (Mathis and Kleo, 1973).

Xanthophylls function as accessory pigments for harvesting light at wavelengths that chlorophyll can't and transfer the light energy to chlorophyll. But, they also absorb excess light energy and dissipate it to avoid damage in the xanthophyll cycle.

### A-TOCOPHEROL (VITAMIN E)

A-tocopherol (vitamin E) is considered a major antioxidant in chloroplasts in at least two different but related roles. It protects photosystem II from photoinhibition and thylakoid membranes from photooxidative damage (Havaux et al., 2002; Havaux et al., 2005; Delong and Steffen, 2002, Flohe and Traber, 1999). The antioxidant properties of vitamin E are the result of its ability to quench singlet oxygen and peroxides (Fryer, 1992; Sattler et al., 2006).

Although vitamin E is a less efficient scavenger of singlet oxygen than B-carotene, it might function in the thylakoid membrane to break carbon radical chain reactions by trapping peroxyl radicals (Fryer, 1992; Burton and Ingold, 1984; Mathis and Kleo, 1973).

### ASCORBIC ACID (VITAMIN C)

It's generally believed maintaining a high ratio of ascorbic acid is essential for the scavenging of free radicals (Mitler, 2002) and are needed in high concentrations in the chloroplasts to be effective in defending the turfgrass against oxidative stress (Noctor and Foyer, 1998).

The image to the left depicts how the electron transport chain moves through the thylakoid interior. Image: Gary E. Kaiser, Ph.D.

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# Research

Although ascorbic acid can directly scavenge the free radicals superoxide and singlet oxygen, the main benefit ascorbic acid plays in the prevention of free radicals is that it's an excellent scavenger of the hydroxyl radical (Blokhina et al., 2002; Yoshida et al., 2006). The hydroxyl radical is dangerous to turfgrass because it can inhibit carbon dioxide assimilation by inhibiting several Calvin cycle enzymes (Asada, 1996).

### VITAMIN B6

Apart from its function as a cofactor, vitamin B6 is also thought to act as a protective agent against reactive oxygen species, such as singlet oxygen (Bilski et al.,2000; Chen and Xiong, 2005; Ehrenshaft et al.,1999; Drewke and Leistner, 2001). Vitamin B6 is also the master vitamin in processing amino acids and plays an important role in developing proteins specifically designed to help chloroplasts, thylakoid membranes, photosystem I, and photosystem II to function properly.

### MANNITOL

The antioxidant mannitol has the ability to protect and quench two damaging free radicals: singlet oxygen and hydroxyl. Singlet oxygen is damaging because it can react with proteins,

pigments and lipids and is thought to be the most important species for light-induced loss of photosystem II activity, as well as the degradation of the D1 protein (Krieger-Liszkay, 2004). It has been demonstrated that when mannitol is present in the chloroplasts, it can protect plants against oxidative damage by the hydroxyl radicals (Senn, 1987; Shen, 1997).

### MANGANESE AND MAGNESIUM

Both of these nutrients are attached to the chlorophyll molecule that's located inside the chloroplasts. These two nutrients play a part in making turfgrass greener by helping develop chlorophyll. They also transport other vital nutrients and are responsible for many enzymatic functions and help prevent chlorophyll degradation in the cells (Haag and Serrato, 2006).

### CARBON

There's new evidence carbon plays a role in the development of the turfgrass plant leaf, and that a reduction in carbon reduces photosynthetic activity, which reduces carbohydrate availability to the turfgrass plant. There's also new evidence to suggest proper development of the turfgrass plant can't occur without proper amounts of carbon in the chloroplast (Raines and Paul, 2006).

There's more evidence to suggest that, if there's an abundant source of carbon in the thylakoid membranes inside the chloroplasts, it can be mobilized for use as an energy source during senescence (Graham and Eastmond, 2002).

### **HUMIC ACIDS**

Humic acids are another compound that contain antioxidant properties that promote the scavenging of free radicals. The added benefits of humic acid are that they increase the availability of micronutrients, phosphate and potassium to the plant and enhance the chlorophyll content of turfgrass.

Humic acids also stimulates root initiation because of the auxin-like activity they contain, which is most likely because of their ability to inhibit indoleacetic acid oxidase breakdown (Haag, 2005; Haag and Serrato, 2006). **GCI** 

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Editor's note: Literature cited in this article can be found on GCI's Web site, www.golfcourseindustry.com, posted with this article.

### **IMPACT ON THE BUSINESS**

### The plant health dilemma

he evolution of turfgrass science is, in many ways, similar to the evolution of human medical science. In less than a century, we've gone from the most rudimentary forms of nutrition and treatment (manure and heavy metal fungicides like cadmium and mercury) to feeding plants with key elements and treating pathogens that cause disease with highly specific and environmentally benign inoculants. It's not too different than medical science moving from leeches and bleeding to lasers and non-invasive surgery in the same time frame.

### **BACK TO BASICS**

One of the bigger trends during the past decade has been the "back to

basics" approach of combining traditional granular fertilization with liquid/foliar nutrition programs that are tailored to meet the needs of the turf and soil. The article above focuses on a core aspect of this trend – finding the right combination of nutrient elements to feed the plant what it needs to thrive.

By identifying the key aspects of photosynthesis and making sure your program meets those needs, you can make an excellent start toward creating a customized "diet" that fits your turf's photosynthetic requirements. More importantly, by understanding the basic nature of plant self-feeding, you can think about your nutrition program at its most fundamental level.

