

April 2004

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GOLF

COURSE NEWS

Serving the Business of Golf Course Management

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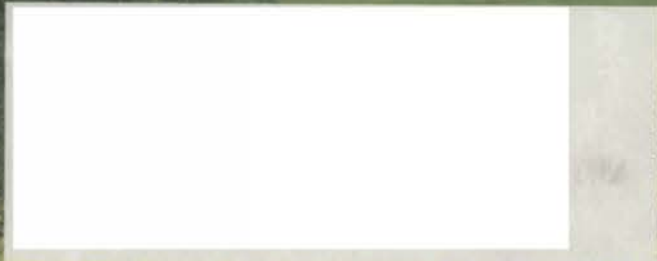
Your next job

Managing
consultants

New products
at GCSAA

Design-build
cuts time and costs at

Sutton Bay



Good people



From left: Don Smith, President; Scott Taylor, Chief Engineer; Bill Kenny, VP Engineering and Manufacturing and the new Smithco Sweep Star P-48 Turf Sweeper.

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founder of Smithco

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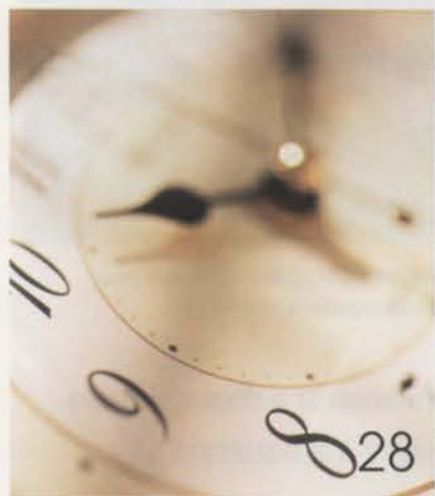
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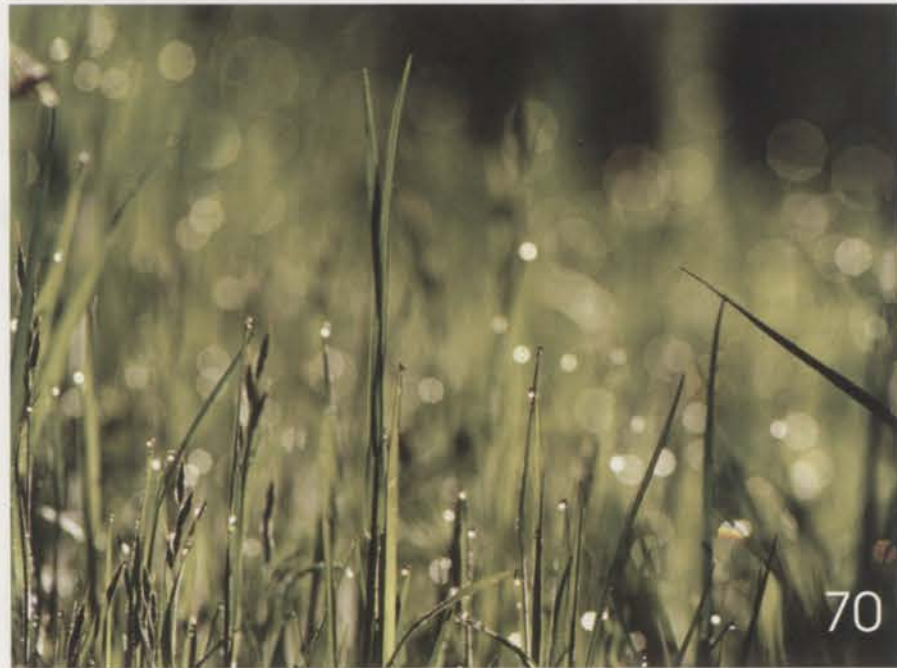
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Roger Stanley
Editor-in-Chief /
Associate Publisher

Managing trust

Trust, or the lack of it, is in the news a lot lately, whether the subject is politics, business, sports, entertainment or religion. Trust is an equally important issue in our workaday worlds. As managers, golf course superintendents have to deal with trust at every level. You need to trust your boss or the owner. You need to trust other managers. And you want your employees to trust you – or they won't deal squarely with you.

But what is trust? Recently I heard a presentation on trust that can help you evaluate it objectively. There are four necessary elements of interpersonal trust:

1. Reliability – Does a person do what he says he will do? Does he have integrity? Are his actions living up to the values he claims to have?

2. Openness/honesty – Does a person only give selected facts? Does a person tell white lies? Does a person never volunteer information?

3. Competence – Does a person have the necessary core skills and abilities? Does he have interpersonal skills, including the ability to listen?

4. Concern – Is a person considerate? Does he have a benevolent attitude toward others? Does he think others are as important as he is?

All four elements must be present for interpersonal trust. Two or three aspects won't cut it. For example, if an employee is competent, open and concerned, but not reliable – he sometimes doesn't show up for work on Fridays – you can't trust him.

If you don't trust someone, and you're not exactly sure why, try using the above criteria to figure out what's missing. Managers also can use the criteria to test ourselves in relation to those who work for us.

On March 10th the U.S. Citizenship and Immigration Service demonstrated why it can be difficult to trust the judgment of our government. The agency announced that it had received enough H-2B petitions to meet this year's congressionally mandated cap of 66,000 new workers. After March 9 no more H-2B petitions were accepted.

Translation: If your application forms were not received by March 9, then you won't get any H-2B help this season. You might have had that help last year – because the government let the quota be exceeded

by almost 20 percent. You might also still get help this year, perhaps later than you would like, because Congress is trying to hammer out a bill to expand the quota by 40,000 to reach a total of 106,000.

Most superintendents with H-2B experience say the program works. Seasonal foreign workers come to the United States with documentation under a program that benefits them and their employers. When done, they go home. They can return the following year if they have a job lined up. If they break the rules while here, they are sent home. No job can be given to an H-2B worker if a qualified U.S. citizen wants it.

No one should have a problem with the government enforcing the law – in this case the quota. But laws should be enforced uniformly year-to-year. The problem with the quota is that it is set too low, especially when you consider how easy it is to enter the country illegally. Some golf courses that can't find legal help might be tempted to hire illegal workers.

Expanding H-2B makes sense for another reason. Given the terrorist threat, H-2B could be a key part of the solution. We're fingerprinting and photographing people who fly into our airports with passports, but in many places, people can walk in illegally. Doesn't common sense tell us that in the interest of national defense, we should seal our borders and only allow qualifying foreign workers to enter under an H-2B program that includes a security check?

Numbers can mislead. The April 5, 2004 issue of *Time* magazine ran a brief item and photo of a golf course under its "Numbers" column. It read, "2.5 billion: Gallons of water it would take to support 4.7 billion people at the U.N. daily minimum." Then, "2.5 billion: Gallons of water used daily to irrigate the world's golf courses." This misinformation positions golf as a wasteful business, but it uses faulty logic – it's not an either-or scenario. According to the U.S. Geological Society, the world has 2 million cubic miles of fresh water stored in the earth, and 60,000 cubic miles stored in lakes, inland seas and rivers (one cubic mile is more than one trillion gallons). Clearly, the world does have water quality and/or water shortage problems in some areas, but it does not lack fresh water. Golf irrigation is not the problem or the solution. GCN

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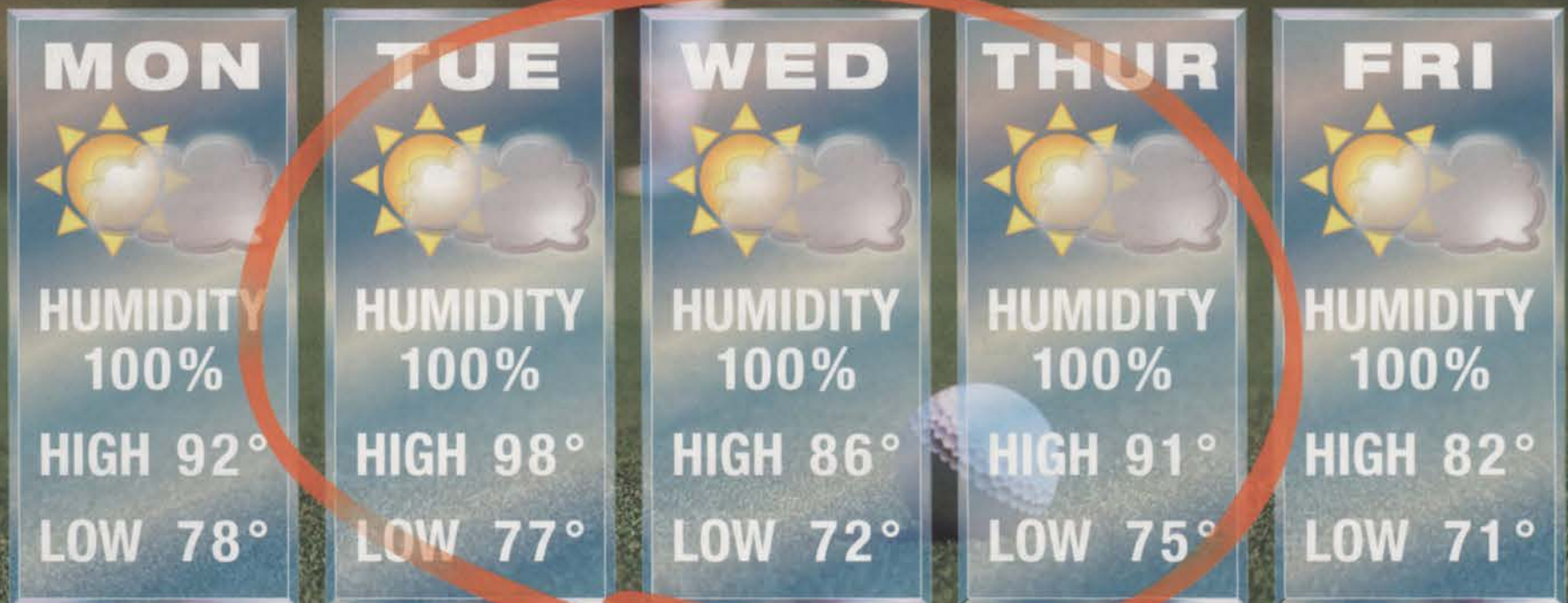
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Count on Cleary

Budget article is on the money

The budget article in the February issue was exceptional. I have re-read it several times. I love the full-page photo of superintendent Tommy Witt. The issue was just terrific. Keep up the good work

BOB WILLIAMS, past president of GCSAA, and (retired) superintendent of Bob-O-Link, Chicago, Ill.

Integrity and character count

I just finished reading "How are you doing, and how do you know?" the cover story in the February 2004 issue. WONDERFUL! Every Super should read it ... twice, and take heed to the career hampering pitfalls of many of my fellow peers. When it comes down to it, integrity and character are the key words.

DAVID J. SOLTVEDT, superintendent, The Ridge at Castle Pines North, Troon Golf, Castle Rock, Colo.

Shipping sand for bunkers

Enjoyed the article on bunker quality in the February issue. Quality bunker sand is not available in my part of the country and I am interested in information on having it shipped by rail or truck. Having it trucked in would cost a fortune, so I am looking for alternatives. Any advice?

WADE VECCHIO, CGCS, Thunder Canyon Country Club, Reno, Nev.

Kevin Ross, CGCS, responds: Planning is the key. Last year we had 250 tons shipped by rail from Pro-Angle in Plainville, Ohio, (phone 800-536-3232, Ext. 3103) to Denver. Our distributor hauled it directly from the boxcar to an asphalt parking lot we had prepared. We had prepared bunkers on three holes and moved all the sand in two days. This sand is expensive, but it is awesome material (Jack Nicklaus loves it). This year we plan to complete five additional holes. I suggest looking for the closest supplier of the sand you want, make arrangements to handle it a minimum number of times and negotiate the best price you can.

Solving bunker woes

Thank you for your excellent article, "Bunker Quality Factors," in the February issue of *Golf Course News*. I am a member at a club that experiences virtually every one of the problems described. I would like your advice about green side bunkers with very steep faces. Gully-washing rains wash out on these faces and when raked smooth shots hit on the fly almost always bury in the soft re-raked sand. How can we avoid these buried lies in these bunker faces? Our club is

financially challenged, so bunker redesign or replacement of the sand are not options.

GEORGE MCEVOY, Wichita, Kansas

Kevin Ross, CGCS, responds: Let me suggest a few possible solutions to discuss with your superintendent: Identify where and how the water is entering the bunkers with the worst wash-out problems/highest playability for golf shots. If the problem is surface water, then try to divert it with small swales or berms. Cut the sod off from these areas, increase or decrease the grade to divert the water, then re-sod. But make sure these reconstructed areas NEVER allow surface water to back up on to the green surface. How the bunker is edged or cut also may make a difference. With good sand, I recommend a vertical edge on the bunker of some 8 to 12 inches instead of a sloped edge. Some bunkers simply require more intense work.

The new *Golf Course News*

You've raised the bar on the value of the publication with meaningful content for the superintendent. It's a reality that the industry is challenged right now and the superintendent needs to communicate his/her value and even change their role. Your content is new, fresh and thought provoking. I wish you the best.

Mike Thurow, president, Spectrum Industries, Plainfield, Ill.

I want to say GREAT JOB! The new format is super!

TONY RZADZKI, CGCS, The Bull at Pinehurst Farms, Sheboygan Falls, Wisc.

What an improvement. It's long overdue. I now read the complete magazine.

GARY ERXLBEN, superintendent, Camarillo Springs Golf Club, North Hollywood, Calif.

The new look is very appealing, flowed very well and was a joy to read. My superior even asked if I had read one of the articles, something he has never done before with any industry publication.

JASON GERLACH, superintendent, Golf Club of the Everglades, Naples, Fla.

I love the magazine, but it's too large and doesn't fit in a briefcase well.

BOB GROSSI, marketing director, Hurdzan/Fry Golf Course Design, Columbus, Ohio

Editor's note: Golf Course News remains a tabloid publication. This larger format helps distinguish the magazine and lets us showcase beautiful courses with large photos. GCN

GOLF COURSE NEWS
Serving the Business of Golf Course Management

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*source: USDA

USE READER SERVICE #12

Industry News

Federal H-2B cap impacts golf industry labor

U.S. Citizenship and Immigration Services (USCIS) has reached its cap for non-agriculture guest worker visas this year, leaving superintendents, landscapers and others in a staffing bind.

The national organization received enough H-2B petitions to meet this year's congressionally mandated cap of 66,000 new workers. After March 9, 2004, USCIS stopped accepting any new H-2B petitions for the fiscal year 2004.

"We have been informed that the quota has been reached," says Chuck Twist, president, H.O.L.A. Labor Consultants, Stillwater, Okla. "However, our company, as well as a large percentage of other companies that rely on the H-2B visa program for their workers, have not gotten workers yet – and we are now being informed that we will not be able to get our workers this season due to the quota being reached."

The congressional cap is sure to impact hundreds of companies across the country that rely on the H-2B visa program for seasonal workers and the economy as a whole, Twist asserts.

Now he and others are short on time to find and train alternate laborers before the busy season begins. Twist also notes the far-reaching impact of the H-2B restriction, stating that the March 9 cap will have a rippling effect.

"This situation not only affects my company and the companies around the nation, it also affects our families, our full-time permanent employees and their families, our workers in Mexico who were promised jobs and their families – and the list goes on," he adds.

Twist and other industry professionals have called, faxed and written letters to local and national representatives concerning the issue.

In the meantime, the USCIS has implemented the following procedures for the remainder of the year:

- USCIS will process all petitions received by the end of business on March 9, 2004.
- USCIS will return all petitions subject to the annual cap (along with the filing fee and, if applicable, the premium processing fee) that are filed after the end of business on March 9, 2004.

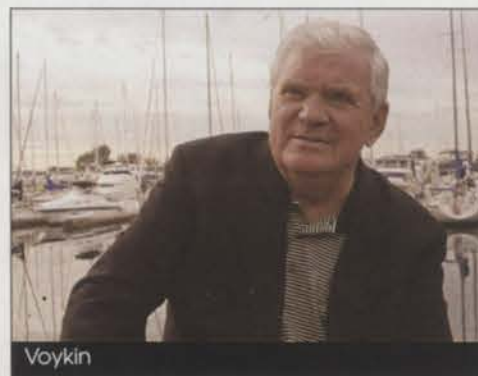
- Petitioners may re-submit or file new petitions when they have received labor certification approval for work to start on or after Oct. 1, 2004.

Petitions for current H-2B workers do not count toward the congressionally mandated H-2B cap. Accordingly, USCIS will continue to process petitions filed to:

- Extend the stay of a current H-2B worker in the United States
- Change the terms of employment for current H-2B workers
- Allow current H-2B workers to change or add employers

For more information about H-2B, visit www.golfcoursenews.com.

Voykin receives Superintendent of the Year award



After 55 years in the golf industry, Paul Voykin, superintendent at Briarwood Country Club, Deerfield, Ill., received "the greatest honor of his life" when he was named Superintendent of the Year during the GCSAA's International Golf Course Conference & Show in February.

Superintendent at Briarwood Country Club for the past 43 years, Voykin was modest when presented with the award. "I'm just a greenskeeper who tried to please the men and women at my club," he says. "I have perseverance. I don't give up."

Among his career highlights, Voykin is credited with helping start a trend toward allowing native grasses to flourish on courses, thereby reducing the amount of maintenance and pesticides needed to maintain a golf course and adding to the course's natural beauty. He also played the lead role in the renovation of Briarwood's original 18-hole course in 2001-2002.

Voykin started his career at an 18-hole golf course at Jasper National Park in Jasper, Alberta, Canada, when he was 21 and his brother was 19. "We saw an ad in the paper and started off cutting greens with

hand mowers. It just clicked," he remembers. "I knew that was what I wanted to do." Voykin dedicated the award to his brother, who passed away last year.

Reality TV reaches the golf industry

Natural Golf Corp., recently announced that it will be the subject of a new reality television series on The Golf Channel. With major implications for frustrated golfers everywhere, "The Natural Golf Makeover Challenge" is scheduled to debut in prime time in late June.

In the series, golfers will have the chance to have their entire golf game "made over" by a team of experts. The experts will bring a cross-discipline approach by working on golfers' swings, mental approaches, fitness, fashion, equipment and etiquette. Each episode will include weekly challenges and contestants as the show's makeover participants work on improving  **THE GOLF CHANNEL** their overall approach to the game. In the series finale, all of the makeover participants will compete for the chance to win prizes. There also will be opportunities for viewer involvement and participation.

"I expect that this will be a unique television event that will provide golfers of all playing abilities with the road map to having a more enjoyable golfing experience," says Andrew Wyant, president and chief executive officer, Natural Golf Corp.

The company expects to offer viewers of the show a total golf game makeover through its network of 125 golf school locations nationwide.

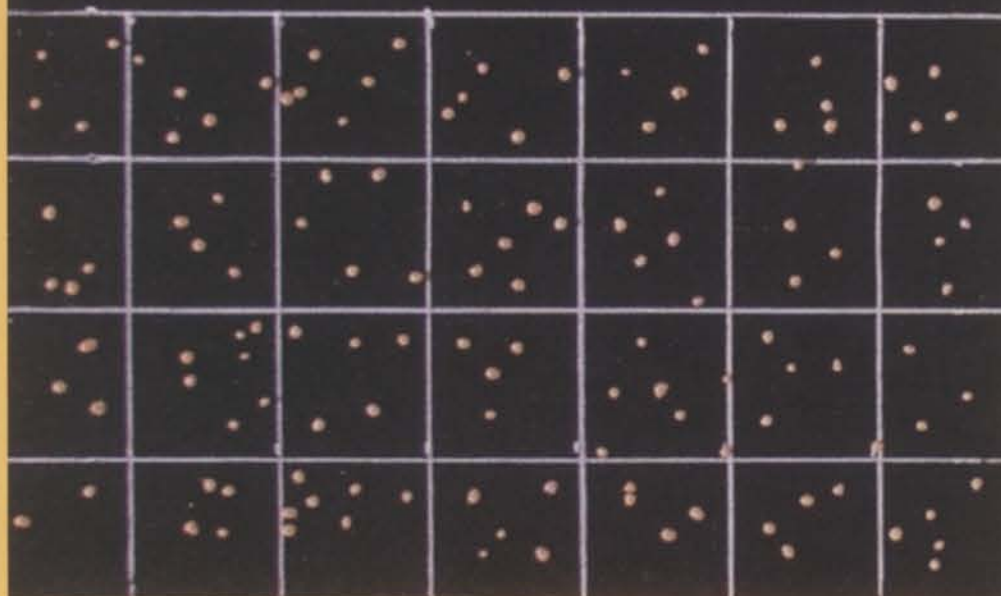
To apply as a contestant for "The Natural Golf Makeover Challenge," visit www.thegolfchannel.com or call 888/NAT-GOLF.

Association News

GCSAA Conference & Show a success

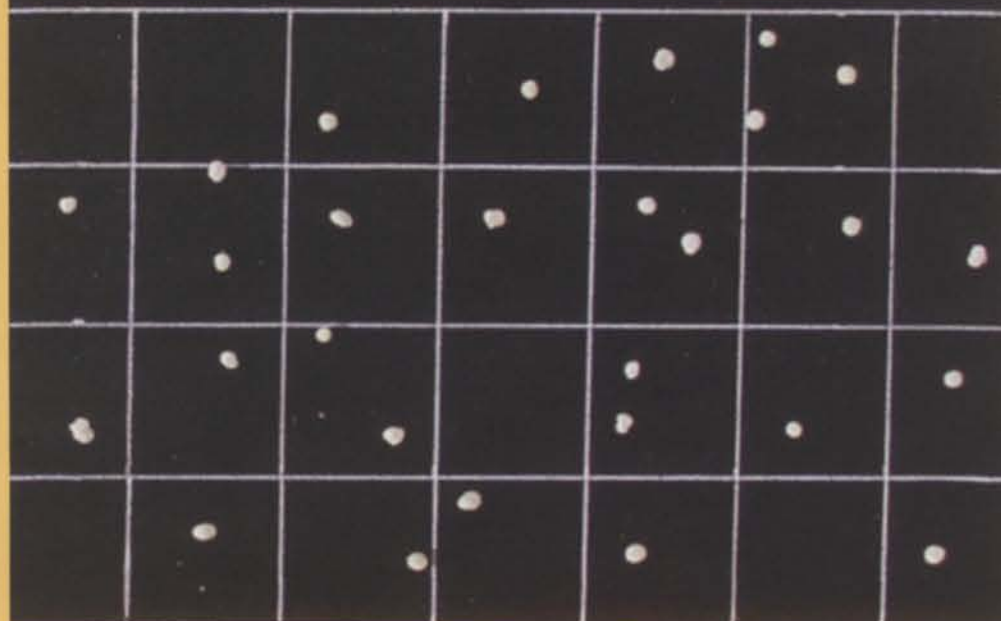
The International Golf Course Conference & Show held by the Golf Course Superintendents Association of America (GCSAA) was held Feb. 9 to 14, 2004, in San Diego, Calif., and boasted an increased attendance from the 2003 show.

Andersons 150 SGN 37-0-0 Poly-S @ 200 Lbs. Per Acre



(Gridlines are marked in one inch increments)

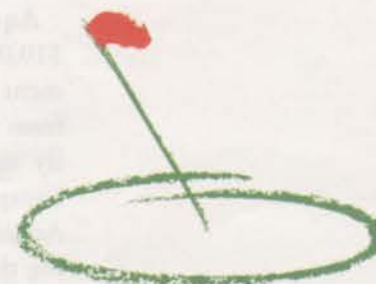
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The weeklong schedule of activities had 19,317 attendees overall, up from last year's total of 18,164. Approximately 6,200 attendees were qualified buyers or individuals who make purchasing decisions at a golf course, and 6,780 people attended the conference's educational seminars. Attendees also visited the 675 exhibitors on the trade show floor.

At the GCSAA annual meeting, members named their 2004 board of directors with the election of three officers and two directors from a field of seven candidates. Officers are: Mark Woodward, president; Timothy O'Neill, vice president; and Sean Hoolehan, secretary/treasurer. Directors are: Cary Carls and David Downing.

Next year, the International Golf Course Conference & Show will take on a new form, appearing as the Golf Industry Show. This will combine the trade shows hosted by GCSAA and the National Golf Course Owners Association (NGCOA). However, the associations will operate separate education seminars that will run concurrently with the trade show. The 2005 Golf Industry Show is scheduled Feb. 10 to 12 in Orlando, Fla. The GCSAA education conference will be held Feb. 7 to 12, and the NGCOA education conference will be held Feb. 8 to 12.

EIFG receives two industry donations

The Environmental Institute for Golf (EIFG) received two \$10,000 donations from industry suppliers during the Golf Course Superintendents Association of America (GCSAA) International Golf Course Conference & Show in February.

Aquatrols formally presented a \$10,000 check to the EIFG. The endowment fund was established with money from the corporation and various family members in 2000 to honor the company's founder Robert Moore. Aquatrols has committed to maintaining the contributions from sales of the company's turf management products.

"Establishment of a research endowment fund is a fitting way to give back to the industry and recognize the con-



Michael Jurdzan, Ph.D., vice chairman/treasurer for the Environmental Institute of Golf (center), accepts a check from Aquatrols. Making the presentation for Aquatrols are (left to right): Demie Moore, corporate director; Robert Moore, Sr., founder and president emeritus; Tracy Jarman, president; and Andy Moore, director of marketing and business development.

tributions made by Bob Moore and Aquatrols," says Tracy Jarman, president and chief executive officer of Aquatrols. "This is a way to contribute to the golf industry on a long-term basis." Grants will be made from the endowment fund by its board of trustees.

Also, Hunter Industries donated \$10,000 to the EIFG in support of the group's environmental stewardship and water management on the golf course. "The institute is a vital part of our industry's efforts to strengthen the compatibility of golf with the natural environment," says chief executive officer Richard Hunter. "We are privileged to be a partner with the Institute in this initiative."

"We are very appreciative of these companies' support of the Institute," says GCSAA Chief Executive Officer Steve Mona. "The advancements in course conditioning are made possible in part by the support and contributions we receive from our industry partners."

ITODA announces 2004 board

The Independent Turf & Ornamental Distributors Association (ITODA) named Chris Petersen president of the organization for 2004. Through ITODA, Petersen said he plans to continue to foster a trusted environment in which colleagues and vendors can share business concerns and viewpoints. "I want to help develop stronger business strategies through networking and education," he says. "I have found my membership in ITODA to be a most rewarding experience."

Other officers include Brian Feury, vice president; Chad Will, secretary/treasurer; and Don Naumann, past president. ITODA directors will be Wally Boilek,

Michael Fisher, Gary Grigg, Dan Henderson and Ned Herod.

Thomas Cousins will receive ASGCA Donald Ross Award

The 58th annual meeting of the American Society of Golf Course Architects (ASGCA) will take place April 23 to 28 at Hilton Head Island, S.C., where Thomas Cousins will receive the 2004 Donald Ross Award.

The society's most prestigious honor, the Donald Ross Award is presented annually to an individual who has made significant contributions to the game of golf and the profession of golf course architecture. Cousins, who spearheaded the renovation of East Lake Golf Club, Atlanta, Ga., and the rehabilitation of the surrounding neighborhood, is receiving the honor for both saving the historic club and for rebuilding the neighborhood, which was notorious for its crime and drug traffic.



Cousins

Since it reopened in 1995, the renovated golf course has attracted three PGA Tour Championships and the U.S. Amateur Championship. East Lake also recently was selected as the long-term site of the PGA Tour Championship. These tournaments generate hundreds of thousands of dollars annually for further neighborhood improvement, the East Lake Community Foundation founded by Cousins and his family, and efforts to encourage similar programs across the country.

NGCOA links up with weather insurance firm

The National Golf Course Owners Association (NGCOA) teamed up with Adverse Weather Insurance Group (AWIG) to provide a solution to the negative impact that severe weather has on a golf course's bottom line. AWIG has joined the NGCOA purchasing program as a preferred supplier and will provide NGCOA members with reduced premiums on its adverse weather insurance and income stabilization programs.

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"We are very pleased to partner with Adverse Weather Insurance Group to offer our members access to a program created specifically for the golf course industry to meet the needs of golf course owners and operators," says Mike Hughes, NGCOA executive director. "AWIG offers our members access to affordable adverse weather insurance, which is tailor-made to meet their specific operating requirements and to protect their profits."

The AWIG program provides a supplemental rain and/or snow insurance policy for golf course owners. In rainy or snowy conditions, insured courses receive reimbursement revenue based on parameters and coverage amounts defined by the course. Annually, severe weather costs businesses \$7 billion in revenue and a recent Golf 20/20 Industry Report found that weather is the No. 1 reason why courses experience an increase or decrease in rounds.

"We look forward to working closely

with the NGCOA and providing an affordable and effective solution to their membership and the golf industry," says John Peterson, managing partner for AWIG. "Our company's goal is simple: work as a partner with the golf course owners/operators to develop a comprehensive plan that is specific to their golf course, eliminate weather as a budgeting and operational concern, restore profitability to the operator and provide an affordable solution."

PTC establishes permanent research fund

The Pennsylvania Turfgrass Council (PTC) announced the establishment of an endowment fund to ensure a permanent source of funding for critical ongoing research.

The Pennsylvania Turfgrass Research Fund will yield annual income for Penn State University's Turfgrass Project, and will allow those who benefit most from top-

Pennsylvania Turfgrass Council

quality golf courses to contribute to continued improvement of golf courses everywhere.

To raise money for the fund, PTC initiated the "Growing the Game" campaign, creating awareness of the fund and the research it will support, and offering suggestions of ways to support the fund.

"We believe this endowment is a major step in ensuring that the world-class research being conducted at Penn State will not be interrupted because of lack of funds," says PTC President Jerred Golden. "The Growing the Game campaign will provide an important avenue to reach out to golf club superintendents and to individual golfers to help them understand the value of the research being done."

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In the past, PTC has contributed \$200,000 annually to the project from membership and educational activities fees. In 2003 alone, funding was available for Penn State to conduct 55 field research studies covering 623 weed control treatments, including more than 120 for broadleaf weed control.

Supplier News

Becker Underwood acquires Bio-Care Technology

Becker Underwood recently announced the acquisition of Bio-Care Technology Pty Limited of Australia. Bio-Care is a leading Australian biotechnology business with products including seed inoculants and bio-pesticides for use in agricultural and horticultural applications.

"The focus of our global and technological expansion is to provide customers with the latest in biotech products offering long-term environmentally beneficial solutions for crops," says Roger Underwood, CEO, Becker Underwood. "This acquisition is another step in our plan to lead with a global presence in each of our markets and provide local support to our customers worldwide."

Gary Bullard, founder and managing director of Bio-Care says, "Combining Bio-Care with Becker Underwood's global presence and vast research capabilities will benefit our new and existing customers with a much broader product line." Bullard will continue as managing director of Bio-Care.

LESCO launches new Web site

Golf course superintendents can now access LESCO product and technical information through the company's newly launched Web site: www.lesco.com.

"Revamping our Web site was long overdue and we're very excited about our new online presence, what it means for our customer and what it means for our business," says Michael DiMino, LESCO's president and chief executive officer. "This Web site, which we're calling LESCO Direct, greatly extends the level of service that

we can provide our customers by creating an information-packed online presence that gives our customers the information they need when they need it."

Key content areas in the new site include:

- Special LESCO sales promotions
- A full LESCO product catalog
- Agronomic information
- Product labels and MSDS sheets
- A locator for LESCO Service Centers and Stores-on-Wheels
- Investor information
- Career opportunities within LESCO

"With our new LESCO.com, we are able to provide nearly all of the information our customers regularly request from us," adds Brett Barthel, LESCO's vice president of marketing. "By enabling our customers to monitor their account, gather product information and seek technical assistance through this user-friendly Web site, we are giving them more opportunities to focus on creative solutions that will help them build their businesses."

DiMino adds that LESCO is currently developing additional features that will be added to the Web site in the future.

Bayer announces Merit sweepstakes

To celebrate the 10-year anniversary of Merit insecticide's EPA registration, Bayer Environmental Science launched a sweepstakes for golf course superintendents, lawn care operators and arborists. The contest, which began in February 2004, allows Merit customers to enter to win prizes including professional equipment, gift certificates, electronics and more. The three grand prizes are a \$10,000 Lowe's gift card, a four-year lease on a Ford F-150 and a trip for four to the Richard Petty Driving Experience in Las Vegas.

"Since its registration on March 18, 1994, Merit has helped industry professionals control white grubs, which are one of the most damaging and pervasive turf pests," says Dr. Mike Ruizzo, business manager, CNIs, Bayer Environmental Science. "This sweepstakes is one way we are celebrating this important milestone and saying thank you to our customers for their continued support."

Industry professionals are automatically entered in the sweepstakes drawing via Merit purchases or mail-in entries. "Instant winner" prize cards can be found on all Merit packages and must be redeemed online at www.merit-10-year.com. Entries will be accepted through June 2004. Win-

ners will be announced in the fall.

TifEagle to hold discussion group

An informal discussion group regarding TifEagle Bermudagrass will be held after the Southeastern Turfgrass Conference at the Rural Development Center, Tifton, Ga., on May 4 from 3 to 6 p.m. Golf course superintendents who work with TifEagle Bermudagrass are invited to attend the discussion, which will focus on managing TifEagle greens. More information about the southeast Turfgrass Conference is available on the Internet at www.ugatiftonconference.org.

Deere One Source exclusive supplier of BlueYellow

John Deere Golf & Turf One Source and its distributor network will be the exclusive distributor of BlueYellow, a new engineered turf system from Georgia-Pacific, to the golf market in the United States and Canada.

"Our One Source program represents strategic partnerships with many of the industry's most respected suppliers in the seed, fertilizer, irrigation and drainage fields," says Gregg Breningmeyer, director of sales and marketing for John Deere Golf & Turf One Source. "We are pleased to add BlueYellow engineered turf system to the One Source partnership. We believe BlueYellow is an important new technology for golf course construction and renovation."

Marsha Seekins, vice president of sales for BlueYellow, says, "We are excited about being named as a certified supplier to John Deere's new One Source program. Our engineered turf system complements the existing One Source offerings to the golf and turf industry and, together, we will provide outstanding quality and value to a very discriminating market."

BlueYellow combines a cellulose-based substrate with a calibrated distribution of high-quality grass seed and fertilizer in the form of a lightweight, 100-percent biodegradable roll. This can be custom manufactured with any variety of commercially available seed and fertilizer for a prescription turf for new construction and renovation projects.

Precision Laboratories forms PlantScience

Richard Wohlner, president, Precision Laboratories, Waukegan, Ill., announced the formation of Plant Science, a company that is offering new plant nutrition technology for the golf course, specialty turf, sports field and lawn and landscape markets.

Plant Science will be offering Nature's Time and Tru-prill fertilizer products in various formulations. The company is based in Barrie, Ontario, Canada, and is led by President Robert Field, a turf industry veteran who most recently served as the director of sales and marketing for NuGro Corp. Vice President Steven Hewgill has more than 15 years of experience in turf and was formerly the national sales manager for NuGro Corp.

Precision Laboratories is the exclusive marketer of the Plant Science fertilizer product line in the United States. More information on Plant Science can be obtained at www.precisionlab.com.

Riverdale becomes Nufarm Turf & Specialty

The Riverdale Chemical Co., officially changed its name to Nufarm Turf & Specialty, a division of Nufarm Americas. The name change was introduced first at the 2004 Golf Course Superintendents Association International Golf Course Conference & Show in February.

Riverdale was purchased by Australia-based Nufarm Limited in 1999 and, coupled with the creation of a highly successful agriculture division, Nufarm Americas was born. The recent evolution from Riverdale to Nufarm Turf & Specialty was one of many steps toward streamlining Nufarm's North American business. The aim is to unify the company and increase efficiency while providing customers with the personalized service they have come to expect from Riverdale. The Riverdale name will continue to serve as a brand strategy on existing product lines.

With a number of new product launches expected in the coming months, Nufarm Turf & Specialty is poised to continue Nufarm Americas' growing presence in the U.S. market. The company will continue to serve the golf course, lawn and land-

scape and various industrial vegetation management segments with an array of post and pre-emergent herbicides, fungicides and specialty chemicals.

Wilson Golf donates to The First Tee

In celebration of its 90th anniversary, Wilson Golf announced a partnership with The First Tee. The company will donate \$90 for every birdie made by Wilson staff member Jesper Parnevik on the 2004 PGA Tour. Additionally, Wilson will donate a set of equipment as used by Parnevik, a signed Jesper Parnevik bag, hat, glove and balls, as well as a round of golf with Parnevik at one of the country's premiere courses, to be auctioned on eBay at The First Tee Charity Auction Store.

Also, Wilson will offer an internship for this summer and next to a qualified participant from one of The First Tee's Chicago-area chapters, where Wilson is located.

"The First Tee has made great strides bringing golf to youngsters across America, ultimately improving the strength of the sport," says Angus Moir, Wilson Golf's global business director. "There are so many children today that do not even have the chance to learn to play golf, and The First Tee is all about giving kids that opportunity. We are proud to help them in any way we can."

Club Car named NGCOA Canada supplier

Club Car has been named the exclusive golf car supplier and a Platinum Partner of the National Golf Course Owners Association (NGCOA) Canada. Club Car has been the Exclusive Premier Partner of the NGCOA in the United States for the past three years.

"Club Car is delighted to join the NGCOA Canada in its support of golf course owners and operators and the growth of the game throughout Canada," says David Hamilton, vice president of golf Americas for Club Car.