### IT'S ELEMENTAL, WATSON

The author effectively points out how a variety of elements and proteins help build up turf health from the inside out. Calcium, potassium, amino acids and various vitamins are all photosynthetic enhancers. The question is, how do you know which to use and in what combination?

The answer lies in a combination of soil and tissue testing and trial and error. By establishing a baseline and working with your local university, consultants and colleagues, you can determine the best mix of supplements. It's no different than getting a physical exam or blood test from you doctor to determine the best combination BY PAT JONES of diet, exercise, nutrition and

preventative medicines for your

own health.

### RETURN ON INVESTMENT

Many of the articles that we run in GCI's research section offer immediate opportunities for cost-sayings or instant improvement in turf quality or health. This is a different approach. The payback here is that, by understanding the building blocks of healthy plants, a superintendent can look at his nutrition program with a new set of eyes and develop a long-term approach.

In the long run, healthy turf is the best defense against pathogens and pests. GCI

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September 2007

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# Research

BY LARRY J. STOWELL, PH.D., CPAG

# Greens management

Water management, aerification and topdressing are keys to desired firmness

On Jan. 23, 2006, Santa Ana Country Club and the PACE Turfgrass Research Institute embarked on a multimonth study to analyze greens firmness by characterizing the current situation and then identifying management practices that can help achieve more consistent greens firmness throughout the year.

Factors contributing to greens firmness were identified, with soil moisture a key component. Greens were characterized by golfers as performing well, with good surface firmness, on the aforementioned date. Based on data collected Jan. 23, a tentative range of 15 percent to 25 percent soil moisture was identified as the target for producing optimal levels of firmness (tentatively characterized as ranging from 70 to 125 gravities on a Clegg meter).

Maintaining this level of performance throughout the year will be difficult, especially during the hot summer months when irrigation demand is highest. However, practices including modified aeration, topdressing and irrigation strategies, along with a soil moisture and surface firmness monitoring program will assist in achieving the best firmness possible while still maintaining turf health and quality.

### **DESCRIBING THE PROBLEM**

The golfer controversy about greens trueness and firmness has been ongoing for many years. The following quote from the U.S. Golf Association's "Timely Turf Topics" in May 1947 illustrates the persistent focus on firm and true greens:

"Putting surfaces should be firm to avoid foot printing and should be resilient so that a properly played shot will hold, but should be sufficiently solid so that a poorly played shot will roll over. The surface should be smooth and true as a billiard table. Density of the turf should be so great that individual grass blades are crowded to a true vertical position. "Graininess," "sponge," Figure 1. Operation of the Clegg impact soil tester. The hammer of the tester contains a sensitive decelerometer that measures the speed of deceleration on impact with the greens surface. The 2.25 kg hammer is lifted to a height of 18 inches and dropped. The measurement unit is gravities (g). In the example below, the Clegg recorded a firmness of 81 g. Values between 70g and 125g are desired for firm greens surfaces.









# Research

or "mat" destroy the accuracy and fun in golf. Governing factors include: choice of grass, soil texture, drainage and aeration, fertility level, and watering practices."

Not much has changed in the desire of golfers for firm and true greens surfaces since 1947. Despite this, methods for addressing the problem haven't been extensively researched and documented. This is partly because the nature of the problem varies widely from one golf course and one group of golfer's perceptions to another. It's also because the management practices that are required to improve firmness frequently require long-term overhauls of the greens.

### **FACTORS INVOLVED**

At Santa Ana Country Club, the governing factors that will influence firmness are the same as those listed in the aforementioned quote. Unfortunately, major reconstruction is required to modify the factors most directly implicated in greens firmness. These are the nature of the root-zone sand (which should optimally be changed to a firmer mixture), the turfgrass variety (which should optimally be changed to bentgrass, which provides a firmer surface than Poa annua) and improved drainage (which, by allowing water to move more easily through the soil profile, would increase the firmness and homogeneity of the greens). Without these major changes, greens firmness can't be fully maximized at Santa Ana Country Club.

There are, however, several less dramatic management practices that can lead to improvements. These include modifications in aeration, topdressing and watering practices.

An increased frequency of aeration will lead to firmer greens, but the compromise is that the trueness of the surface will be impacted for about 14 days following each aeration event. New, smaller diameter aeration tines might improve recovery and allow more frequent aeration to increase firmness, but increased aeration to improve firmness will have to be weighed against the negative (though temporary) impact on surface trueness. Even if increased aeration can't be tolerated, application of sand as topdressing without aeration is a practice that might be evaluated to increase the firmness of the greens during the summer.

A second, and more controversial factor is watering practices. Is it possible to reduce summertime irrigation or hand-watering while maintaining healthy *Poa?* Irrigation water

reduction to increase firmness carries the greatest risk. Once the soil has dried to a level that exceeds the ability of the *Poa* plant to extract the water, the plants will wilt and die. If the *Poa* dies, a minimum of six weeks of conducive weather conditions will be needed before the stand of *Poa* will return to acceptable putting conditions. In the peak heat of the summer, this period of time will be longer, and if traffic is allowed on the damaged areas, the time to recovery will be extended further.

Even though soil water management to levels that provide firm greens without damage to the *Poa* plant is a risky venture, one of goals of this project will be to determine if there is a way to reduce the risk of drying out *Poa* greens. How dry is safe? Can we monitor soil moisture to better adjust irrigation practices? What levels of soil moisture are adequate for the plant yet low enough to provide the desired firmness?