In addition to golf cars, utility and hospitality vehicles, Club Car also offers mobile merchandising, GPS-based distance measurement, communications and course management systems and equipment fi-

nancing solutions through its association with allied companies that are part of the Club Car Solutions Network.

"The National Golf Course Owners Association Canada is very excited to be partnered with Club Car," says Jeff Calderwood, executive director, NGCOA Canada. "Not only is Club Car a market leader, which will benefit our member golf course operators, but its commitment to the overall goal of the NGCOA Canada provides a total solutions relationship for years to come."

Course News

Top junior golfers compete at Longbow

The nation's top junior golfers will compete in the Heather Farr Classic April 9 to 11 at Longbow Golf Club, Mesa, Ariz. This will be the first of four prestigious locally held junior golf tournaments hosted by the American Junior Golf Association (AJGA) this season. The 36-hole event features 120 boys and girls between the ages of 12 and 18 who will make up one of the strongest fields on the AJGA slate.

The completely redesigned par-71, 7,300-yard Longbow Golf Club will be a solid test for participants, though AJGA members have shown great potential in the past. Some former members include Cristie Kerr, Davis Love III, Phil Mickelson, Dottie Pepper and Tiger Woods.

The tournament is named for Heather Farr, an outstanding All-American golfer at Arizona State University, who lost her four-and-a-half-year battle with breast cancer in 1993. "Heather Farr is an ideal role model for our juniors," says Peter Ripa, AJGA chief operations officer. "Her ability as a golfer, coupled with the integrity and perseverance that she displayed under the most difficult of circumstances is a great inspiration."

Columbia Edgewater goes high-tech

The Columbia Edgewater Country Club, Portland, Ore., added to its list of amenities with the installation of the Guest Wireless Internet Service by Matrix Networks. Visited since 1974 by the

LPGA, the Columbia Edgewater Country Club is the first club in Oregon to offer complimentary Wi-Fi services to its members and guests.

The new service provides the ability for club members and guests to conduct online research, check e-mail, log onto corporate LANs or surf the Web with their laptops or PDAs while dining at either of the country club's two restaurants, sitting at the bar or gathering in a meeting space. The service is currently available to members and guests at no cost.

Plantation Course upgrades irrigation controls

The Plantation Course at Kapalua in Maui, Hawaii, successfully implemented the replacement of an existing irrigation system to a new, all digital irrigation control system from Signature Control Systems just eight weeks prior to the start of the PGA Tour Mercedes Championship.

When asked about installing an upgrade this close to the event, superintendent Craig Trenholme says, "We wanted to be able to increase our level of water control for the tournament. This system offered advanced communication technology that helped us achieve just that."

Trenholme and his crew took two weeks to replace 21 control satellites with the new system, which has true two-way communication, no FCC licensing requirement, split-second run time capability and simple upgradability. "The ability for the satellites to communicate to each other, not just from the central out to the field, was very important to me, particularly for daily maintenance," Trenholme says. "There's an instant response from the handheld radio due to the digital nature of the system."

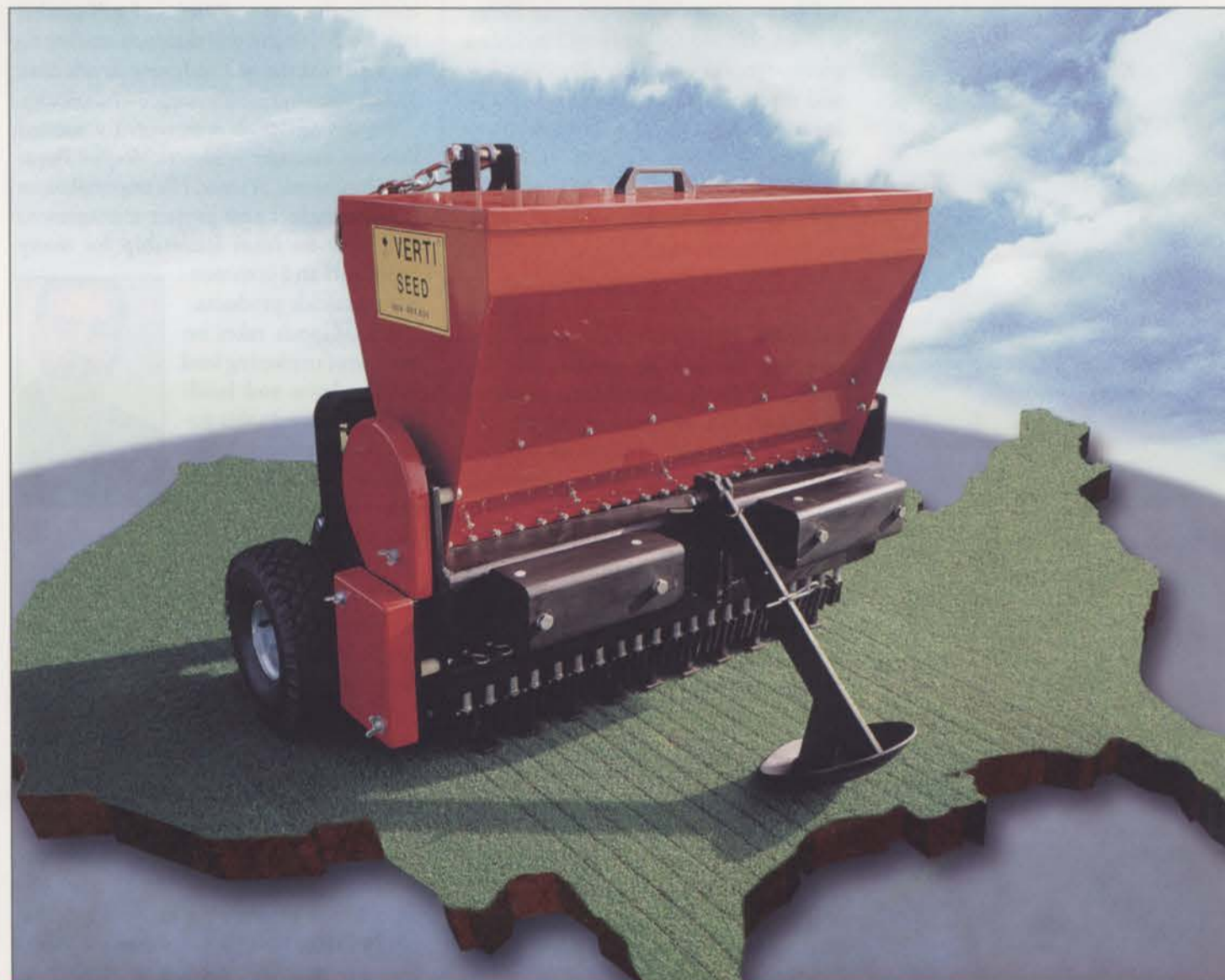
Sweetwater in phase two of renovation

Sweetwater Country Club, Houston, Texas, is moving forward with phase two of the course's \$2-million renovation. The first phase, which cost \$1.25 million, was largely completed by December 2003 and included:

- A greens renovation on the Cypress course, former home of the LPGA. The greens were updated to an ultra-dwarf Champion Bermudagrass to provide more consistency for year-round putting speed and quality.

- The addition of new tee amenity packages on the Cypress and Pecan courses, including new hole markers, shoe cleaners and water coolers

- A complete update of golf course restrooms, tunnels and cart paths



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- New landscaping to enhance the front entrance to the club
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- A facelift of the ladies' locker room
- The addition of new golf course maintenance equipment

A complete renovation of the men's locker room and men's card room also will be completed with phase one. Renovations planned for 2004 will include a greens renovation of the Pecan course and transformation of the formal dining room into a trendier, contemporary atmosphere. These renovations will be completed by the end of 2004 and will cost approximately \$800,000.

Personnel News

Edward Hodnett was named vice president of business development for Advanced Aer Systems. Hodnett joined Advanced Aer in October 2003 as director of agronomy – West and was previously a consulting agronomist with Golfturf/Nicklaus Design.

"Ed's deep knowledge of turf agronomy, his extensive golf course management experience and his understanding of the golf industry makes him the perfect person for this position," comments Walter Norley, president of Advanced Aer Systems. In his new position, Hodnett will expand the golf course industry's awareness and understanding of Advanced Aer's product and service offerings and will forge strategic partnerships with golf course development, design, construction and management companies.

To better serve the differing needs of green industry customers, Bayer Environmental Science announced an expansion and repositioning of existing sales and marketing resources within Chipco Professional Products.

"Our greatest asset is our people," said Dan Carrothers, vice president, Chipco Professional Products. "By concentrating on specific markets, our sales representatives will magnify their ability to listen to our customers and address turf and ornamental opportunities and issues."

The recent creation of a national lawn care/landscape and grounds maintenance region with a dedicated sales manager and sales representatives will allow current sales regions to specialize on golf course customers in their areas. Additionally, business managers in the Bayer home office were assigned as market leads for either the golf or lawn and landscape industries.

As a result of the changes, **Brian Tepper**, former manager of Bayer's Global Termite Portfolio, was recently named western regional sales manager. **Jim Davis** migrated to northern sales manager for the golf division from his previous position as southern region sales manager, which now belongs to **Dave Ravel**. Also, **Eric Kalasz** took on the responsibilities of golf market lead for Bayer and will direct all marketing activities for the golf industry, in addition to his role as business manager – fungicides.

Bryan Gooch was recently named business manager – insecticides for Bayer Environmental Science. His responsibilities include product and project management and business team leadership for many Bayer turf and ornamental insecticide products.

Also, Gooch takes on the role of marketing lead for the lawn and landscape industry. In this position, he supports the recently announced customer focus initiative and the dedicated lawn and landscape region.

"Bryan brings solid experience in sales and marketing to his new position," says Jim Fetter, director of marketing for Chipco Professional Products. "His experience in the southern market gives him an excellent familiarity with the fire ant problem, which is a major opportunity for Chipco TopChoice."

Personnel changes at LESCO have strengthened the company's marketing department. In addition to hiring **Bob West** as director of marketing, several other additions were made to the marketing team. **Chris Paczak** is category director, combination and control products; **Dave Woznicki** became product manager, combination and control products; **Tom Newbould** is merchandising manager; **Adam Shaw** is product analyst, equipment; and **Jeanne Hui** became product analyst, fertilizer and seed.

"The LESCO name is obviously one of the best-known names in the turf care industry and for good reason," notes Michael DiMino, LESCO president and chief executive officer. "These recent moves are indicative of the company's increasing commitment to communicating the value of the LESCO experience to our current and new customers alike."

Ken Gordon, former member of the United States Golf Association (USGA) Executive Committee passed away in February at age 87. Gordon spent nearly 20 years serving the boards of the Metropolitan Golf

Association and the USGA. From 1968 to 1975, he served on the USGA's Executive Committee, including two years as secretary. During that time, he chaired the Museum Committee and helped lay the groundwork for the association's move from New York City to Far Hills, N.J.

At Club Car, **David Rowles** was appointed to the newly-created position of vice president of worldwide sales. He will be responsible for golf and utility vehicle sales, national accounts, aftermarket sales and advertising and promotions.

Rowles was previously vice president of sales and marketing Asia Pacific/Latin America for Ingersoll-Rand's infrastructure sector and has more than 25 years of experience with Ingersoll-Rand, the parent company of Club Car.

Simplot Partners named two sales representatives for the southwestern United States. **Craig Hanson** will work in the South-Central California market and be responsible for the distribution of fertilizer, turfgrass seed and chemical products. Hanson is a Class A member of the Golf Course Superintendents Association of America and was the regional superintendent for Arnold Palmer Golf Management, based at Taquitz Creek Country Club in Palm Springs, Calif.

Brad Geisler will work in the Arizona market distributing fertilizer, turfgrass seed and chemical products to golf course superintendents, landscape contractors, nurseries, municipalities and athletic field managers. Geisler is one of the founders of Garden West, where he was the technical sales representative. Since 2000 he has been an independent representative focused on golf courses.

At Otterbine Barebo, **Rich Daly** became the new Midwest regional sales manager. With over 20 years of experience in sales, specification and design in the turf and water quality management industry, Daly will be responsible for the sales and support of Otterbine's distribution network in the newly defined Midwest region.

"As a member to Otterbine's manufacturing council and distributor advisory board for three years, Rich has been an integral part of Otterbine's growth even prior to joining us," says Carla Ott, vice president of sales and marketing. "Daly's vast experience and knowledge of Otterbine product specifications, customizations and troubleshooting along with his insightfulness into our target markets, makes him an invaluable addition to the Otterbine team." GCN



Gooch



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Golfers poll: 2004 looks like a rebounding year

Golfers surveyed in a recent National Golf Foundation (NGF) poll indicate that 2004 may be a rebounding year for the golf industry.

For its "Outlook on Play Frequency" report, the NGF surveyed 350 golfers in December. Across-the-board the respondents predicted they would play more rounds of golf this year than in 2003.

The most rounds in 2004 are expected

to come from players who are 60 years old or older and have played for 30 years or more; players who score 85 or less; and private-club members. However, the highest percentage increase is surprisingly expected from less skilled, less experienced and less frequent players. NGF's message to courses – pick one or more target groups of these golfers and vigorously pursue them.

Respondents were labeled as "best cus-

tomers" if they played 25 rounds or more per year, or have household golf-related annual spending of \$1,000. "Avid golfers" are those who averaged 52 rounds in 2003. As a group, avid golfers predicted they would play an average of 61 rounds this year. The report cautioned, "They may have been overzealous ... nevertheless, it's a positive outlook."

While taking a pulse on player intentions, the survey also identified ways to help golf course operators better market their facilities, including the following

- Younger people in the "avid golfers" group especially anticipated more rounds in 2004. So, to increase rounds, target younger high-handicappers.

- Many in the "best customers" group would prefer to play with family more than friends, but currently do not do so. The suggested solution: Create family-play programs.

- The top three things golfers like most about playing golf are challenge, outdoors/nature and its social aspect. Tip: Use these ideas in advertising and promotional materials for products and facilities.

- The top three things golfers dislike most about playing golf are slow play, playing poorly and poor etiquette by others. Tip: Begin to fight slow play and let golfers know you are doing so; invite golfers to take lessons; and educate golfers in etiquette through rangers, signage and group lessons.

- Better course condition is the primary factor that would get the best customers to visit their local course more frequently. Tip: Really need a tip?

Meanwhile, the NGF also asked golfers who played less than they wanted to in 2003, how many times they expect to play this year. This group encompassed 65 percent of the best customers, representing 5.8 million golfers nationally. If their hopes come true, it would mean an average increase of 12.9 rounds, which translates into an additional 74 million rounds.

The NGF stated: "If even half of these rounds were realized, the golf industry could regain many of the rounds 'lost' between 2001 and 2003." GCN

HOW MANY ROUNDS DID YOU PLAY IN 2003?
HOW MANY ROUNDS DO YOU WISH YOU COULD HAVE PLAYED IN 2003?
HOW MANY ROUNDS DO YOU EXPECT TO PLAY IN 2004?

(AMONG THOSE WHO SAID THEY PLAYED LESS THAN THEY WANTED TO IN 2003)

		2003 average rounds actual	2003 average rounds wish	2004 average rounds expected
Total		39.8	84.1	52.7
Age	18-49	37.8	85.0	48.0
	50-59	38.8	74.0	52.4
	60+	47.0	97.5	65.1
Average score	<85	53.6	107.5	69.8
	85-90	39.1	84.8	52.9
	>90	27.2	58.1	37.7
Years played	<15	37.8	82.9	51.4
	15-29	38.1	79.9	49.4
	30+	44.2	89.6	59.1
Rounds last 12 mos.	<30	16.1	45.1	26.9
	30-59	38.6	84.7	51.4
	60+	86.0	160.6	102.7
Household income	<\$75	35.4	82.9	51.2
	\$75-\$99	45.2	79.0	54.9
	\$100+	38.4	87.1	53.0
Private club member	Yes	47.3	83.0	69.6
	No	38.0	83.6	49.4

How to read this table: Private club members surveyed played 47.3 rounds in 2003, wish they could have played 83.0 rounds and realistically expect to play 69.6 rounds in 2004.

There are times when bigger is better.



Riverdale has grown into Nufarm Turf and Specialty

As Nufarm Turf and Specialty, we're a global enterprise that draws on the resources of 13 Nufarm locations – worldwide. Over 2,500 Nufarm employees formulate and distribute turf and crop protection chemicals in more than 100 countries. So, we have an expanded ability to keep weeds, pests and disease under control all year long. And you can still depend upon familiar products like Millennium Ultra, Manor, Corsair and Magellan to keep your weeds down and your greens free of pythium.

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H O M E O F R I V E R D A L E B R A N D S



Jack Brennan founded Paladin Golf Marketing, Plant City, Fla., in 1989 to help golf course owners and managers market their courses more effectively. He can be reached at jackbrennan@ij.net.

Improve your brand

What's your favorite car? Soft drink? Golf clubs?

Whatever came to mind as you considered these questions is not there by accident. Part of your response depends upon your personal likes and dislikes, the opinions of others similar to you and your experience. Part of your response was put there by marketing folks who invested a lot of time and money to get to know you and your wants, before crafting their products, packaging, pricing and advertising messages to help you make your decision about your favorite brands.

Branding is something the major companies all do, but what about branding for the golf course?

The answer to that question is that some golf courses are brands among golf enthusiasts just like major branded consumer products. Pebble Beach, Cypress Point and Augusta National are brands that golfers and even many non-golfers recognize. Now, while your club might not have attained a national public brand status, nonetheless, it does have a brand. The reason I can say that is something fundamental to a brand – it is often measured as “share of mind.” For example, Coke or Pepsi could be your favorite soft drink, or some other brand, but something pops up on your mind when asked, “What's your favorite soft drink?” No, the answer can't be Budweiser!

Marketers measure this share of mind to see where they stand in comparison to the competition, to measure if they are making progress, and even to determine who out there makes up their best customers.

So, back to your course. When your course's name is mentioned, peoples' responses can either be that they have never heard of it, or they have some opinion about it – expensive, can't get in, excellent course, great third hole, or whatever. Their opinion might be limited to just driving by it everyday, but that means they are aware of it and probably have some kind of opinion, too. They might like the fact that it looks like a park. Or, that they always have to wait for carts to cross. Or, that they wonder what it would be like to play it.

Now, what all this has to do with the superintendent is that you, more than anyone else, are in a position to shape your course's brand among golfers and potential golfers. Marketing is not theoretical. It's intensely related to what you and your crews

do every day. One of the objectives I have in working with superintendents as a consultant is to show them how their work impacts the course's marketing efforts.

Golfers pay the bills, so anything that affects their experience in a positive way contributes to the marketing program and ultimately to the financial success of the course. What I try to stress to superintendents is the golfer's experience, since that ultimately shapes their brand perception.

Following are five areas where the superintendent can improve the perception of his or her course. These ideas work on public or private courses:

1. Landscaping around the clubhouse. The clubhouse is the first thing the golfer sees. It's the curb appeal of the course, but often it is poorly landscaped. Some superintendents don't want to take responsibility for anything beyond the greens, fairways and tees. They don't see landscaping around the clubhouse as their responsibility. But who is more qualified to improve and maintain the landscaping than the superintendent?

2. Attention to details. Anything that golfers will come into contact with needs special attention. Not all golfers will notice a little *poa annua* in the roughs, but they will notice the condition of the golf cart paths, signs, overflowing trash bins and

about the hole or green they're on. Most golfers would love to meet the superintendent in person, and when they do they will tell other golfers about it the rest of the day. Be sure to ask them questions and probe any answers that involve likes or dislikes.

4. The condition of the maintenance buildings. It's a rare golf course that has maintenance buildings that look nicely maintained, yet what a great impression professional-looking buildings make.

5. Communicate maintenance and problems proactively. You know and understand what you are doing on the course and why, but do your golfers? Do they understand your technical terminology? Do they have any concept of why you have to overseed or aerate? Communicating what you are doing can be critical to the experience of golfers. I knew of one superintendent who damaged his greens one year with a pre-emergence application. He put signs up near the practice greens explaining the nature of the problem, what he was doing and that the greens would fully recover. He updated the signs and used photos to show progress. Golfers on the course commented how much they liked to be informed of what was going on. If something goes wrong don't try to hide it. People are curious creatures. Tell them what's happening to the course.

'Marketing is not theoretical. It's intensely related to what you and your crews do every day. One of the objectives I have in working with superintendents as a consultant is showing them how their work impacts the course's marketing efforts.'

empty water coolers – nothing says “we care about you” like cold water on a hot day. Superintendents and assistant superintendents should visit their own course to experience it as a golfer would, and pay special attention to the details. Start by parking in the parking lot. Then visit the clubhouse and pro shop. Then play the course. Better still, invite some superintendent friends to come play and tell you what they think of the course from a player's perspective, and also as a professional superintendent.

3. Greeting golfers. Go out on the course and greet two or three foursomes and talk

If you do they're likely to overlook problems when they encounter them as opposed to complaining among themselves about the poor conditions.

Now, the superintendent is not solely responsible for the brand perception of the course. The pro shop, golf instructors, quality of food in the clubhouse and even the parking lot condition all impact a golfer's total experience. For this reason, all managers and employees need to see the role they play in building a successful brand. GCN

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The master plan and consensus

Recently a caller began a conversation by saying, "I'm on the green committee at my country club, and I represent a small faction of members who..." I soon wished the call had come from "60 Minutes" or the IRS!

The caller, having just rotated onto the committee, was trying to get up to speed on a renovation plan that was well along in the process. He wanted to know whether spending \$3 million on the architect's proposal, which included some re-routing for length, was "right for their course," and whether they should bring in another architect for a "second opinion."

His timing was wrong. At best his questions would disrupt or delay the process. At worst, he would set up a daring ambush for the voting meeting, the likes of which have not been seen since Bonnie and Clyde!

I told him that the master plan is not the pretty picture you see on the clubhouse wall. It's really the collaborative process that develops that picture. While there is no one right way to approach renovation, in terms of style, there is a right way to complete the master plan process. Each club must achieve a consensus, and club leadership must unite behind that consensus.

Obviously, that can be difficult! Just as obviously, this member was working outside the consensus process. However well intentioned, no matter how "right" he feels he is on either the cost or the direction of the design proposals, this member's actions can't benefit his club.

I've seen this happen. Whether due to a member who simply likes to create havoc, clashing personalities, or payback for old disputes, it's called "club politics." The good news is most of these situations arise because members truly love their courses and agree it would be terrible to make a major renovation mistake. The bad news is that, like the Democrats and Republicans on the national political scene, that's about all they agree on! Politicians have divergent views about what's "good for America" as do members about "what's best for the club."

Everyone at the club has their own unique perspective.

Some members may want a restoration of their fine old course. Others want a new look. Older members fear losing playing time with course closure for renovations,

and fear the new course will be too difficult. Younger members want a tougher course.

In the current economy, many members are struggling just to pay current dues, much less any new assessments. These members may question golf course renovation costs, perhaps cloaking their true motives behind other issues. Others simply prefer to put off costs until the need is pressing – usually when disaster strikes in the form of major course loss or damage.

The club manager is probably looking further ahead, hoping to make the course as attractive to new members as it is to existing ones. The superintendent wants changes that allow him or her to maintain the course to everyone's high – and ever-rising – standards, knowing that budgets will always be tighter than desired.

While all are valid perspectives, they lead to conflicting goals. Any green committee larger than one benevolent dictator will have lingering differences, and several "pet issues" to resolve. It's best if a few well-respected members agree to be "flag bearers" for the master plan. They need the leadership capabilities to make good decisions. They need the people skills to overcome inevitable objections. And they need sales skills to gain approval for the plan, which means demonstrating some tangible benefits of the proposed plan for nearly everyone.

An experienced architect helps make the right decisions and communicates them, based on analysis of your course needs, and what you can afford to spend. I've recently completed renovations from \$350,000 to over \$3 million. Each was the right solution for that particular course, so don't be surprised if costs come in higher – or lower – than you expected. Be open to the proposals of the architect you entrust with your course and never assume your project should be like the one down the street.

It's great when members have strong interests in their courses. Healthy and timely debate is part of the master plan consensus process. However, overly strong, untimely or uninformed opinions and input that override a well thought-out process can torpedo the best plans for no reason. Remind those who disagree strongly during these debates that golf course remodeling is not a life and death matter.

It's also wrong for this member to imply that a reputable architect is selling changes to make more money. Unsuitable and/or overpriced projects eventually diminish business for architects, as word travels. It's a great incentive to keep things realistic.

My caller ignored the fact that their architect had already developed several design proposals, based on all available information and perspectives, using his "disinterested opinion" on matters that may be emotional for members. He has probably answered objections, quantified benefits, and assisted the green committee in selecting the most favorable plans. In short, one architect is usually capable of looking at the project in many different ways, negating the need for a second opinion.

A second architect would be under pressure to offer differing opinions. Even if his or her ideas fit the small faction's tastes, would they be representative of the club as a whole? Would they be better? Would there be consensus? Changing architects mid-stream achieves a new start, not a quick or suitable conclusion.

Some clubs do go through a series of architects, often for the wrong reasons, and usually for the wrong results. It is a mistake to interview architects until they find the one who'll tell them what they want to hear regarding cost or direction.

Some green committees legitimately learn as they go. They come out of their first master plan united only in the opinion that they "need a mulligan" by virtue of knowledge gained in the process. And, there are "horses for courses," meaning that an architect may unfortunately prove less experienced or philosophically different than the needs of your project demand. If so, they should tell the architect that his or her skill set is not what they need, and find one that better suits them.

Ideally, your club will pick the best architect initially and stick with them throughout the project for continuity. If you go through the proper process of selecting your architect, developing and communicating your master plan, and getting it approved, the result is confidence that you have probably done the right thing. There also will be fewer membership challenges. More importantly, you'll have greater chances of success. GCN

Relocating GCSAA

GCSAA has debated the relocation of its headquarters from Lawrence, Kan., since the late 1970s. Talk to executives who have faced the challenge and responsibility of relocating any organization's headquarters, as I have, and you will be told that this is one of the more harrowing tasks within the world of business management.

GCSAA is once more considering relocating, and having learned from the past, the present association leadership is patiently putting a workable plan in place for membership consideration.

The keys are the plan and communication. Relocation initiatives do not fail because of weak planning. Rather, they fail to adequately communicate solid planning throughout the organization.

This has been the case in past GCSAA relocation efforts. With today's Internet technology we can expect that no relocation vote will be taken unless and until the membership has been fully informed.

GCSAA has planned well in the past when looking to relocate its headquarters. For example, it has identified the following 10 criteria to evaluate candidate cities/regions against:

1. Serving as a major tourist attraction to help to draw GCSAA members and golf community families year-round.
2. Being located at a natural intercept point within a busy city-to-city corridor.
3. Serving as a major hub airport.
4. Qualifying to host the GCSAA trade show on a regular basis.
5. Able to attract and hold the highest caliber of career-minded employees.
6. Offering a reasonable cost of living for the association and its staff.
7. Having a comfortable year-round climate for golfing and other recreation.
8. Serving as a vacation "winter haven" or a retirement community opportunity for members.
9. Allowing GCSAA to affiliate with an established educational institution.
10. Allowing GCSAA to affiliate with a respected 18-hole regulation golf course.

When the above criteria have been applied to the leading candidate cities across the country, both in the early 1980s, and again recently, the following consistent matrix results were produced: Orlando had a 95% criteria compliance; San Diego 81%; San Francisco 65%; Los Angeles 62%; Washington, D.C. 59%; Dallas 59%; Jack-

sonville 59%; Denver 51%; Chicago 51%; Phoenix 49%; and Lawrence 30%.

Orlando is the most effective target city for relocation. Conversely, remaining in Lawrence would be a serious mistake because this location has substantively stymied the growth of GCSAA and the profession for more than 30 years.

The present GCSAA leadership is aware of these earlier findings as it continues to look into the relocation issue today. Will this leadership once again confirm Orlando as the primary target city? Only time will tell. Where ever this decision takes GCSAA, it can fairly be assumed that the board of directors will be on top of it.

What does relocation matter to the average GCSAA member or potential member?

A look at the advantages of Orlando shows the city's potential to act as a powerful magnet capable of attracting high volumes of members and golf industry officials to GCSAA headquarters on an annual basis. For example, the tri-annual appearance of the GCSAA trade show in Orlando would be expected to bring up to 30 percent of the association membership to the city. The presence of Disney World also would attract many hundreds of GCSAA member families to the city annually. Finally, the city's prime location within the busy Boston-to-Miami corridor would allow thousands of East Coast private club and public golf course officials to comfortably stop by Orlando during business or family vacation trips. Many others from across the country will fly directly to Orlando for the sole purpose of participating in GCSAA headquarters programming.

There is a further advantage. The collective potential impact of this volume of GCSAA members and golf industry people converging on Orlando each year creates a significant educational opportunity that the golf industry has not seen before and may never realize otherwise.

The inherent problem with past and present GCSAA educational programming is that it is one-dimensional; i.e., solid within the agronomic and turf management fields, but virtually vacant relative to member career planning; establishing professional communications and management standards for chapters; and briefing green committee members and public golf course officials regarding the operational world of the golf course superintendent.

GCSAA relocating to Orlando would

address this problem by serving as a springboard to launch much needed multi-day certification and workshop level programming at the association's headquarters, leading to Internet and formal college curricula. A relocated GCSAA Learning Center would foster greater member and industry-wide participation in educational programming that would include:

- A workshop for private club green committee members (with a parallel workshop for public golf course officials) that would include presentations on job descriptions for a green committee chairman and for the golf course superintendent; maintenance program budgeting; equipment rotation/scheduling; legal and safety issues; golf course renovation planning; and an introductory agronomic course to educate lay committee members so that they would be better able to support the work of the golf course superintendent.

- A workshop to upgrade the management and public relations capabilities of the more than 100 chapters across the country. This is needed because GCSAA chapters will always be the frontline interface between the game's many players, officials and institutions that will continue to predominantly define the image of the golf course superintendent profession.

This program would focus on a job description for and the methodology for engaging and funding a chapter executive director, and counseling newsletter editors to ensure that more vital, diversified and entertaining publications will be produced and circulated within their respective local golf communities.

- A workshop to expand upon the career planning seminars recently presented at the San Diego conference.

Relocating GCSAA headquarters to Orlando would afford it a unique opportunity to both serve its members more effectively and to develop an industry-impacting educational program that would generate immense pride within the profession. An Orlando headquarters would allow GCSAA to strengthen its leadership position within the industry and create the educational capital of golf. The day would soon come where no self-respecting green committee chairman would accept his/her assignment without first having participated in a GCSAA workshop on the subject.

Orlando is a GCSAA party waiting to happen. GCN



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Today's to do list: Meet with the crews, price out an engine rebuild, finish the drainage project, meet with the chair of the green committee, run the kids to soccer practice and attend the quarterly club-planning meeting.

Sound familiar?

For most superintendents life means getting pushed in as many directions as a high-handicapper's tee shots. But it doesn't have to be that way, says Bruce Williams, CGCS, superintendent, Los Angeles Country Club. By taking a hard look at how you use your time, and taking better control of the time available, superintendents can find the hours needed to get more work done, play golf, spend more time with family and get more than five hours of sleep per night. Williams says carefully managing time can yield eight to 10 extra hours each week.

Step One: Analyze

"You can't analyze how to save time or manage time, until you analyze how you are currently spending time," Williams says. The solution is to begin keeping a daily time log of how you spend your time for a few weeks. After the information is re-

corded, analyze the way you spend your time using three tests to critically review all the tasks you complete

1. Necessity: Is this activity necessary?
2. Appropriateness: Who should be performing this task?
3. Efficiency: Is there a better way to complete this work?

Once you have critically evaluated all the ways you spend time during a given day, you should find ways to eliminate the low-priority tasks by finding someone else to take on some of your responsibilities, then be more efficient at the tasks you must handle.

Williams encourages superintendents to take a hard look at the forms and meetings that can suck time out of a day. For instance, are their forms you are completing that just get filed away and are unnecessary? If so, stop using them.

"Sometimes it is irrelevant for me to be in a meeting. For instance, our catering department reviews all food and beverage activities for the week. Superintendents have some interaction with the food and beverage people, but at our club they meet for an hour and a half each week to review prospective events. Now the catering manager's secretary highlights anything from the meeting that con-

Five time-saving ideas

To save time and use it more effectively try the following:

1. Make a list of the things you want to and could do if you had more time and use the list as motivation to improve your time management.
2. List and prioritize weekly objectives.
3. Continually ask, "What is the best use of my time right now?" and do it.
4. Devote primary attention to Priority A tasks.
5. Take advantage of available technology such as handheld computers, cell phones and call forwarding.

cerns me. Saving an hour and half doesn't sound like much, but when you are working 60 hours a week, now you're down to 58."

Step Two: Delegate

The toughest part of time management for many superintendents can be learning to let go of certain tasks. Superintendents are often proficient and being efficient, but have real challenges when it comes to delegation. "I talk to some superintendents who are afraid to give some things up and are afraid to empower their people and want to be the 'hands-on guy.' Well if you want to be the hands-on guy, then welcome to 12-hour workdays," Williams says.

"My motto is to hire the right people, train them appropriately, empower them and then do what you need to do to retain them."

Step Three: Schedule

As the saying goes, "Failing to plan is planning to fail." While planning takes time, it ultimately can save more time for you and your staff by organizing days, months and years better.

Williams also advises planning your daily activities around your personal energy cycle. "Some people are at their best early in the morning. Others peak in the afternoon. Whenever possible, try to plan your daily schedule to match your prime time," Williams says. Schedule work that requires concentration during your prime time and leave less demanding activities, such as mail or returning phone calls, during your non-peak performance time.

Extra time cannot be manufactured, so when scheduling set priorities realistically on what to do and not to do. To set priorities, first list what needs to be done, then prioritize them. An easy method is to prioritize tasks using an A, B, C method. Priority "A" tasks are must do. Priority "B" are the things you should do. Priority "C" are things that would be nice to do, but that are not essential.

When creating plans, don't forget to leave room for unexpected events, Williams advises. On a golf course any number of unexpected equipment breakdowns or weather delays can wreak havoc with a superintendent's schedule. So, allocate some time in your daily and weekly plan for coping with the unexpected. GCN

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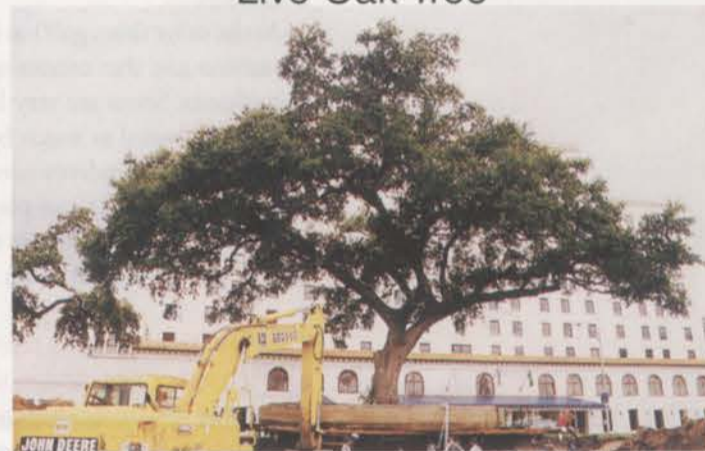
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**GCN INTERVIEWS
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Q What is changing in the area of golf course consulting?

In one respect little has changed. Golf has always involved consultants. We have consultants that specialize in water salinity and testing. We use engineers to resolve drainage issues. We hire architects to improve the design of a course and its play. By definition the golf course superintendent deals with a broad range of issues, and no one can be an expert in every particular area, so we need to call in those who bring the necessary expertise. Our job is to protect the club's assets and to make sure that what we do is correct in the long term. The smart superintendent knows what he doesn't know, but gets the consulting help he needs to keep the course in great condition.

At the same time, golf has become more of a business and that creates opportunities for consultants. Some are very helpful and others are motivated as much by self-interest as service. Superintendents need to understand the role consultants can play, how to work with them, how to manage them, and to be aware of the potential down side.

Q What do you mean by the potential down side?

A number of superintendents have lost their jobs after their clubs hired consultants. The superintendents that seem most prone to this scenario work for private golf courses, are more than 40 years old and have higher salaries. Of course, when a consultant is hired he or she has been positioned to the superintendent as a resource to help them and improve the course. Later, the superintendent was let go.

Q Are there warning signs that the superintendent's job might be at risk?

In all of the cases the superintendents fired had no idea that a consultant was being hired. A number of these superintendents were called

to a meeting and found a consultant sitting there. Some have come to work in the morning only to find a consultant sitting in the office waiting for them.

Q Sounds like some golf courses are hiring consultants to get rid of their superintendents.

There are a range of possible reasons to explain what's going on. The firings I've heard about have been mostly on private courses, so politics is a possible factor. Some clubs want to make a change at the superintendent position but are not willing to do it themselves, so they hire a consultant to do it for them. The consultant's role might even be to come up with the justification to fire the superintendent.

But there are other possible motives. Budgets are tighter and if a club is told they could replace their superintendent for a big name person – at the same cost or less cost than the superintendent's salary – there's a temptation to do it. The scenario I am describing does not involve replacing the superintendent on a full-time basis, it involves a part-time, ongoing consulting relationship.