Soft greens have been described as greens that don't have sufficient ball bounce and roll after driving onto the green. Additionally, soft greens are more susceptible to severe ball marking. These subjective measures of firmness will help guide management practices and development of objective measures of firmness. The current firmness of greens was reported to be nearly ideal by golfers at Santa Ana Country Club during the day of sampling (Jan. 23, 2006). The range of firmness measured during this preliminary study will be used as a benchmark

to measure the impact of future management practices. These guidelines will need to be reevaluated during the year to be sure they're valid and the health of the *Poa* isn't compromised.

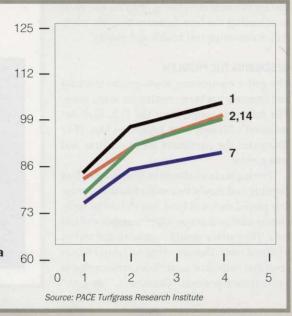
Sometimes fertility is mentioned as a factor in greens firmness. Fertility has been monitored at Santa Ana Country Club for more than 10 years. Soil nutritional guidelines have been managed within the range needed for good greens performance. Attempts to reduce fertility wifh the goal of firming greens will compromise the integrity of the *Poa* and increase susceptibility to diseases such as anthracnose and susceptibility to wear damage.

### **MEASURING FIRMNESS**

Firmness has been measured using a variety of tools. Baker et al. (1996) used simulated golf ball launchers that mimicked the impact of a ball hitting a green with the impact that might be typical for a 5 iron (53 degree impact angle, velocity of 22.7 m/s, backspin 750 rad/s) and a 9 iron (53 degree impact angle, velocity 18.8 m/s, backspin 880 rad/sec).

This unique research equipment isn't available for us to use, but fortunately, Baker et al. found there was a significant correlation between firmness evaluated using the ball impact simulators and the Clegg impact soil tester. Based on their fairly extensive surveys of golf courses in Britain, a range of Clegg measurements between 70 gravities and 120 gravities

drops of the Clegg hammer (Impact) at each of four sites for each of four green evaluated. G represents the average number of gravities of deceleration (a measure of firmness) for each of the four greens. Greens performance was near ideal at the time of sampling indicating these values are within the target guideline for firmness at Santa Ana Country Club.



was considered to result in good ball bounce and roll – not too soft and not too hard.

In a similar study conducted in New Zealand, Linde found greens reporting Clegg values of less than 50 gravities were too soft and greens that reported Clegg values of more than 140 gravities were too hard. The average for high-end golf courses in New Zealand ranged between 78 and 122 gravities. Based on this information, we have identified a range of 70 gravities to 125 gravities as an initial target for the Santa Ana Country Club. This range will be modified, if necessary, as work progresses.

The Clegg values observed at the Santa Ana Country Club during this preliminary study ranged between 62 gravities and 125 gravities. Based on this initial research, the greens are currently performing almost completely within the guidelines considered ideal for golf play (only two readings were below the guideline of 70 gravities).

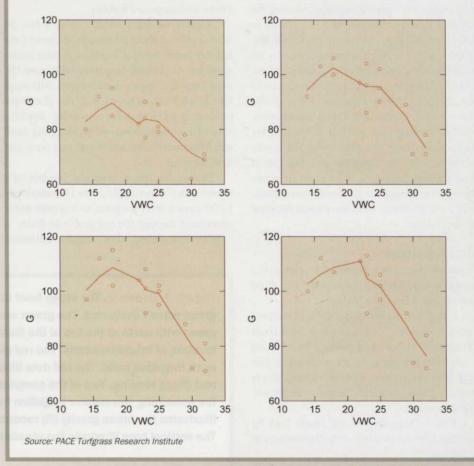
Golfer's positive evaluations on firmness, obtained January 2006, confirm this conclusion. It's expected that as hot weather and increased irrigation demands occur during the summer months, firmness might decline. It's during the warmer months that the greatest challenge in terms of maintaining green firmness occurs.

### MEASURING SOIL MOISTURE

Soil moisture conditions also were monitored during the Jan. 23 evaluation. The correlation between low soil moisture and firm conditions were confirmed at Santa Ana Country Club (Figure 3). Soil moisture levels ranged between 14 percent and 32 percent, although the majority of readings were within the guideline of 15 percent to 25 percent moisture. For sand-based greens, we generally target a range of roughly 15 percent to 25 percent for optimal turf growth and optimal firmness. Although moisture levels below 15 percent produce good firmness, turf health might be seriously compromised. A reading of 12-percent soil moisture resulting in turfgrass stress and damage.

Targeting soil moisture from 15 percent to 25 percent, and with *Poa* plants having roots that can extract water from the top 1.5 inches of soil during the summer, the plant will have just enough water to make it through a maximum water demand (evapotranspiration) day in the summer – about 0.3 inch of water. For that reason, the surface moisture in the top 1.5 inches of soil will almost have to be replenished daily.

Figure 3. The relationship between TDR300 VWC (volumetric water content as a percentage) and Clegg deceleration (G). Higher G values indicate increased firmness. Firmness declines when soil moisture levels increase above 25 percent. The upper left graph represents the first drop of the Clegg hammer. The upper right graph represents the second drop of the Clegg hammer. The lower left represents the third drop of the Clegg hammer. The lower right represents the fourth drop of the Clegg hammer.



If the *Poa* plant were capable of forming longer roots, less water would need to be applied daily because the deeper roots would have access to deeper soil moisture. The ultimate problem we will encounter when trying to manage *Poa* at lower soil moisture levels is that the short roots will require almost daily irrigation or syringing. Compounding the high water demand of *Poa* is that water must be applied through the surface of the green resulting in a higher water concentration at the surface of the green.

A further challenge with regard to managing

soil moisture relates to the inherent flaws of irrigation system designs. Compounded by the irregular shape of greens, it's unfortunate that portions of the same green might be irrigated from anywhere between two to five different irrigation heads. This results in uneven application of water and, therefore, uneven soil moisture levels. To compensate, superintendents must combine a series of tactics, including targeted hand-watering (to areas that receive too little water), irrigation system adjustments (micromanagement of irrigation head run cycles) and constant adjustment and

# Research

readjustment of the system.

By monitoring soil moisture and surface firmness parameters throughout the year, this study hopes to identify irrigation practices that can combine sometimes contradictory demands of keeping the turf quality high while keeping the playing surface as firm as possible.

A final soil moisture challenge relates to the need for periodic leaching (high volume irrigation) of the greens, especially during the summer months. Because lack of rainfall in Southern California between April and November, salts from irrigation water rapidly accumulate in the soil, where they cause problems including turf stress and death, destruction of soil physical properties and instigation of turf diseases such as rapid blight and anthracnose. Without leaching, the survival of Poa is highly unlikely. Surface firmness following leaching events will be compromised, but this is unavoidable. Improved movement of water through the greens via the recommendations below will decrease the intensity and duration of the problem.

### RECOMMENDATIONS

Based on the aforementioned research, the follow are recommendations that were to be implemented February 2006.

- Target soil moisture between 15 percent and 25 percent. You can use a Spectrum TDR300 with 4.8 inch probes. Purchasing a soil moisture meter is recommended. The TDR 300 soil moisture probe (\$1,195.00) is available from Spectrum Technologies (www.specmeters.com).
- Target Clegg impact soil tester 2.25 kg hammer deceleration between 70 gravities and 125 gravities.
- In the spring, aerify using three-eighthsinch hollow tines on a 2-inch-by-2-inch spacing and sand fill the holes using Caltega 7 USGA specification sand.
- A more aggressive aerification program than the one described above can be substituted if a club is willing to tolerate disruption of optimal golf play to achieve more dramatic results.

In the spring of the year, aerify using fiveeighths-inch hollow tines and collect the plugs. Apply one-quarter-inch depth of Caltega 7 USGA specification silica sand. Vertidrain using three-quarter-inch solid tines and sweep the sand into the holes and fill all holes to the top. This process will aid in firming the entire root zone, but it will require a repeat of the process for at least three years in the spring before the process can be terminated. This aggressive program will disrupt the trueness of the greens for an extended period of time and might result in stronger *Poa* growth in the aeration holes that will result in a slightly bumpy surface. This negative impact can be partially managed using Primo and increased fertility.

- Lightly topdress weekly using a No. 30 sand applied at about 50 pounds per green (one bag dry sand) using a Scotts or similar rotary spreader. Nighttime irrigation will move the sand into the upper thatch layer. Although thatch has been managed well, *Poa* plants are producing more thatch continually. Application of increased levels of topdressing sand will help modify the thatch and mat layer and firm them up.
- During the irrigation season, implement a monthly Aqueduct application (4 ounces per 1,000 square feet) program to improve water movement through the soil profile to drain.

With Poa greens, don't expect optimum

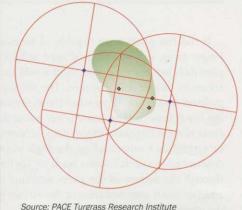
greens performance during the months of July, August and September. Prevent turf loss during these months so that fall winter and spring greens performance will be premiere. It's unlikely that optimum performance can be provided throughout the year. If summer is the target for good performance, more aggressive aeration will be needed at other times of the year to improve the root-zone composition and allow deeper rooting and improved drainage. GCI

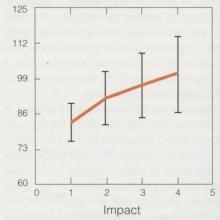
Larry J. Stowell, Ph.D., CPAg is a research director of the PACE Turfgrass Research Institute (www.paceturf.org) in San Diego. He can be reached at 858-272-9897.

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Figure 4. Green 2. The steep front of this soil-based, 3,540-square-feet green wasn't evaluated. The green area illustrates the orientation of the green with north at the top of the illustration. The blue dots illustrate the location of irrigation heads. The red circles illustrate the 67-foot throw of each irrigation head. The red dots illustrate the location of each soil moisture and Clegg reading. Two of the samples receive irrigation from two heads, and the remaining two receive irrigation from three irrigation heads. The graph illustrates the mean gravity (G) recorded for each impact with the hammer. The vertical bars illustrate the standard error of each mean.





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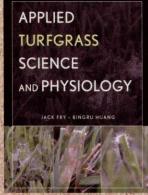


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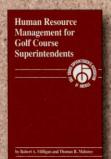


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BY KATIE MORRIS

# Outsourcing aquatic needs

A superintendent contracts pond maintenance because it's cost effective

Superintendents generally perform pond maintenance in house, but it's more beneficial for Todd Pippin, superintendent of the Club at Longview in Weddington, N.C., to outsource pond maintenance to Garner, N.C.-based Foster Lake & Pond Management.

"We're in a unique situation in which we have a service contract with a company that handles 95 percent of our needs," Pippin says.

Pippin's relationship with Foster Lake & Pond Management developed during his previous job as lead assistant superintendent at the Governors Club in Chapel Hill, N.C.

Longview has eight ponds that vary in size from a quarter of an acre to 7.8 acres – a total of 14 acres of surface area. Some ponds are used as the water supply for course irrigation, one is used as a sediment control pond, and others are scenic features.