Some of the superintendents who have been fired were told that their clubs wanted to take the course to the next level. That is a legitimate objective, but I question if these club owners and managers even understand what the next level is? I also question why so many apparently did not bother to talk to their own on-site consultant first – their superintendent – about the desired changes before turning to an outside resource?

Q Should the superintendent be told if his club is considering hiring a consultant?

Absolutely, for two reasons. First, it's good business. If the desire is to improve the course, or to get ready for a major tournament, then the superintendent and the consultant will need to work together as a team. The consultant may bring special expertise, but the

superintendent knows the course better than anyone. So, why would any course not want their superintendent fully involved in this process, even to the point of helping to select the best consultant for the job?

Second, hiring a consultant without talking to the superintendent is unethical. It's not good business or the professional way to conduct a business.

Q That assumes the superintendent is not the problem.

If a course has a problem with their superintendent then they need to confront him or her and work out a solution, even if that means making a change. But being up front about this is the ethical approach.

Q Can a course really get by without a full-time superintendent?

A consultant can make the pitch that he offers greater expertise and experience for less money. The consultant determines the program, then assigns day-to-day operations to an assistant superintendent or to some other person who will be on the course every day. Unfortunately, I have heard that such programs have failed on a number of courses.

A golf course is always best served by having an experienced superintendent on site every day. Course conditions can change rapidly and someone with the necessary experience needs to be on site to make the right decisions regarding what to do and how to allocate people and other resources. No one can understand the weather patterns, equipment, staff, the club and members like the superintendent. None of this is cookie cutter stuff. It takes time and experience to know your soil types, irrigation water and the microclimate on a green that's in the shade on the hill, or on another green that has heavy clay soil. There are so many things that make every course different. Certainly the same principles apply to every course, but no two golf courses are exactly alike. One course I

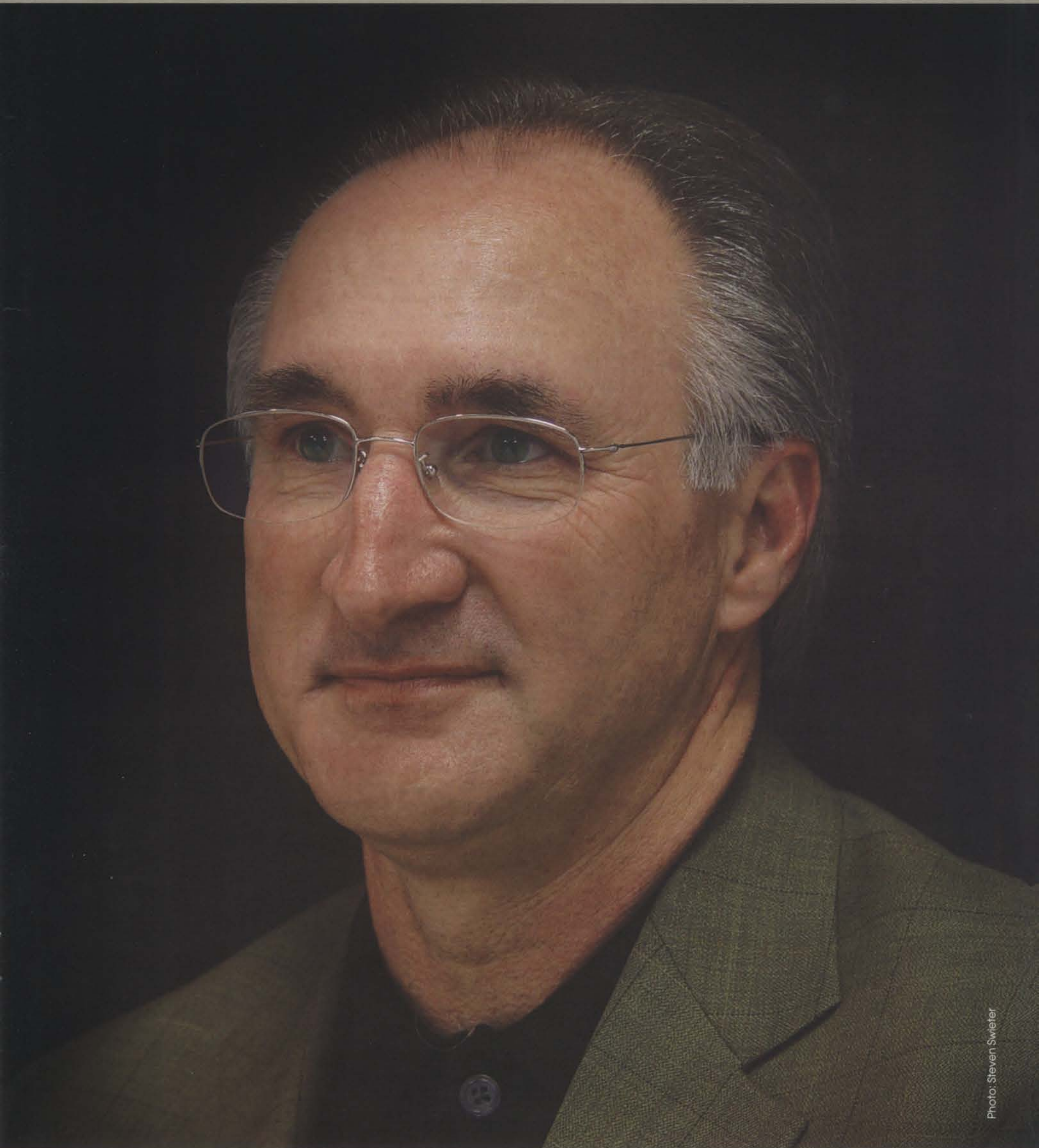


Photo: Steven Switeler

once managed had three different construction types and periods of greens on 18 holes. A consultant, no matter what his expertise, is not going to learn the intricacies of that when working part time.

When it comes to protecting the course the superintendent is the club's brains, so I question the management of any club that does not have their brains on site everyday. If the course has a good superintendent, then hiring a consultant part-time can be a mistake. If what a club wants is a high-profile superintendent, then hire one, but hire him or her as your full-time superintendent.

Q Your advice if a club hires a consultant without consulting the superintendent?

The first thing is to be professional and don't lose your head. Find out as much about the particular consultant and the hiring conditions as you can. Learn why the consultant has been hired and what management expects him to accomplish. Find out what the consultant's background is and his special expertise. If I learned some negative factual information about the consultant, I'd provide that information to my club. There are plenty of superintendents you can call to get background information about a consultant.

The second thing I'd do is gather ammunition regarding what you have been doing on the course and why. The consultant is going to be asking for this information anyway. You are going to be asked what you have done to the course and why. If it comes down to your opinion vs. the outside expert's opinion, you lose. After all, the club hired him to solve a problem or improve conditions. So you will need to back up what you've been doing on the course and the reasons for it. Hopefully you can cite outside sources that you've consulted for advice and expertise. The opinions and recommendations of third-party sources, including university experts, USGA and even other superintendents, command respect. Your objective is to be able to talk about your program from a technical perspective and not come across as being defensive.

Related to this, if a consultant writes a report that says something the superintendent is doing is wrong, the superintendent should have access to that report and be able to argue his or her side.

The third thing I would do is record everything that happens. For example, document if the consultant makes recommendations that you know are not the best for the course or that part of the country. The problem then is that you have been put in a no-win situation. If you disagree with that consultant you might

risk being terminated for refusing to carry out his directions. And if you do what you believe to be wrong, then you are compromising your principles. So, record everything that is said and done. That way if the greens experience problems the following year, you will have a record of what was done and why.

Q That assumes you want to still work for the course.

The issue behind all this is deciding whether you want to continue working for an employer who has treated you unprofessionally and with little respect. At the time you find out that a consultant has been hired you can't predict the outcome in terms of your final standing with ownership – whether they will keep you or not. But assuming you survive, the question is whether your relationship with the club will ever be the same again. If the answer is 'no,' then what are you going to do about it?

If I had a bad feeling about a consultant being brought in over my head, I would update my resume and start contacting close associates to see what the job market looks like – just in case.

Q What if the superintendent is fired?

Negotiate the best severance package that you can. Being fired is sometimes similar to being hired in terms of being able to negotiate. When you're hired an employer may have made concessions to get you on board. When you are fired they might want you to go away quietly and be willing to make concessions on severance pay and benefits.

Depending upon the circumstances of your termination and your relationship with the golf course, it might be wise to contact an attorney to help you decide your best option. I would consider talking to an attorney before signing any release papers or termination agreements.

Q Is there a way to avoid a problem altogether?

Being proactive about your course is the best action you can take. It's ironic, but the way to avoid being surprised by the hiring of an outside consultant is to use your own consultants. Being proactive does not always require spending money. It can be as simple as seeing something coming up that you've not done, and getting help from another superintendent who has done it. We did exactly that in 2002 when we renovated a course. I called Bill Womak, superintendent at the Dunwoody Country Club, to come in and offer his advice. Since then a neighboring su-

perintendent visited me about a pending renovation at his course. I ran through some of the issues he will face, like the need to have a contingency fund in the budget. In our renovation we had to add a bridge that was not in the plan, and we hit a spring that cost a lot of money to fix. My advice will help him budget better because of the experiences I have had.

I would never discount the value of advice from other superintendents in your immediate area. There is so much expertise available and superintendents always help other superintendents. One young superintendent told me recently that he could tap 50 years of experience just by calling me and one other superintendent that he worked for and trusts.

Q How can a young superintendent find and tap into outside expertise?

Connect with those in the industry. When I became a superintendent I made sure all the well-respected superintendents in my area knew who I was. I went out of my way to ask for their advice and they are always willing to help me. Now as I get older, I will call younger guys who worked for me and now are on their own.

The problem is that we're all so busy nowadays that there is less and less of that interaction going on. Superintendents need to visit other courses and see what they're doing – how they use fans on their greens, etc. By getting to know other superintendents, when you have a problem you can call them and they will come to offer their best advice.

A structured way to do this is to join an association and go to your chapter meetings. In our GCSAA chapter we have created an email list. This is an excellent way to get advice fast, for example, what companies do good cart path work in your area?

Most superintendents stay in touch with their university instructors, but you also need to make contact with local university people to get local information. We call university people on a monthly basis about issues or to ask questions. You can also work with them to test new things.

Chemical companies are often helpful, too. We've gotten help from the local and national technical people. We've also done some experimental-use-permit work with some companies.

Finally, it's wise to network beyond your area. I became active in GCSAA and that allowed me to interact with people who have similar business situations from other parts of the nation. There are several superintendents at 36-hole facilities around

the country that I enjoy talking to about issues pertinent to larger operations. I met many of these through GCSAA committees and the GCSAA Golf Championship. Despite any differences in geography, all of these superintendents and I deal with similar issues and we benefit from each other's advice.

Q Do you use consultants on a regular basis?

I have made it a habit to use my USGA Greens Section agronomist every year. I write up a list of questions about grasses and problems, things I'm interested in and ongoing issues, then invite him in to look over my course and talk. USGA offers a consulting service by the half-day or day and the cost is very reasonable. I budget for it every year. The value to me is that Pat O'Brien, my USGA agronomist, travels the entire southeast region and sees a lot of courses. He lets me know what other clubs are doing.

Working with USGA also is a proactive way to document that what you want to do is the correct thing. What I like about USGA is that there are no financial incentives behind their recommendations. They also offer a long-term perspective. It's one thing for a course to grow a grass to spruce up the course for a tournament, but that's different than having grown that grass for several years.

Much of the progress we've made on my courses were prefaced in a USGA report. USGA helps me determine my improvement program, gives me their approval on smart moves, and sometimes has changed my mind on things I was thinking of doing. I respect their opinion.

Q What positives can a consultant bring?

People accept the advice of experts. When I decided we needed to rebuild greens on the Highland course I knew outside backup would be helpful. I arranged for a USGA agronomist to test the greens. I brought in an architect to get his opinion. They agreed that the greens needed to be fixed. So, when I stood before our members I had the added credibility needed to make my case. Some superintendents may be afraid to bring in outside experts because it might appear to diminish their importance. That's not so. We all use people for advice. When doing something as important as remodeling, it's only wise to seek and get the special expertise needed.

An outside opinion also can be useful regarding controversial issues, such as taking down trees. Superintendents get in trouble

when they mess with course design or trees, but not when they change the fertilizer program. Golfers react most to things they touch and see.

Q What value can a business consultant bring?

On the business side, consultants can help a course in a number of ways. The superintendent acts as a purchasing agent, and consultant advice can help him decide whether to buy equipment or lease it. An expert can help you decide what's best to do and help you sell it to the club. They can also help you think outside the box. A number of courses are running into issues with benefits. We work to retain people by making the Atlanta Athletic Club a great place to work, but as a result we experience more health insurance claims. So, employee retention can save a golf course money, but cost it money in benefits. A consultant can help us work through this issue.

The only sure thing in golf is that we'll do things differently every year. Consultants can bring you new ideas and solutions to improve profits, improve quality and market better.

Q What's your advice to superintendents regarding job security?

Be proactive, communicate and take great care of your course. The best possible job security comes from taking great care of your course and from knowing what's going on.

Some superintendents have contracts with their courses to protect them in the long term. I have one and all of our managers at the Atlanta Athletic Club are under contract. I worked for a long time without one. The problem with working on an informal agreement is that it does not protect you five or 10 years down the road when the owner or manager may have died or left the course. A contract puts issues like severance and arbitration down in writing. It would be a good idea to include in your contract that you must be informed before any outside consultant is hired.

There are possible downsides to employment contracts. They turn people off. They also work both ways – they put restrictions on your ability to leave, for example. And ultimately, if the club doesn't want you there anymore, then you don't want to be there either, despite what the contract says. What the contract prevents is giving you little or no notice that you no longer have a job.

Q What is your advice to golf course management regarding consultants?

Simply this: Do the research and background checks to determine what the consultant's motives are and their recent track record. If a consultant stands to make thousands of dollars per year from the advice offered, then that should serve as a warning flag. I have heard of consultants that profit directly from the fertilizer or other products they recommend to get the job done. The club may not know that, especially if they are looking for a silver bullet solution.

It's also important to check out the consultant's track record – not what they have done in their careers, but what they've done as consultants, especially most recently. As the saying goes, 'Nothing is impossible for someone who does not have to do it.' It's easy for a consultant to fly in and say this and this needs to be done. The question is can they do it? The question also is, why can't the club's own superintendent do it? Does he have the resources? Does he have the expertise? If not, can he get it through his own network of consultants?

I'd also check the record of any outside consultant in your area of the country and on your type of grass. Being an expert in the southwest doesn't make you one in the northeast or midwest.

Q Advice for owners and managers about their relationships with their superintendents?

Camaraderie, professionalism and ethics have long been the norm in golf and these ideals have helped make the game what it is. The rise of golf for profit has put pressure on those ideals. Today, it's often about money and we know what the money does to people. Despite this, the ethical aspect of golf remains as important as ever. The relationship between the superintendent and his course owner or manager has to be based on trust. The superintendent is entrusted with the course's most valuable asset and can only do the job correctly when his or her judgment and knowledge is trusted by those he works for. Going around the superintendent crosses a line and damages or destroys the trust relationship. It would be no different than if the owner hired a management consultant without talking to his or her general manager first, or a retail consultant without talking to the golf professional first. GCN

Ken Mangum, CGCS, is director of golf courses and grounds at the Atlanta Athletic Club. He can be reached at KLM@acc1.org.

Your next job

GETTING THE MOST OUT OF LIFE AND WORK BEGINS WITH A COMMITMENT TO GROWTH AND CAREER PLANNING

by ROGER STANLEY

Golf course superintendents enjoy challenging work, potential for excellent pay, and opportunities to live and work in locations that most people can only visit as part of a dream vacation. For all these reasons, most superintendents enjoy their careers enough to recommend it to their children. In a December 2003 *Golf Course News* survey of more than 4,000 superintendents, 61 percent of the respondents said they would recommend that a son or daughter become a superintendent (see chart on page 37).

However, realizing the benefits of a career as a superintendent is not easy or automatic. Climbing the career ladder requires a planned series of job changes to grow one's skills and take on greater responsibilities. According to the Golf Course Superintendents Association of America (GCSAA), about 20 percent of superintendents change jobs each year, and on average work about seven years in a position. Advancement requires personal growth, hard work, learning a range of new skills, developing the ability to wear numerous management hats simultaneously and more.

Advancement also requires continuing career management, a skill most aspiring and established golf course superintendents should pay greater attention to, says Jim McLoughlin, former executive director of GCSAA and founder of TMG Golf, a Carlsbad, Calif.-based consulting firm specializing in course development.

"The golf course industry is 10 to 15 years behind most other professional fields in terms of career management," McLoughlin says. "The problem is that the subject of career planning does not appear on the radar screen of most superintendents."

To teach superintendents about the skill, McLoughlin presented "Strategic Career Planning for Superintendents and Assistants," a seminar sponsored by Jacobsen at the February GCSAA conference in San Diego. His central



advice to a packed room was to take charge of their own destinies.

"Seventy-five percent of all people react to life by following the easiest path," McLoughlin says, "while only 25 percent take the initiative with their careers and lives. Winners have a plan that dictates where they want to be five years from now, 10 years from now and later in life. Superintendents who fail to realize their career potential become job vulnerable later in their careers."

McLoughlin says winners at the game of career management are those that continue schooling, work with their USGA Green Section, learn to use new technologies, make good use of down time and balance their lives. As managers, they hire well and delegate effectively. They are organized, good at communicating, dress well and play golf comfortably. They recognize when it is time to change jobs and are prepared to do so.

Career losers reflect the reverse of the above.

"My observation is that superintendents who react to life are those that stay too long at a job early in their careers and don't delegate enough. Later in their careers they still stay too long at a job and try to delegate too much. They often try to take a CEO approach to the job by taking too much free time with declining visibility at their club or course. They also tend to be disorganized and sloppy — a concern because the people they report to tend to be very organized and orderly."

Another discipline for success is being able to balance work and family, McLoughlin says. The goal should be a 40-hour workweek, and while not always possible, no superintendent should want to appear to be a workaholic.

"If you want to impress your employer then do the job within routine hours," he says. "You can do that by managing yourself and learning to delegate. Lower your stress by planning effectively and exercising."

"And try not to bring your work home. Building a firewall between work and home allows you to spend time with your spouse and your children. Being a good superintendent should never mean spending adequate time with your family only during the off-season, a habit that too frequently leads to divorce. The key is to learn to manage yourself first, then your job, and finally your family. If you fail at one, you fail at all three."

Seeing the opportunities

The place to begin with career management is to identify all available sources of jobs throughout the industry. Unfortunately, the player and golf course construction boom of the 1990s when more than 500 courses were opening per year has ended. Today, about 200 new courses open per year. McLoughlin says

while this limits opportunities, it does not end them.

The golf course superintendent job market is dominated by municipal, daily fee and private courses. There are about 16,000 courses in the nation. Of these more than 4,300 are private courses and more than 11,500 are public. Sixty percent of the courses are 9-hole courses, which provide excellent opportunities for superintendents just starting their careers, as well as for superintendents near the end of their careers.