"With the volume of water we use and the number of water systems we have, contracting is cheaper," Pippin says.

He spends about \$11,400 a year for Foster Lake's services.

Specific tools and products are needed for pond management, and using a service that has access to such tools is easier for Pippin. It's also more cost effective to have certified professionals apply the aquatic pesticides rather than his crew.

"My guys are certified in turf and ornamental pesticide applications," Pippin says. "They would have to go back and take another test to become certified in aquatic pesticides."

Pippin signed a 12-month contract with Foster Lake to have one of its technicians perform the following tasks monthly:

- · Pick up trash around the ponds;
- · Inspect for pests such as muskrats;
- · Check pH levels in the ponds;
- Apply pesticides such as diquat dibromide and copper compounds if needed;
- Add dyes if needed (dyes keep temperatures down and prevent algae from bloom-



Superintendent Todd Pippin spends about \$11,400 a year for a contractor to take care of all his pond management needs. Photo: Club at Longview Longview has eight ponds that vary in size from a quarter of an acre to 7.8 acres – a total of 14 acres of surface area. Photo: Club at Longview



ing by limiting light penetration); and

• Sample fish population (if one is dominate over the other, it can be harmful to a pond's health).

Pippin, who views each maintenance task as "a spoke in a wheel representing a sound management system," also has been experimenting with barley as a way to control algae. Research shows barley releases a natural toxin in the water that suppresses algae, he says.

"We put 8-inch-diameter tubes of barley into the ponds, and the results have been intermittent," he says. "Sometimes it works, and sometimes it doesn't."

The technician that's assigned to Longview checks each pond and picks up trash once a month. The inspection can last between four to eight hours, depending if the technician has to apply aquatic herbicides or other pond treatments.

"The same person comes out every month, so a relationship has formed between us," Pippin says. "It also gives him the opportunity to become familiar with the property and know it inside and out."

The preventive measures are for aesthetics, the health of the ponds and the entire club because Pippin uses pond water to irrigate the property's turf. Everything from the clubhouse surrounds to landscaped areas to the golf course is irrigated with water pumped from the ponds.

"Typically, during the growing season, we pump from most of the ponds every night and replenish the water supply with well and storm runoff water," he says.

Even through Foster Lake handles pond maintenance and treatment, Pippin purchases the aerators that run 24 hours a day. On average, one large professional-grade aerator costs between \$12,000 and \$15,000. He spends \$100,000 of the more-than-\$1-million annual maintenance budget for 13 5-hp aerators and one extra motor.

"Before purchasing, we had to calculate how much water to circulate to get the oxygen levels we needed," he says. Aerators are a necessary component of pond maintenance because they circulate water to maintain oxygen levels and reduce algae and odor, keeping a pond clean and healthy. With larger ponds, Pippin uses several aerators to circulate water, and depending on the size of the pond, adds or takes away aerators as needed.

Pippin purchases his aerators from a local distributor that sells Otterbine Barebo products. He's been using Otterbine since 2002, partly because of the company's service.

"It's a family-owned, service-orientated business that follows through with the process from sales to service," Pippin says.

For those considering outsourcing their pond maintenance, Pippin suggests looking for contractors, asking for client referrals, talking to others who use them and picking their brains for ideas and information.

"You want to find someone who's on a preventive curve and wants to head-off problems, not someone with a reactive approach," he says. **GCI**  BY KATIE MORRIS

# Combining natural and purchased resources

Virginia Beach golf course coordinator depends on Mother Nature and a distributor to maintain ponds

ond maintenance plays an important role in the overall look and feel of a golf course, but being in charge of three courses and keeping up with maintaining them can be challenging. Kevin Bennington, golf course coordinator for the city of Virginia Beach relies mainly on natural resources to maintain the health and beauty of the ponds on the city's courses.

Bennington oversees the budgets, staffs and equipment maintenance for three 18-hole municipal golf courses: Red Wing Lake, Kempsville Greens and Bow Creek. Previously, he was the golf course superintendent at Red Wing. In July, he was promoted to his current position.

Bennington is responsible for maintaining multiple ponds on each course. The ponds occupy 44 acres: two at Bow Creek, 12 at Kempsville and 30 at Red Wing. The number of ponds on the courses total 24: two at Bow Creek, eight at Kempsville and 14 at Red Wing. The ponds at Red Wing range in size from 8,000 square

Even with this many ponds to maintain, Bennington relies mainly on nature to help keep them looking aesthetically pleasing and healthy.

"We leave a lot of it to nature," he says. "We don't use aerators

because we get decent current flow from the wind."

The three courses are located near larger bodies of water including the Atlantic Ocean and Back Bay. The wind and ocean breezes drive the ponds' tides, which circulate the oxygen in the water, Bennington says. The natural system seems to work because he says he hasn't had a problem with algae and other unwanted vegetation.

The courses are irrigated with fresh water from storm runoff or supplemental wells. Red Wing has been redesigned to collect everything on site for reuse as part of a more environmentally friendly



Kevin Bennington relies mainly on Mother Nature to maintain the 14 ponds at Red Wing Lake Golf Course. He doesn't use aerators because of current flow from the wind. The course is near the Atlantic Ocean. Photo: city of Virginia Beach



approach to irrigation.

Even with nature's help, Bennington still is required to take some preventive measures throughout the year to make sure the ponds remain healthy. They're inspected daily for any abnormalities, water tests are conducted once a year, and a flail mower is used along the banks of each pond semiannually.

"We purchase flail mowers with a 20-foot extension to get down off the side of the banks," he says. "We spend two hours a month during the summer doing this kind of maintenance."