But there are other opportunities to consider, McLoughlin says. One is in construction. Golf course construction is an opportunity too often overlooked by aspiring and established superintendents. "Generally the best way to get into this market is to stay in touch with the architect community," McLoughlin says. "Some shy away because of the temporary nature of this business, but on many occasions the construction superintendent has an opportunity to stay on the job after helping to build the course."

Working for a golf course management company is another opportunity. Contract companies manage about 20 percent of the courses across the country. "For the superintendent just starting out the advantage of working for a management company is that you get to be supervised by professionals, not lay persons."

Another opportunity to consider is working at a golf practice facility. This is a fast growing segment in golf and can be an excellent entry-level job into the world of the golf course superintendent. It can also be a good exit opportunity for veteran superintendents who want to back off on work or to get into an ownership situation.

Other opportunities for established golf course superintendents include 36-hole-plus operations, destination resorts, overseas jobs and consulting.

"Once you know what is possible, the next step in career planning is to identify what you want out of your career and your life," McLoughlin says. "If you desire to own a home with a pool, take major annual family vacations, retire to Arizona and have your children attend Harvard, you need to plan your family's life accordingly, or you will never realize these goals. The same is true with your career."

"My work with golf course superintendents shows that most don't really think long term about what they want out of their careers and

Golf Course News polls superintendents*

Are you improving your business management skills and training in order to qualify for a promotion?



Are you improving your technical and agronomic skills and training to qualify for a promotion?



*Independent online study of 4,000 GCN readers in December 2003 with a 13.7% response.

how to get there. For example, one in five golf professionals envisions owning their own course someday, but only one in 200 superintendents thinks about this. Why? Superintendents are actually in a better position to own and run a golf facility in many ways than are golf professionals."

Getting the job you want

Serious career planning involves three steps: First, knowing how to get a job. Second, knowing how to hold a job. Third, knowing how and when to move on to the next job.

"Getting the job you want can be a matter of luck," McLoughlin says. "Luck does play a role, but at most it is 25 percent of the equation. The other 75 percent are things that you control — your preparation, skill and timing."

Early in a superintendent's career, McLoughlin recommends working as an assistant superintendent at two to three places for two to three years at each job. Try to work in both the north and south to gain experience with cool and warm season grasses to keep both job markets open.

Next, McLoughlin advises serving as the superintendent at two to three advancing jobs.

"When should you think about leaving an assistant job? I think the ideal time is when you have learned everything you can from that superintendent. But don't make lateral moves if you can avoid them, and try to not get trapped into a position because of a big salary or benefits. The goal of early career planning is to envision where you want to be in the short and longer term phases of your career and then work to get there," he says.

As one possible example of a career job sequence, McLoughlin suggests working

as an assistant at several good public golf courses and then working your way up to become superintendent at a good public course. Next, maybe take a challenging job as an assistant superintendent at a good private club and then work your way up to becoming superintendent at better private club. After this, become the superintendent at better private

club. Finally, become the superintendent or property manager at a multi-course facility or a resort.

A special objective in such a career path is to work toward "pedigree" jobs at the country's premier golf clubs and courses.

"The candidate with a better pedigree resume has a better chance of winning a job,"

McLoughlin says. "Your pedigree dictates if you will get interviewed because if you have worked at better clubs it will be assumed that you have had better training and met more challenging standards. All this assumed experience reduces the risk of hiring you. Rightly or wrongly, the chairperson of a search committee is afraid to make a mistake. He or she doesn't want a risky hire. So a pedigree track record gives you the advantage, especially for the better jobs."

McLoughlin advises young superintendents to come up with their own definition of what a successful superintendent is and then decide how to become one. One of the considerations is deciding if salary is more important than pedigree.

"In terms of career opportunities golf is a very flat market," McLoughlin says. "It is relatively easy to find and take a lateral job. But if you want to become the superintendent at a premier course, then opportunities are limited. If success means to one day manage a premier golf course, if that is a major part of your definition of success, then my advice is to think more about establishing your pedigree early on than your salary."

Top 12 skills to get a super job

by STEVE SMITH

For an increasing number of golf courses, hiring a superintendent is no longer a matter of comparing candidates against a wish list. Premier courses recognize that star performers are a must, says Randall Martin, president of Sibbald & Associates, an executive search firm specializing in golf and resorts.

"Today, more than ever, clubs recognize the importance of the golf course superintendent," Martin says. "There is more competition between clubs than there has been in the past, and courses recognize that they need to have a good golf course to attract new members."

Speaking at the GCSAA Show last February, Martin says there are 12 qualities employers look for in superintendent candidates that can do it all:

1. Agronomy skills. "Clubs are looking for an individual with good agronomic skills. This means at least a two-year degree in turfgrass management or a related field, a CGCS who has kept up with the certification requirements and agronomic advancements and someone that has produced a good product."

2. Strong leadership abilities. "Do whatever you can to improve your leadership and management skills by taking the necessary courses or working under someone who has an excellent reputation for leadership and management."

3. Good writing and communication skills. "If you can't clearly communicate and sell your plans for the golf course to the general manager, the green committee and the membership at large, you are going to have problems. You also need to be able to communicate regularly to the membership, in writing, so that they know what's going on."

4. Strong character and decisiveness. "Most clubs are looking for a superintendent for guidance in setting up a long-range plan for the golf course. So, they want someone with the strength of character to stand up and say what the course should be doing and what the priorities should be. Obviously you have to be tactful, but the clubs are looking for a strong individual, not a Mr. Milk Toast."

5. Team player. "Clubs are looking for someone with a reputation of working well with a golf professional and other staff."

6. Approachability. "Clubs want someone who is visible on the golf course when the members are around, someone who the members feel comfortable with and someone they can express their feelings to. If a member has a legitimate concern and the superintendent can handle it in a timely manner, that member will become one of the superintendent's most ardent supporters."

7. Sound financial and administrative skills. "You have to be able to put together a detailed budget and handle the administrative details. In other words, the ability to do paperwork is important."

8. Experience with improvements. "At some point, most clubs will renovate some part of their course, so experience in doing in-house projects, as well as hiring outside contractors and supervising them, is important."

9. Related experience. "When a search committee reviews a resume, they are looking for similarities between the candidate's experience and their facility - similar weather zone, same type of grass, a private or public course, managing a Hispanic work force, or similar factors."

10. Association involvement. "Be active in your local and national associations and hold an office if possible. Clubs look favorably on superintendents who have been recognized by their peers."

11. Play the game. Playing the game was not important just a few years ago, but that has changed. Clubs want a superintendent who plays the game and sees the course from a player's perspective. It's not necessary to have a single-digit handicap, but it is important to play the game."

12. Know what you want. "I've had candidates tell me they really weren't interested after they were selected for an interview by the search committee. That doesn't go over well with the committee or with me. Do your research about the club to determine that you really are interested in the opportunity before you apply. People in the golf business tend to have long memories."

Randy Martin is president of the golf course superintendent division of Sibbald Associates, a St. Louis-based executive search firm specializing in resorts and golf clubs. Martin can be reached at rmartin@sibbaldassociates.com.



Necessary skill set

Many superintendents mistakenly think that being good at taking care of a golf course is the primary qualification for a better job. McLoughlin suggests however, that unless the superintendent is able to document past performance professionally via text, graphics, visuals and a Web site - past performance will mean little.

"I strongly advise superintendents to get USGA Green Section and peer evaluations of their work. From a career management perspective, being evaluated by your peers is the only professional supervision available in the industry today, unless a superintendent works for a management company. However, few superintendents take advantage of this opportunity. Unsupervised superintendents tend to repeat mistakes and fail to grow professionally."

Another mistake McLoughlin sees superintendents make is getting trapped into thinking that their employers should pay for all their training and education. That does not always happen, so superintendents should establish a personal budget to travel to seminars and trade shows and to purchase computers, cameras and other resources.

"Your career is your responsibility and that means spending some of your own money," McLoughlin says. "For example, I suggest you visit Augusta during tournament week - it's the greatest living golf course laboratory you can possibly imagine, especially early in the

week when they are fine-tuning the course for the tournament. There is no harm in asking your employer to pay for some of this, but if they won't then you need to be prepared to do so yourself. Remember, all this is tax deductible.

"I would also suggest that superintendents commit to obtaining CGCS certification. What are you going to answer if one day you are standing in front of a search committee for a job you want badly, and they ask you if you are working to become certified? If you are in the process that will probably suffice. If you are not in the process, what answer can you possibly give them that shows any commitment to the industry or your career?"

Because the successful superintendent must manage a multitude of responsibilities, other career skills to master early in a career include being able to communicate effectively in writing, being a good mechanic in the age of ultra hydraulics, keeping accurate records, knowing how to manage budgets and staff, and being technology literate.

"In this day you need to be able to use a computer, software and work on the Internet. The Internet is a great way to network with other superintendents," McLoughlin says.

"I'd also learn how to use a digital camera and develop your own Web sites. You can dedicate one Web site to your current job - with your employer's permission - that you update weekly with course activity, staff profiles, maintenance schedules, special projects and more - and a second, personal Web site that targets your next job. The goal of this second Web site is to complement your resume. In an interview only 20 percent of your time should be devoted to your past jobs, with 80 percent focusing on a plan of action for the job you are applying for. Most superintendents reverse these percentages in an interview to their own detriment."

McLoughlin says a final suggestion on skills development is to commit to playing golf comfortably and regularly. A recent survey showed that 31 percent of all golf course superintendents do not play golf at all, one-fourth pay once a month and about half pay once per week.

"What does playing or not tell you about a superintendent's commitment? Playing the game is not a luxury. Playing shows respect for the game and is a great way to learn the play and Rules nuances of your course. I suggest playing a minimum of 20 visible rounds per year. Having a low score is not necessary, but take lessons and work to earn a handicap. Also know the Rules well! Take the USGA and PGA Rules tests. Better still, qualify and serve on the Rules Committee at your club or course. All this will earn you

peer recognition within the family of golf, which translates into greater job security."

Options for senior superintendents

It is never too late to begin career planning, McLoughlin says. Even the more veteran superintendents have options they can exercise to put themselves in a stronger situation.

"Again, the place to start is with what you envision for yourself," he advises. "For some established superintendents that will mean continuing to work at their present jobs on their own terms. For others it will mean moving on and up."

For those who want to continue working career planning can involve negotiating a better contract, expanded responsibility, the opportunity to earn outside consulting income, and possibly taking a sabbatical leave.

"The best way for a veteran superintendent to keep the future job opportunity door open is to have an established track record for managing his or her present golf course operation impeccably and below the standard budget norm for the region. With this card available, superintendents will always be able to call their shots because they will always be able to pay their own way."

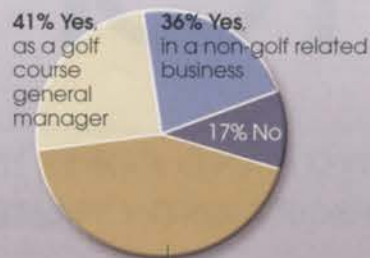
For those who want a better challenge or more rewarding work than a present job offers, the opportunities include becoming a superintendent at a better golf course operation, establishing credentials to become a general manager, or going the entrepreneurial route via a consulting company, or acquiring equity in a golf facility operation.

"There are opportunities to buy a club or buy into a club," McLoughlin says. "Owning a practice range is also a noteworthy experience that I'd recommend. It's a legitimate opportunity that requires one-sixth of the land and development cost of a regulation 18-hole golf course - while at the same time potentially delivering similar bottom line revenues."

"Whatever route you take, whether as someone who is just entering the business or as a veteran superintendent working on exiting on your own terms, your dreams are

Golf Course News polls superintendents*

If you were offered a new job would you consider taking it?



72% Yes, as a superintendent with a higher salary and more responsibility

Would you advise a son or daughter to pursue a career as a golf course superintendent?



*Independent online study of 4,000 GCN readers in December 2003 with a 13.7% response.

only possible through career planning," GCN

Jim McLoughlin founded TMG Golf, a golf course development and consulting firm, and a former executive director of GCSAA. He can be reached at golfguide@adelphia.net.

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Sutton Bay

DESIGN-BUILD CUTS TIME AND COSTS IN DESIGN AND CONSTRUCTION OF SOUTH DAKOTA RESORT AND CHAMPIONSHIP GOLF COURSE

by
MARK
LESLIE

The advantages of design-build construction include cost savings, fewer change orders and simplicity of management. To build the Sutton Bay Golf Club in Agar, S.D., the decision to use design-build came down to saving time.

"By the time we got all the pieces put together and looked at the schedule, we felt design-build was the only way to get the job done," says Bill Kubly, chief executive officer of golf course builder Landscapes Unlimited, Lincoln, Neb., and a part owner of Sutton Bay. What made this design-build project unusual was that it began with only a total budget in mind – \$18 million.

"While influenced by Kubly's involvement in the project, and Landscape Unlimited's experience with the construction process, the decision to use design-build was based on time. Design-build

probably saved us a year," says Mark Amundson, general manager of Sutton Bay.

"If we had to figure out all the particulars beforehand, we would have had to wait another year to begin construction," Kubly agrees. "And that year represents a lot of money and lost opportunity."

Shaving 60 to 90 days off the construction period represents a savings of \$1.1 million in carrying costs at 6 percent interest. Extending construction another two or three months also would have added to the grow-in costs.

"Our opening date was ... as fast as you can do it in South Dakota," adds superintendent Bryan Tipton. "Design-build is definitely a quicker process."

Resort opportunity

Sutton Bay originated when Matt Sutton envisioned turning his 4,300-acre horse, cattle and buffalo ranch into a premier golf, fishing and hunting resort. Amundson surveyed the extraordinary property, then called Graham Marsh, a PGA Tour player and a business partner. Marsh in turn contacted Kubly about the proposed resort, and Kubly and a handful of other members of Sand Hills Golf Club in Mullen, Neb. agreed to invest in Sutton Bay.

"The property offered a panorama of massive dunes abutting Lake Oahe, a 200-mile-long reservoir formed by a dam on the Missouri River," Kubly says. "It was an extraordinary opportunity, but we knew the

team had to be on the same page. The goal of using a turnkey design-build approach was to speed up the process. Missing a season meant losing opportunity."

In this case, a golden opportunity. With several investors from Sand Hills, the Sutton Bay Club put \$18 million on the board to build an 18-hole championship golf course, a practice range, clubhouse, lodge and housing units for 75 guests.

Once it was determined Landscapes would be the general contractor, the normal first order of business, the choice of architect, was already decided since Marsh, a PGA Tour player and an architect, also was one of the investment partners. So, the next steps were to engage an architect to design the clubhouse and lodging, bring in company experts to master plan the buildings, and hire a building contractor with the resources to handle such a large project.

"The rest we did mostly in-house," Kubly says, "although we pieced out all the small aspects like the wells, and dropping pumps into Lake Oahe."

On site every day to oversee construction were Amundson, Tipton, and Rock Williams, Landscape Unlimited's construction superintendent.


The design-build team spoke daily and met every week with Marsh and Kubly. Parameters for everything from root zone to the width of cart paths were set, Williams says, adding: "Adjustments were made, but most things were set in stone. That made life a little easier."

"This is a more simple process than design-bid-build," says Amundson. "There aren't as many people involved, not as many layers. It's a cleaner, simpler operation from



Photo: John Henebry

Sutton Bay Golf Club offers fishing, hunting and an 18-hole championship course. The resort also includes a 9-hole executive course, clubhouse, lodge and housing units for 75 guests.



Sutton Bay's 422-yard par-4 finishing hole challenges golfers with fairway rolls that can leave the ball on upslopes, downslopes, above or below their feet. A variety of pin placements add different challenges each day.



Photo: John Henebry

a management perspective. When you have a process like this, decisions can be made almost immediately.

"We built the project within three percent of what we put on paper the year before we started construction, and that included expanding the project to include a nine-hole executive course instead of the originally specified three-hole practice range. The overall project progressed right on time and we met all deadlines."

Superintendent on site

While Marsh roughly laid out the 18-hole course in October and November 2001, Tipton was hired in November and came on site for construction in April 2002.

"I worked with Marsh 150 days that summer," Tipton says. "He made sure we both approved every bunker. I wanted to ensure there were sufficient lips to keep water from flowing into them. Each bunker was custom-built."

Tipton also worked closely with Bill Roberts, Landscape's on-site design-build construction manager.

"This is such a huge property that we decided to build two maintenance buildings instead of one," he says. "We designed a second one to be closer to the course and also serve as the pump house. The building is nothing fancy, but it does include an extra 40-by-50-foot work area."

The main maintenance structure, a mile a half from the 1st hole on the championship course, is 50-by-100 feet, with a 10-by-50-foot office space and a break room. An existing steel farm building near the course is used for fertilizer storage.

Tipton specified SR-1119 bentgrass on the greens and tees, and the blend of low-mow bluegrasses called SureShot.

"Marsh was very good about working with me on all maintenance issues," Tipton says. "We were able to see potential problems and take care of them during construction. Water flow was a concern in some places. Generally the holes were so natural that we could see where the water flowed naturally and shaped them with that in mind. But we're on such a big slope that in a few areas we had to make longer runs with outlet pipes."

Throughout construction, Tipton was most intimately involved in construction of the unique bunkers. Crews took native grass from areas that were going to be

cleared for fairways and placed them around all the bunkers. The effect is bunkers abutting native areas that look like they were always there.

Design-build flexibility

"We started this project quickly," Kubly says, "and the design-build process allowed us to do that. Design-build is very flexible. On most design-build projects you do a lot of upfront preparations and make decisions on many specifics. But because you have a set cost, you can also accomplish a feat like Sutton Bay, where we took the challenge and drove the project as we went."

Amundson estimates the Sutton Bay partners saved at least 10 percent by building it using the design-build method.

"Because we have 25 to 40 projects under construction at any one time, we can negotiate lower prices on many materials," Kubly says. "Plus we value-engineer every phase of the job, and if you're an experienced design-build contractor, there are savings to gain in those arenas."

Landscapes was able to negotiate better fees from the clubhouse architect, then negotiated with the clubhouse contractor. "Instead of hard-bidding the job, we told them we needed 10-percent potential savings," Kubly says. "You make decisions like switching to asphalt shingles instead of a standing seam roof. You get all the options out on the table, and it's rare to have a contractor play a role in that."

Whether the developer needs to do the major pre-planning for design-build depends on the client, Kubly adds. "Many clients need to know the absolute cost. But for Sutton Bay we had a very good idea. We budgeted everything. We always had a



The 447-yard par-4 16th hole presents spectacular views of Lake Oahe. The carry on the drive can be startling.

Photo: John Henebry

few things in our hip pocket that we could make changes if necessary. For instance, the change to asphalt shingles saved more than \$80,000."

Ongoing teamwork allowed the developers to add amenities. The most significant was building a nine-hole executive course rather than the three-hole practice loop in the original scope. A wine room was also added to the clubhouse, and eight acres of native grass was sodded around the clubhouse to give it a natural, more finished look.

"The addition of the sod amounted to a \$40,000 to \$50,000 change-order, but it looks so natural," Amundson says. "The entire project is stunning." GCN

At A Glance: Sutton Bay

Location:	Agar, South Dakota	Tees:	Blend of SR 1119 bentgrass and SureShot (low-mow bluegrass)
Course type:	Resort	Slope:	147
Cost:	\$18 million	Rating:	74.9
Construction began:	April 2002	General manager:	Mark Amundson
Course opened:	June 2003	Superintendent:	Bryan Tipton
Yardage from Skull Tees:	7,245	Designer:	Graham Marsh, PGA Tours
Par:	72	Builder:	Landscapes Unlimited
Number of bunkers:	72		
Average green size:	6,700 square feet		
Greens:	SR 1119 bentgrass		

Left: A par-3 for the stouthearted, the 206-yard 9th hole features gnarly, natural bunkers to swallow balls struck shallow and to the right.



Centralized decision-making, in combination with a set project budget and scope, speeds decision-making in design-build projects, and reduces change orders.

Design-build: Delivering more for less

FASTER CONSTRUCTION, LOWER COSTS, HIGHER QUALITY AND LESS LITIGATION ARE ALL PROVEN BENEFITS OF DESIGN-BUILD

by
**MARK
LESLIE**

While design-bid-build dominates golf course construction, builders like Landscapes Unlimited are increasingly turning to design-build to provide course owners and developers with significant benefits.

"It was like going out and buying a car. Landscapes finished the project and handed the owner the keys," says John Colligan, architect for the Mansfield National Golf Club. Completed in 2001 in Mansfield, Texas, the course was the first design-build project done by Landscapes for a third party.

In June 2002, ArborLinks Golf Club in Nebraska City, Neb., was also constructed using design-build. "It is a great concept, and we hope to do a lot more of them," said Palmer Design Vice President Erik

Larsen, who worked with Landscapes and the National Arbor Day Foundation on the course.

"Design-build makes every dollar count," adds Jeffrey D. Brauer, who served as architect with Landscapes to build the WestRidge Golf Club in McKinney, Texas, for Terrabrook, a mixed-use community developer. While private developers are most likely to see the value of design-build, Brauer says cities could also benefit from the process to reduce the typical heavy load of paperwork they face.

Back to the future

Design-build had been the standard in construction for millennia – all the great churches and cathedrals of Europe were constructed using the method – until bid-

ding became the norm about 100 years ago.

At the heart of design-build are two principles: setting a firm price for the project, and hiring a design/construction team to complete the work for that price. Usually a golf course design-build team will consist of a builder, golf course architect and building architect, with one of the entities taking the lead to streamline management and serve as a single contact for the course developer or owner.

Dave Shelton, senior vice president of Design Sense in Olathe, Kan., which consults developers and municipalities on design-build, says the advantages of the method include:

- A marked reduction in change orders
- Cutting claims and litigation in half (according to the Design-Build Institute of America)
- Lower administrative burden for the developer by managing one contract instead of two
- Selection of the contractor on qualifications, not lowest price

Because traditional design-bid-build is sequential, the design must be completed before going on to the next step. With design fees averaging 5 to 12 percent of the total cost, a \$1 million design-bid-build project with an 8 percent design fee would require an \$80,000 investment before a contractor could even make a bid. In contrast Shelton says, "Design-build can actually allow the builder to begin construction before the design is complete."

A study done by Pennsylvania State University showed that, on average across the United States, design-build speeds up construction by 30 percent while decreasing project costs by eight percent.

Bill Kubly, CEO of Landscapes Unlimited, says the Penn State study figures are borne out in the golf construction world.

"You have virtually no change orders with design-build because the project scope is set before you start. And if that scope changes, you make adjustments through the remainder of the project to stay on schedule and on budget. You don't wait until the end of the project. And there is rarely litigation for the same reason – the ownership team makes all the decisions."

Kirk Kyster, president and COO of Landscapes, discovered the advantages of design-build several years ago when building courses for its ownership group. The company realized it could pass on those same benefits to clients. "We saw that owners, developers and municipalities were looking for a way to have their entire project executed with the minimum risk,"

'DESIGN-BUILD SPEEDS CONSTRUCTION 30 PERCENT WHILE DECREASING COSTS...'

Kyster says. "Because you are sole-sourcing the project, the scope becomes all-encompassing. Elements don't fall through the cracks. Offering design-build also created opportunities to showcase our capabilities to architects and others used to doing design-bid-build."

Palmer Design's Larsen points out that the reducing construction time means generating revenue faster. "It's a big deal when you can be open one half a year earlier by avoiding the entire design-bid-build process," he says. "The time savings alone is a positive and accountable number that adds credence to this method."

"Cities and developers that may be hesitant to push ahead on their projects could proceed with confidence using an experienced design-build firm," says Kurt Huseman, executive vice president for Landscape's project development division. "That has been a missing piece of the puzzle since the late 1990s and part of the reason some in the golf industry are struggling. We have now built more than 20 design-build courses and know where to spend the money and where not to. Pulling in the design element, along with other consultants and contractors, produces a truly collaborative process."

Design-build is being able to put a number on the table and have the peace of mind that everything's going to get built, agrees Corson. The key on the developer's side is to be very specific in the scope of work and avoid change orders.

According to Colligan, design-build works "particularly on a golf course where you're very cost-conscious." When Mansfield National was built, for example, several high-end clubs with "limitless budgets" were under construction in the Dallas market. "I guarantee ours will be as profitable as theirs and our greens fees are just \$39," he says.

The key to design-build is pre-planning, says Corson.

"Before construction, we spent a lot of time with Kurt Huseman, being very specific on the project scope – everything from width of the cart paths to number of irrigation heads to the amount of topsoil base in the fairways. That specification removes a lot of the guesswork and conflict. When you have a piece of paper stating precisely

what you're getting, it becomes clear whether it's been done or not. When you have four inches of topsoil and you thought you were getting six, that's when you have problems."

At WestRidge, Brauer says, "We sat down cooperatively with Landscapes and Terrabrook and set out a scope and budget. Terrabrook was comfortable that the prices were in line and they wouldn't gain anything from competitive bidding and would get help and efficiency from Landscapes' project management capabilities. It fit into their comfort zone. They understood how much you could spend on the golf course and clubhouse. Having worked with the team members before, it came together pretty quickly."

Miles Presteman, who was with Terrabrook at the time and is now senior vice president, operations, for the Texas division of Newland Communities, which later bought Terrabrook, agreed. "Linking an experienced golf course builder, like Landscapes Unlimited with an architect like Brauer, helped us build the course on time, even with a tight time schedule."

Colligan calls Landscapes Unlimited's design-build efficiency "value engineering."

"They used their experience and expertise to save money without cutting one corner," he says.

"Comfort level" is another tribute paid to the design-build process.

"I've reached the level of comfort with the process," said Sutton Bay's Amundson. "There are always things afterward that you might consider changing, but I wouldn't change the overall design-build process. My advice is to choose your team well. You have controls, but you are going to be much more comfortable if you know who the team members are and the kind of work they are capable of doing." GCN



Design-build can be considered an option on any new golf course construction or multi-faceted renovation project.



Constructed on a closed landfill, the 16th green of Oakland's Metropolitan Golf Links reflects the golf industry's potential to improve the environment.

Environmental leadership

GOLF STARS IN AN AWARD-WINNING ROLE AS THE ENVIRONMENTAL HERO

by
PETER
BLAIS

Combine a closed municipal dump with environmental problems, the City of Oakland, Calif., and CourseCo, a Petaluma, Calif.-based golf course management and development company, and what do you get? The answer is an environmental success story with golf playing the role of hero.

That's the story behind the 2003 opening of Oakland Metropolitan Golf Links, an 18-hole golf course that helped solve environmental issues, make a landfill site beautiful and useful for area residents, and was one of the facilities that led to CourseCo becom-

ing the first-ever golf business to win California's top environmental award.

Gov. Arnold Schwarzenegger recently presented CourseCo with the 2003 Governor's Environmental and Economic Leadership Award (GEELA). Established in 1993, GEELA is the state's highest and most prestigious environmental honor. It recognizes individuals, organizations and businesses that have demonstrated exceptional leadership in building public-private partnerships while making notable contributions to conserving California's environment.

"The award affirms that our work has

public value, which is deeply gratifying," says CourseCo President Tom Isaak. "It further affirms that the expense and tremendous leadership effort of our superintendents, the primary implementers of these programs, is worthwhile."

Award recipients are selected for promoting excellence in compatible, sustainable economic development while protecting the environment and conserving natural resources. Criteria considered for the award include economic progress, innovation, uniqueness, results, transferability, environmental impact, resource conservation im-

pact and environmental justice.

According to a state press release announcing the award, CourseCo "follows sustainable practices through the use of reclaimed water, development and cultivation of disease-resistant grasses, delineation of environmentally sensitive areas within course boundaries, promoting the use of native plant life and minimization of pesticides."

Raymond Davies, CGCS, CourseCo's director of golf course maintenance and construction and partner in the firm, says the minimization of chemical pesticides is a philosophy at all of the 13 facilities the company manages. Achieving that goal is possible through an Integrated Pest Management/Chemical Application Management Plans (IPM/CHAMPs) program — and was a significant factor in the state's decision to recognize CourseCo.

Davies notes that for a golf course firm to receive an environmental award is particularly difficult in California because the environmental bar is higher than in most of the rest of the country. "This award helps recognize golf's ability to be sound environmental stewards," Davies says. "We've demonstrated that we can manage environment issues extremely well."

Creating Oakland's Metropolitan Golf Links

Davies says the goal at all CourseCo facilities is to benefit the game, the communities in which the courses are located, progressive golf-industry research and the superintendent profession. The public-private partnership created to build Oakland's Metropolitan Golf Links serves as a prime example.

According to its GEELA application materials, the city of Oakland and Port of Oakland selected CourseCo in early 2000 to build a course on a city landfill. The overall project had three major objectives: Seal an urban landfill to protect water quality; affordably dispose of 1.3 million cubic yards of dredge soils removed from port channels to ease shipping; and construct an economically viable championship golf facility on portions of the landfill property being closed by the city and port authority.

Closing the landfill and disposing of the bay-dredged soils in an environmentally acceptable manner were potentially expensive problems. Using synthetic material or importing clay soils to seal the 100-acre landfill would have been extremely costly. Additionally, the port authority was facing a cost of \$10 million or more for remote disposal of the channel's dredge spoils, a task

that would have required more than 50,000 truck and trailer loads hauled at least 40 miles to an approved depository. Undertaking both projects and building a new course on the former landfill, which at one time had accommodated a very basic course, was a formidable challenge.

The solution required a working partnership to overcome complex technical, political and logistical problems. Numerous legal agreements had to be worked out and those involved included multiple contractors and scores of technical and environmental consultants, engineers, designers, architects and lawyers.

The plan called for pumping dredged bay mud, mostly clay, from the nearby shipping channel to cap the landfill. The capped landfill then was shaped to the rough grade of a golf course. The rough grade was thinly plated with permeable sandy loam soils. Finally, drainage was created and irrigation installed to grow turfgrass. Irrigation water is a blend of reclaimed water and groundwater.

The course, which opened in April 2003, solved all the environmental problems while providing a critically acclaimed course that is environmentally sustainable through site specific and stringent IPM/CHAMPs and runoff controls.

All three partners shared in the capital cost of a project that saved taxpayers tens of millions of dollars. In addition, the facility generates \$500,000 per year in rent to the city and port authority.

Davies noted Metropolitan has benefited the environment in other ways, for example:

- Nitrogen applications are limited and consist primarily of slow-release products that have lower losses to leaching and volatilization.
- Green waste from the golf course is recycled on the property, as well as some waste brought in from elsewhere in the city.
- A recycling program is in place.
- A bird dog controls birds on the course that otherwise pose a hazard to planes at a nearby airport.

Agronomic advances

The spoils dredged from the channel bottom to cap the landfill originally contained as much as 35,000 parts per million of salt. This has improved in the sandy soils where much of the salt has washed out. Sandy loam material used to plate the fairways was leached with 14 inches of water to reduce the total salts to an acceptable level, but sodium levels continue to be high. Naturalized areas between fairways were not

plated and those heavy clay soils have resisted leaching. They will improve over time, but can only support a small number of plant species. This led to the development of a salt-tolerant grass trial.

"The salty and shallow soils on this site posed tremendous agronomic challenges, which CourseCo has successfully met," wrote Dr. Ali Harivandi, an environmental horticulturist at the University of California (UC), in a letter recommending CourseCo for the award. "This course has become a significant asset for the City of Oakland, developed in a location previously reserved for only industrial use. We have established a research study on this unique site to identify turfgrass species that can be successfully grown in high-salt conditions. Results of this study, generously funded by CourseCo, will benefit every horticultural project in the Bay Area looking for plant material adapted to a saline environment."

A UC Cooperative Extension program at Metropolitan, hosted by CourseCo, attracted more than 100 Northern California course managers to learn about renovation and enhancement of a landfill. Attending the workshop was Gary Carls, CGCS, a past president of the California Golf Course Superintendents Association, and a recently-elected member to the Golf Course Superintendents Association of America (GCSAA) board of directors.

"I was pleased to learn of the challenges faced in the complex nature of closing the landfill according to new standards of encapsulation, and using dredged spoils from the San Francisco Bay to provide soil above the encapsulation so that a golf course could be developed where few alternatives of equal environmental value could be considered," Carls wrote. "Our members have learned a great deal from the agronomic challenges faced by this golf course. Other cities and private entities could learn from this example."

Patrick Gross, southwest director of the United States Golf Association (USGA) Green Section, has consulted on CourseCo properties for the past 11 years. In his letter of recommendation, Gross noted that Metropolitan also is the home of the Oakland Turfgrass Education Initiative, where students from inner-city schools have an opportunity for job training and exposure to the fields of horticulture and turf management.

John Briscoe, an attorney with Stoel

COURSECO IS THE FIRST GOLF INDUSTRY-RELATED BUSINESS TO WIN CALIFORNIA'S TOP ENVIRONMENTAL AWARD.

Rives, a western United States law firm that worked on the Metropolitan project, summed up the efforts of the development team at Metropolitan. "This project is an example of excellent environmental planning," he wrote in his letter of recommendation. "The effort was unique, innovative and took many years to accomplish. It sets a wonderful example for public-private partnerships."

Environmental positioning

Founded in 1989, CourseCo manages facilities in northern California that are primarily owned by municipalities or counties. The company's environmental commitment is important to clients and their communities.

"CourseCo is the only management company I know that has made a commitment to have all their courses become fully

certified in the Audubon Cooperative Sanctuary Program for Golf Courses," Gross said. Five of the 13 courses managed by CourseCo currently are fully certified.

Other examples of CourseCo environmental innovations that help meet community, environmental and industry goals include the following:

• **Crystal Springs.** Harivandi and UC collaborated with CourseCo on a five-year USGA turfgrass research project evaluating new bentgrasses in Burlingame. The research identified cultivars with water and pesticide requirements lower than those of turfgrass varieties currently used on golf course greens. "Located on the watershed for the City of San Francisco, Crystal Springs is a model for what progressive management can accomplish on a sensitive site," Harivandi wrote.

UC hosted a program at Crystal Springs in 1999 that introduced area superintendents to innovative approaches to wildlife habitat, water conservation and pest control. Gross says many projects have been implemented at the environmentally sensitive facility, including minimal use of fertilizers and pesticides, waste recycling, wildlife habitat enhancements and water-conservation programs.

Davies said CourseCo has worked to educate golfers at Crystal Springs about wildlife that lives on the course, including using displays featuring stuffed animals. In addition, brochures describe the environmental program, and Hole-View yardage books include environmental notes regarding wildlife and water consumption.

Superintendent Tim Powers, CGCS, the Northern California GCSA chapter winner of the 2002 GCSAA/Golf Digest Environmental Leaders in Golf Award (ELGA) and GCSAA's ELGA Merit award in 2003, led Crystal Springs' re-certification by Audubon International and the Wildlife Habitat Council. CourseCo also was a national winner of the Golf Digest ELGA in 1998.

• **Callippe Preserve Golf Course.** The municipal course in Pleasanton, is being developed by the city and named after an endangered butterfly, is expected to open in November. CourseCo will manage grow-in, opening and operations under a five-year management contract.

"We have over 20 environmental management plans, including three endangered species, riparian corridors, nitrogen control, ground water quality, bullfrog control, butterfly habitat, wetland mitigation, creek revegetation, specimen tree preservation and more," Davies said. "Our niche, in terms of environmental issues, is to be able to do construction that complies with stringent permit restrictions and puts additional measures in place to allow sites to meet their full potential for environmental benefits. We try to reflect our client's values. Our success has to do with how we manage these sensitive environmental issues in communities that are subject to these stringent permits."

• **Eureka Golf Course.** Davies created and leads a coalition that includes the city, county, environmental organizations, local landowners and area officials who secured \$160,000 in planning grants aimed at restoring the natural conditions of a sub-watershed of the Humboldt Bay watershed that surrounds the course. The multi-year project is designed to naturalize the creek slough, enhance plant and wildlife habitat with the creation of brackish-water habitat, encourage the return of Coho salmon and steelhead trout, and minimize siltation at the oft-flooded and environmentally sensitive course. The project shows that even low-cost courses like Eureka, which charges as little as \$6 per round, can become environmental stewards.

"A major benefit is that the project would provide better playing conditions on a course that typically floods following heavy rains," said Don Roller, Eureka Golf Course superintendent for the past 19 years. "It would also establish a brackish water habitat in the lower portions of the course and below us. By creating high-value wildlife habitat through the course, we become better environmental stewards of the land."

Davies said Eureka's success inspired another creek-restoration project as part of the reconstruction of Foxtail Golf Course, a

CourseCo-managed facility the company restored in Rohnert Park.

• **Los Lagos Golf Course.** Riparian habitat, heritage trees and endangered species were all part of the package the San Jose community wanted protected at Los Lagos, which opened in April 2002. CourseCo responded with 13 separate environmental management plans to address fertilizer and pesticide environmental concerns, while also preserving and enhancing wildlife habitat, according to Gross.

"The city of San Jose had two IPM/CHAMPs written that we had to follow," remembered Davies of Los Lagos and Rancho del Pueblo, another CourseCo-managed facility in San Jose. "We are unique in that all our courses operate under IPM-CHAMPs. It is difficult to get permits for course construction in California without one."

Los Lagos head superintendent Alan Andreasen, CGCS, said the development team re-established about three acres of native habitat, including trees and shrubs to improve wildlife habitat, and constructed a regional trail allowing people to hike and bike through the course property. In addition, 75 acres were set aside for riparian habitat—which is scarce in the San Jose area. Signage in the clubhouse and on the course informs golfers about the facility's unique features and how it benefits the environment.