But nature can't help Bennington with chemical applications. There's a stagnant pond at Bow Creek that requires chemical treatments. For this application, Bennington turns to Turf & Garden to provide him with Aquashade, a dye containing copper sulfate that prevents algae growth. He says a gallon of Aquashade or a case of dry packs can last between two to three years.

Each course has about a \$500,000 annual maintenance budget of which \$110,000 is spent on chemicals and fertilizers. Only \$300 of the chemical spending is for treating the pond at Bow Creek.

The city of Virginia Beach has a contract with Turf & Garden and has been purchasing its aquatic products and other chemicals and

fertilizers from the distributor for more than 10 years.

"Who does the purchasing depends on the cost," Bennington says. "We can handle as much as \$5,000, but anything higher has to go through the city's purchasing department."

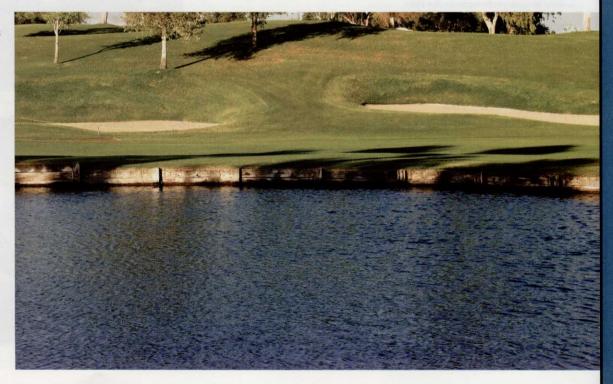
With noncontract vendors, Bennington writes specifications and has to generate at least three quotes from companies who meet them. From there, he's required to go with the lowest bidder or justify the difference.

The city's and Bennington's loyalty to Turf & Garden has much to do with the location of the company. Bennington's sales representative is located in a neighboring city and can get him anything he needs within two hours, which has been helpful when Bennington needs a product or part immediately.

Bennington likes the service he receives from Turf & Garden because the company's prices are fair, it's easy to work with and its representative is always available. Turf & Garden's biggest selling point for Bennington is its warehousing option.

"Not only do I enjoy its pricing and location, but it also warehouses all of our chemicals so I don't have to maintain inventory on site," he says. **GCI** 

To help maintain stagnant ponds, Bennington applies a dye containing copper sulfate to help prevent algae growth. A gallon of the product, Aquashade, can last as long as three years. Photo: Allen Rockwell



### Raven fungicide

- · Controls diseases including brown patch, dollar spot, leaf spot, large patch, fusarium blight, necrotic ring spot, fusarium patch (Pacific Northwest only), gray and pink snow mold, and corticum red thread
- · Contains two pounds of iprodione per gallon
- · Extended residual disease control lasts 14 days or longer
- · Offers quick disease knockdown, even while hot and humid
- · Begins taking out mycelium in as few as 24 hours after application

Phoenix Environmental Care golfcourseindustry.com/readerservice #200

### Ronstar Flo herbicide

- · Registered for use on dormant established Bermudagrass, zoysiagrass and St. Augustinegrass
- · Contains oxadiazon
- · Provides preemergent control of goosegrass, crabgrass, annual bluegrass and annual sedge
- · Should be applied to dormant turf in late winter or early spring at least two to three weeks before green-up at a rate of two to three pounds active ingredient per acre
- · Available in a flowable formulation in a 3.8-pound active ingredient per gallon container in a 2-by-2.5-gallon case

Bayer Environmental Science golfcourseindustry.com/readerservice #201

### RONSTAR'FLO

### LockUp herbicide

- · Contains the active ingredient penoxsulam
- · Can be used on warm- and cool-season turf
- · Provides as many as six weeks residual control of certain susceptible weeds, depending on use rate and environmental conditions
- · Shows no compatibility problems when it's mixed with other commonly used turf herbicides
- · Accepted for review and registration under the Reduced Risk Pesticide Initiative of the U.S. EPA
- · Shows signs it's working almost immediately; plant death occurs in two to four weeks

Dow AgroSciences golfcourseindustry.com/readerservice #202



### Hand-crank static discharge reel

- · Designed to prevent sparks from igniting in combustible environments
- · Configured to handle a galvanized or stainless-steel cable covered with a vinyl-coated wire rope, 5/32 inches in diameter
- · Features an integrated drag brake/reel stop to prevent free wheeling and cable uncoiling during storage or transport
- · Outfitted with a composite, grommet-style cable guide allowing for even wrapping

Coxreels

golfcourseindustry.com/readerservice #205

### Direct Connect chassis

- · Mounting system for the Cushman work vehicle
- · Offers low ground compaction
- · Weight distribution is optimized
- · Overall length is shorter than the standard tow-behind chassis
- · Receiver is mounted directly to the frame rails, using the top existing holes in the frame and two smaller ones in the side

Tycrop

golfcourseindustry.com/readerservice #204



### Contec DG dispersing granule fertilizer

- · Available in 10 formulations
- · Slow-release nitrogen source
- · Alternative to low-rate foliar fertilization
- · Disperse within 10 minutes after contact with water
- · Granules melt into the turf, so there's no mower pickup or risk of particle runoff or shoe or ball pickup

Andersons

golfcourseindustry.com/readerservice #203



### Nitrogen tire inflation system

- · Promotes sustainable environmental practices
- · Nitrogen is used to inflate tires on Precedent golf cars and Villager 4 hospitality vehicles
- · Improves fuel economy, promotes longer tire life and is friendlier to the environment than compressed air
- Generators use membrane technology to pump nitrogen into tires
- · Will be extended to other vehicles Club Car golfcourseindustry.com/ readerservice #206





### Porous ceramic

- · Inorganic soil amendment for use in greens construction
- Meets USGA-recommended rootzone mix performance criteria
- · Each particle holds water and oxygen in balance, storing nutrients vital to growth
- · Doesn't break down over time like

**Profile Products** golfcourseindustry.com/readerservice #207

### Gate valves

- · Feature push-on, flange x flange and mechanical joint connection types
- · Fusion bonded and epoxy coated
- · Available with a standard 2-inch operating nut or optional hand wheel
- · Nonrising stem flange x flange valves are available in 2.5 to 16 inches; nonrising stem push-on and mechanical joint valves are available in 2.5 to 12 inches
- on potable water lines, irrigation lines, waterworks connections and fire systems Danfoss Flomatic Corp. golfcourseindustry.com/ readerservice #208





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# **Consumer RESEARCH**

This year, *Golf Course Industry* is publishing feedback from golfers throughout the United States. We're conducting this research to establish a dialogue between the professional community and golfers. On this page, we'll report trends, likes/dislikes, suggestions and other information we gather through our face-to-face, Web-based and phone research.

# **Event golf**

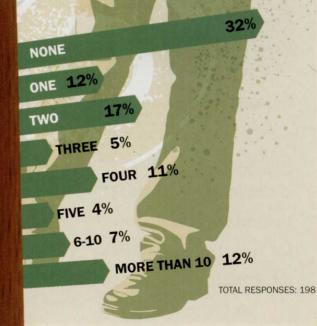
e all know the growth of rounds generally has been stagnant the past few years. Golf facility operators have been trying various ways to increase rounds at their facilities to increase profitability. Marketing to different groups such as children, women, families and minorities has been one way. Although a separate issue, retaining these folks is just as important. Charity events and other types of benefits are another. Organized events are a good way to reach people who normally wouldn't play golf. Many operators view this as a key to growing the game.

Below are charts that show how many rounds some golfers played last year and how many of those were part of an organized event. How many group events do you host annually?

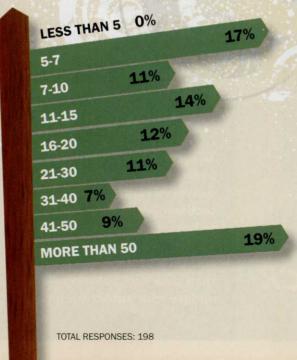
How much revenue do they generate? Can you host more events? Is it worth it? What effects do these events have on the condition of the course? These are some questions managers should be asking themselves to find a way to increase play at their facilities.

A random sample of golfers throughout the country were surveyed by InsightExpress, a market research company. Golfers surveyed played at least five rounds a year. There was a total of 198 responses. Given the sample size and desired confidence levels, the data tolerance is +/- 7 percent.

How many rounds did you play in 2006 that were organized events as opposed to individual play golf (scrambles, best ball etc.)



# Approximately how many rounds of golf did you play in 2006?







# A better crimper

ill English, president of Houston-based Bill English Construction Management and Consulting, designed a unique crimper attachment for a riding bunker rake in 1998 when he was overseeing the sprigging of the greens at Black Horse Golf Club in Cypress, Texas. However, the motorized crimper used at the time was only 24-inches wide, and the operator left footprints in the greens. English showed his crimper-design sketch to then superintendent Roger Goettsch, and together they improved the design, built a prototype and used it on the next green sprigged. As a result, the green was crimped three times faster, there were no impressions on the surface, and there was a more uniform depth of cut.

English's latest model is being used at Kohanaiki Golf & Ocean Club in Kona, Hawaii, where he's the project manager and Brian Tanner is the director of agronomy. The newer model is 6-feet wide and about 1-foot tall. The cut-in, stainless-steel discs are 1/8 inch by 9 inches in diameter and are welded to a 6-feet-long, 2-inch-diameter shaft on 2.5-inch spacings. The shaft is held on to the frame by two large bearings. A strong, safe metal hood on top of the frame allows an employee to stand on it during the crimping operation so the discs can penetrate deeper. It mounts to a riding bunker rake with quick disconnects.

After the sprigs are crimped in one direction, they're rolled with a walk-behind roller filled with water that eliminates the bunker rake tire prints, closes the cut-in area and provides 100-percent contact between the sprigs and greens mix.







Globetrotting consulting agronomist annually with his digital camera in-hand. He relating to maintenance equipment from the golf a few ideas of his own - with timely photos explore the changing world of golf course

# Name recognition

arren J. Davis, director of golf course operations at the Olde Florida Golf Club in Naples, designed a simple but effective daily crew assignment board in the employee lunch/ meeting room. Davis used 4-inch-by-1-inch magnetic holders for each employee's name, which was typed using a 38 Times New Roman font in Microsoft Word. After all the names were printed on a single page and laminated, each name was cut to fit snuggly inside the magnetic holders. The lamination process keeps the surfaces clean and makes for easy routine cleanup.

Instead of writing the daily routine crew assignments with a dry-erase marker, Davis uses the same size magnetic holders with the daily crew assignments for the eight most common daily tasks: mowing greens, tees, fairways, approaches and rough, as well as changing the hole locations, raking bunkers and servicing tees. Each assignment is color coded for

each task. The color coding makes it easy to see how many people are performing each task because they can change daily.

The digital color photos of each employee is a nice touch for employee recognition. Each photo is printed on photo paper and placed on a self-adhesive 2.5-inch-by-2.5-inch magnetic holder and then laminated to help keep them clean. All magnetic holders were obtained from Timewise (www.timewiseboards. com). A package of 12 magnetic holders cost \$13.85. The total cost for the holders, lamination and photo paper costs less than \$75. GCI



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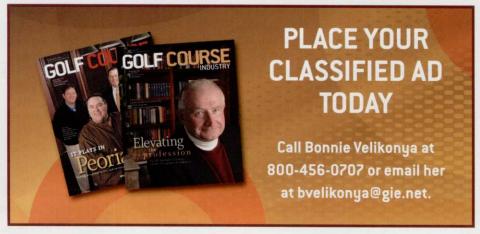
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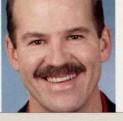
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Pat Jones is president of Flagstick LLC, a consulting firm that provides sales and marketing intelligence to green-industry businesses. He can be reached at psjhawk@cox.net or 440-478-4763.

### **GRUMPY OLD FARTS**

our honor – and ladies and gentlemen of the jury – I stand here before you prepared to plead guilty to four counts of being a grumpy old fart. Allow me to present the evidence for my own conviction for the offense.

First, as I age, I find myself increasingly unwilling to embrace new ideas. The last really new concept I thought was cool was Ronald Reagan's "Star Wars" Strategic Defense Initiative. That turned out well, didn't it?

Second, my sense of fashion ceased to exist in about 1985. My closet is a tribute to preppyism. It contains hanger after hanger filled with blue blazers, boring striped ties, white button-down shirts and a dozen pairs of khakis. To my credit, I don't own those ultimate preppy status symbols: madras plaid Bermuda shorts and penny loafers.

Third, the books I read these days tend to be exclusively about old, dead white guys. Innovative new fiction? Bah! Instead, biographies of Benjamin Franklin, Thomas Jefferson, Mark Twain, Harry Truman and Albert Einstein fill my bookshelf. I'm a big believer in learning from the experiences of those who've been long moldering in the grave. For me, "deceased" automatically equals "smart."

Finally ... modern music? If I had an iPod, I'd be busy trying to figure out how to digitize and transfer my good old vinyl LPs by Frank Sinatra, James Brown, The Beach Boys, Jimi Hendrix and the Beatles onto it. Sue me, but I like that scratchy old sound. It takes me back to being a pimply-faced, hormone-driven teenager necking with my girlfriend in a dark basement.

So, as I wrestle with the onset of my grumpy old fartism, I began to ponder the meaning of what it means to be a "young buck" versus being "a cagey old veteran" in the superintendent profession. Here are a few observations:

A wise man once said young superintendents make their reputation by spending money while old superintendents keep theirs by saving money. That might be true as a general rule – particularly at higher-end private clubs that get rid of a veteran and hire a young guy with new, exciting ideas. Yet it sounds like a corollary to the cliché that a conservative is a liberal who's been through an IRS audit. The bottom line is that experience teaches us patience and caution. The question is whether it teaches you when to be selectively aggressive as well.

A track record is exactly that: a list of wins and losses. No one – and I mean no one – goes through 20 or 30 years in this business without making mistakes or being perceived as making mistakes. A young gun is simply a veteran who hasn't yet had the opportunity to screw up royally.

To facilities – don't let a handful of loudmouths force you into a bad decision about a veteran superintendent.

That said, knowledge is collective and grows throughout time. The good young bucks have listened and learned carefully from the grizzled old bastards who've already made those mistakes. In contrast, the not-so-good-young bucks think they know it all because of a piece of paper from a turf school and an internship at Augusta National, Olympic or Pine Valley. Nice credentials, but it won't guarantee you a six-figure salary and the respect of your peers.

On the other hand, there are old guys who've simply stopped learning and trying new things. They get too settled and too comfortable and make the almost always fatal mistake of forgetting whose golf course it really is or by living by the mantra of, "That's the way we've always done it." I don't mean that you don't take the required classes and attend seminars. I mean you

forget to listen and embrace what you hear. There are too many new research studies, agronomic ideas and techniques constantly being generated that you can't afford not to hear and seriously consider them.

I'm guessing, but I'd estimate there's about a 50/50 success rate for the facilities that choose to dump the old guy for the young guy. I don't blame the club, the old guy or the young guy for the situation. It simply happens, like a big pile-up at a dangerous intersection. Politics at the facility change. Old guys get too cozy. Young guys get antsy and figure they're ready for the big job. Like those car accidents, it's usually a "no-fault" situation.

So here's my advice to all parties involved: To facilities – don't let a handful of loud-mouths force you into a bad decision about a veteran superintendent. That old guy's steady hand might be the key factor that keeps the other 90 percent of members or players happy. He might also be the person who saves the golf course when something weird or unexpected happens. Experience matters when push comes to shove.

To the young guys – you know a lot, but admit to yourself that you have so much to learn. You might not think you'll be in your current job forever, but the only thing in life that's certain – besides death and taxes – is your reputation. Protect it like it's a newborn baby.

To the old guys – never, ever get so comfortable that you lose track of the priorities that got you the job in the first place. It's easy just to manage the day-to-day, but don't give up that keen focus on member satisfaction, appeal to public players and that "something new" that commands the customer's attention. If you're resting on you laurels, you lose. You may be an old fart, but you can't afford to be an old thinker.

Maybe it's because I'm a grumpy old fart myself that I tend to be more sympathetic to the folks who have been there and done that ... as long as they don't forget what made them be there and do it in the first place. You can survive, as long as you always think young but act old. GCI

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