"We've joined with the Wildlife Center of Silicon Valley and are in the process of using the riparian habitat as a release area for rehabilitated animals, primarily raptors," Andreasen said. "We are also meeting with the local grade school to help conduct field trips through the property that will show students how a golf course is built and display some of our environmental projects."

In the meantime, Andreasen added, the course has more than met its financial projections, hosting 70,000 rounds its first full year and an anticipated 72,000 rounds in its second season.

"What inspires me as a member of the golf course industry is that CourseCo not only talks the talk, but they walk the walk," Gross concludes. "Their commitment to sustainable environmental practices is not just window dressing, but a core value that guides their business practices. In my opinion, CourseCo is clearly a leader in this area, and I applaud their efforts to demonstrate that sustainable resource management is not only a good environmental practice, but is also a good business practice." GCN

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THE PROJECT SAVED
TAXPAYERS MILLIONS AND
GENERATES ANNUAL RENT
FOR THE CITY AND PORT
AUTHORITY.

Systematic maintenance

A PROVEN MAINTENANCE SYSTEM GIVES PGA TOURNAMENT PLAYERS CLUBS MAXIMUM EFFICIENCY AND PRODUCTIVITY

Every minute spent in planning saves four minutes in execution. If that maxim is true, the planning and forethought that Cal Roth, Director of Maintenance for the PGA Tour and its Tournament Players Club (TPC) courses has put into setting up golf course maintenance facilities saves many man-hours every day.

With nearly 25 years to hone and fine-tune his maintenance facility format, Roth has put together a formula for a smooth, efficient operation. His time-tested plans are a required element on every TPC course.

"It's been an evolutionary process," he says, "and we've found that our advanced planning makes the facilities more efficient right from the beginning, and that translates into saving both time and money."

Three building blocks

Central to the maintenance plan are three buildings to separate the various maintenance disciplines and accommodate the work.

"We like separate buildings for a couple of reasons," Roth points out. "First, it allows us to fit the facility into the space available easier than if you use one big building. It used to be very common to place the maintenance facility on whatever piece of land was available after the course, clubhouse and other facilities were positioned, so making it work efficiently was a challenge. With our system we can control the fit on a square piece of ground or on a triangular patch."

"We try to put new buildings on an acre of land, but we've done it with as little as one-half acre," adds Michael Johnson, vice president of PGA Tour Construction Services, and the man who translates Roth's ideas into finished structures. "Costs vary from region to region but land is always extremely valuable. Building codes and local regulations vary a lot, too. We've found that it can actually be less expensive to build two or three buildings on a site than trying to build just one large one that can meet all the codes and regulations. It's often easier to manage the workflow and traffic – people and machines – with more than one building, too."

Roth says any course considering expanding, remodeling or creating a new maintenance center can adopt PGA Tour's maintenance philosophy. The ultimate goal is getting people and machines in the right places at the right time with no wasted effort. Safety and security are key considerations as well.

The maintenance building

The main maintenance building is the center of activity and the most expensive to build and finish. It is equipped with heat and air-conditioning, plumbing, telephones, computers and all the finishing touches of today's modern office. It houses the office of the superintendent, assistant superintendent, managers and support staff, as well as the employee areas where they take their breaks and get their assignments.

"One of the first things I noticed was the noise – or rather the lack of it. This was a business setting, a professional's office. It didn't have the 'garage' feel that some superintendents' offices have," says Chris Hague, CGCS, superintendent at the TPC at Deere Run, near Moline, Ill. "Beyond the main offices, the building is 'zoned' into individual work areas for the spray technicians, the maintenance manager, irrigation technicians and others."

Hague is no stranger to well-organized, top-flight facilities with tournament venues such as the Baltimore Country Club, Crooked Stick Golf Club and Hazeltine National Golf Club on his resume. Yet, he's seen immediate advantages with the system.

"Small things make a big difference, and the best way to describe the layout is user friendly, especially for the technicians and mechanics," he adds. "I'm spoiled, but if I went back to another course, I'd take a lot of this organization system with me."

In addition to the offices, the maintenance building houses the equipment repair bays – at least two for an 18-hole course – the parts department, all the reel grinding equipment, small tools and related supplies, and small equipment like walk-behind greens mowers and all the hand-held power tools.

Each section has its own "room," usually outlined by walls made of chain-link fencing on metal support frames. The walls are 8- or 10-feet tall.

The design helps control the movement of people, parts and equipment. "We try to eliminate wasted steps and wasted time, so we've considered people's moves from the time they park their cars," Roth explains.

There are two main entrances, one to the staff area and one to the offices. Crew members, once they get their assignments, go into the yard right from the employee area, not by cutting through the shop. All the individual areas of specialty – parts, irrigation, small tools, chemicals and equipment for example – have separate access doors from the outside.

"Having separate access makes it easier for people to get what they need and get on with the job without traffic jams," Roth says. "The layout inside the building is kept simple. There's plenty of light and the walls double as hangers for equipment. If you want to enlarge an area, the walls are pretty easy to rearrange."

"The fenced-in areas also provide good security because it's easy to see what's going on, while resources can be kept under lock and key," he adds.

Equipment storage building

The second building is the most basic. It's designed for large equipment storage. While little more than a glorified shed, it protects the investment in machinery.

"In the south, where we don't have to deal with winter weather, the storage building is usually about 150-feet by 30-feet, with only three walls. It's a metal shell on a concrete slab. We don't have to have heat or plumbing, so that keeps the costs down. In the north, where we do have to protect against the elements, we add a fourth wall and doors, so it expands to about 150-feet by 40-feet," explains Johnson. "The size is somewhat determined by the number and size of the machines that we'll have to cover."

Outside, against one wall are six open stor-

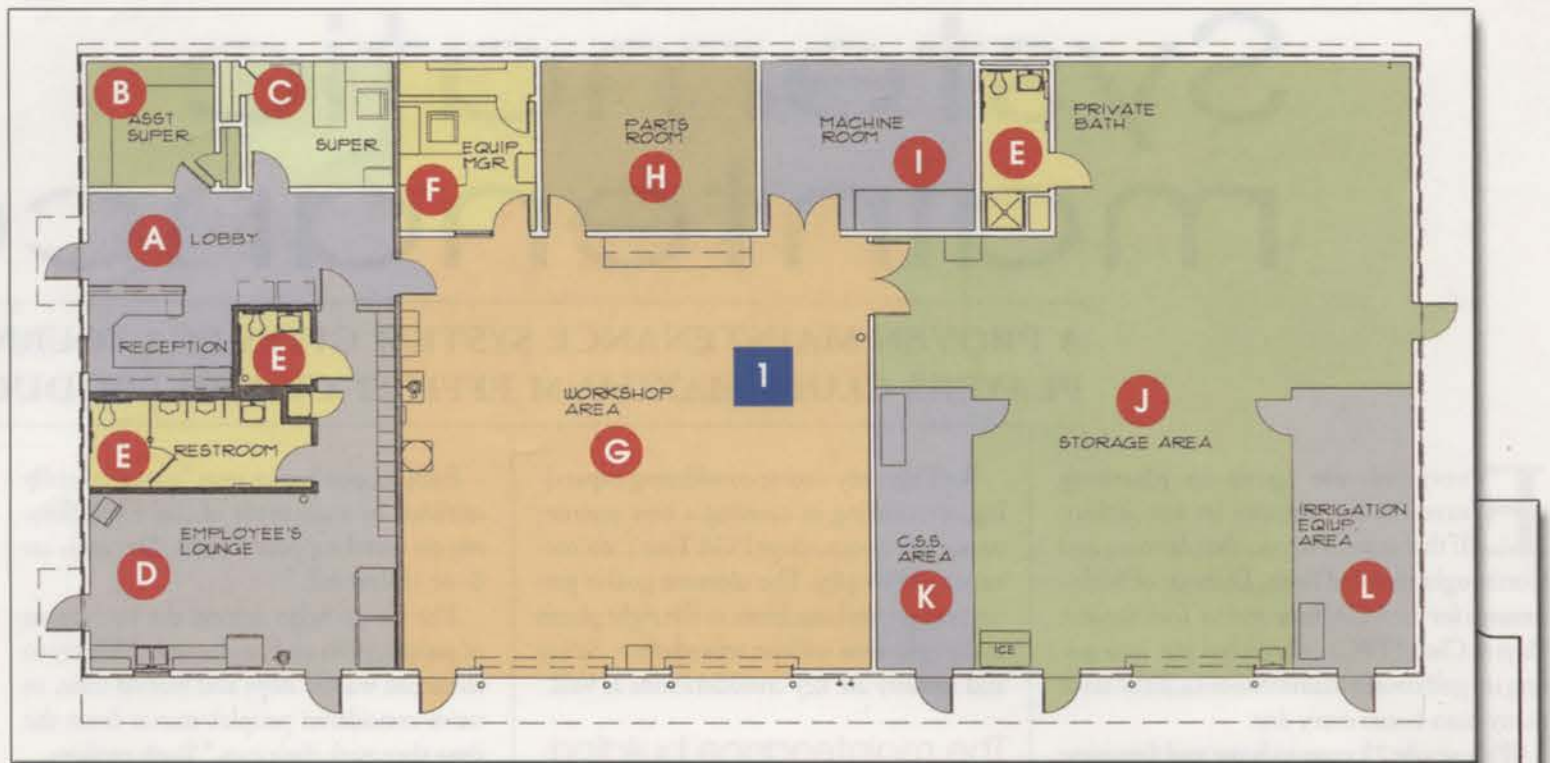
by A.D.
HORN

1. MAINTENANCE BUILDING

Designed to house a staff of 25 to 30, this 110' x 50' building separates administrative and shop functions for quiet office work and maintenance work that is grouped logically. All office areas will be carpeted and have finished walls and ceilings. The lounge, restrooms and janitorial closet floors are tiled and also have finished walls and ceilings. The office and lounge areas are air-conditioned. The building includes a computer area, janitorial closet and lockers for employees.

The shop and small equipment area floors are sealed and painted with epoxy/polymer paint. The maintenance area is heated. In the hot, dry southwest, swamp cooling will be included. The entire maintenance area uses louvered-type exhaust fans or similar outside ventilation.

Parking is located close to the building and 2-4 stalls near the entry door are reserved for visitors and vendors.



The entire building is protected by a monitored security system.

- A. Lobby/reception area is 10' x 26'
- B. Assistant superintendent office is 8' x 8'
- C. Superintendent's office is 10' x 15'
- D. Employee lounge is 26' x 14' and includes two vending machines, a kitchen countertop, kitchen sink and cabinets, a refrigerator and an independent telephone
- E. Restrooms
- F. The mechanic's/equipment manager's office is 15' x 11' and includes a window for observation of the workshop area
- G. The shop is 35' x 38' and is accessed from the outside by two 10' x 10' roll up doors
- H. Shop parts area is 12' x 15'
- I. The machine room is 15' x 19.5'
- J. The storage/small equipment area includes a private bath and is accessed from the outside by an 8' x 10' overhead door
- K. The golf course supplies storage area is 8' x 16.5'
- L. The irrigation equipment area is 22' x 12' and is accessible from the outside

2. ENVIRONMENTAL BUILDING (OPPOSITE PAGE)

3. EQUIPMENT STORAGE BUILDING

In southern climates this fully covered building is usually 30' x 150' and enclosed on three sides. In the northern climates it is 40' x 150' and fully enclosed, with 8' high x 10' wide and 10' high by 12' wide roll-up doors. Inside walls are protected with plywood or a similar material to a 6' height. No heating or cooling is required. Outside, corners of bay door openings are protected with steel bollards or guards. The area is enclosed with steel chain link fencing for security and a security system for the building is also required.

4. MATERIAL STORAGE BINS

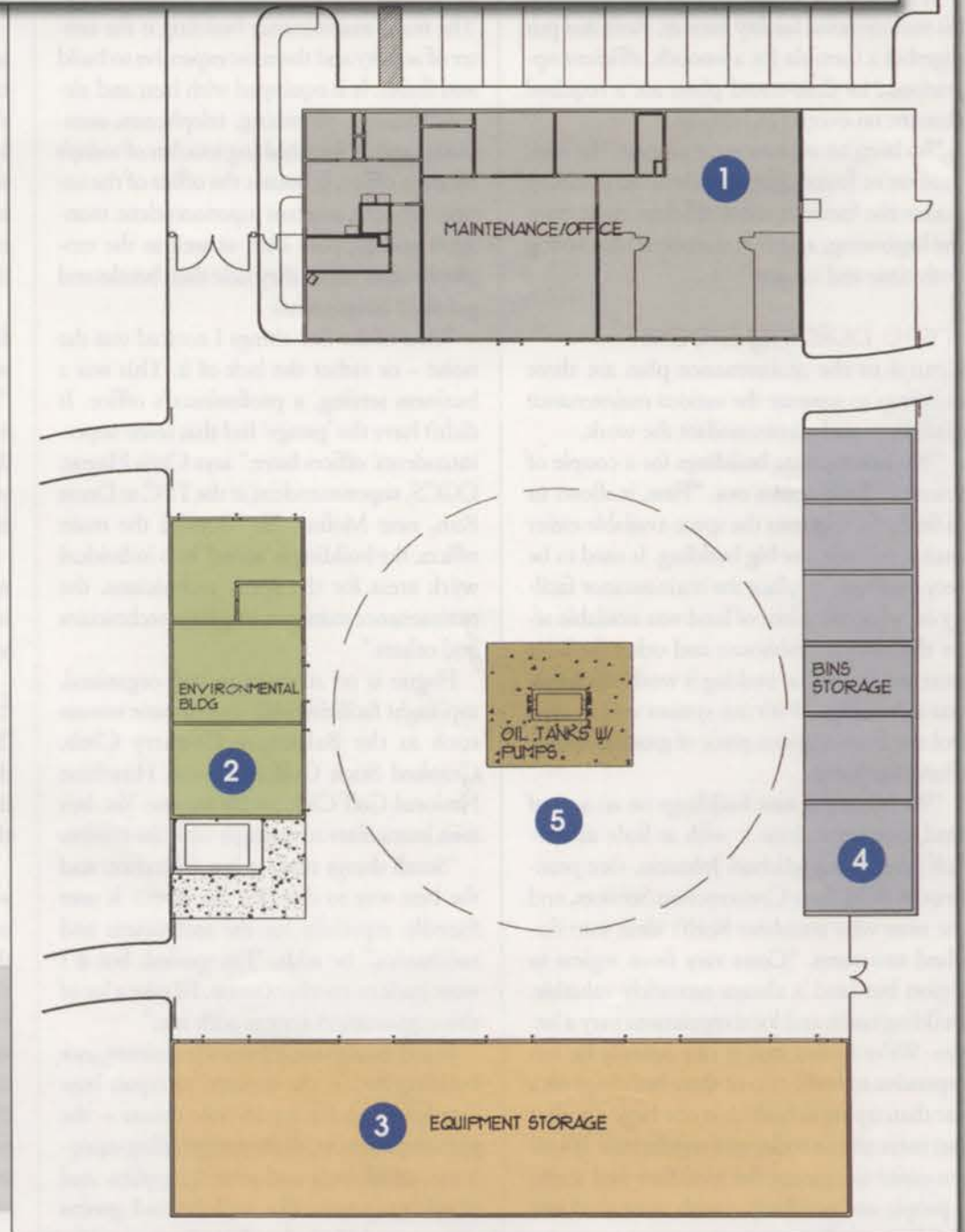
Six bins are formed with 8' high concrete block walls and a concrete base that extends 3' in front of the walls. Two bins are 20' x 25' and four are 15' x 15'.

5. FUEL STORAGE AREA

A 500-square-foot concrete pad serves as a fuel island with a minimum of two above-ground storage tanks capable of holding 500 gallons of gasoline and 500 gallons of diesel fuel. A metered pump system accommodates up to five accounts for tracking department use. Bollards or block walls are necessary to protect the fuel tanks.

TPC's ideal maintenance compound

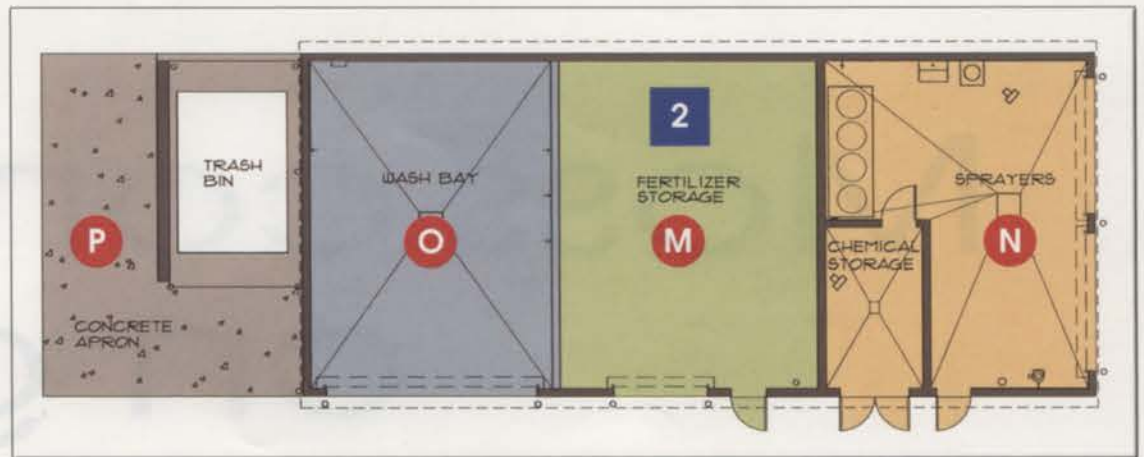
An ideal Tournament Players Club (TPC) maintenance facility is a compound consisting of (1) a maintenance building, (2) an environmental building with a waste disposal area and an equipment wash area, (3) an equipment storage building, (4) material storage bins and (5) a fuel storage area. For efficiency, safety and security, the compound can be arranged as shown. If a site does not make a compound possible, the individual buildings can be located on the course as space and needs require.



2. ENVIRONMENTAL BUILDING

This building is designed to meet EPA standards.

- M. The fertilizer storage area is usually 32' x 22' and is accessed from the outside by a 10' x 10' roll-up door.
- N. The pesticide storage facility has a separate area for pesticide storage with outside access, a storage area for two sprayers, a mix/load bay and a self-contained recycling system for rinsate. Outside access to the mix/load bay is through a 10' x 14' wide roll-up bay door. The pesticide storage room requires heating to 50 F, but no cooling. A hot water heater provides heated water for mixing pesticides, and an air compressor for tank agitation. Concrete floors are painted with an epoxy/polymer floor paint.
- O. The wash bay is a 20' x 30' concrete pad with containment curbing. The pad slopes to the center where rinsate is captured and filtered for grass clippings, debris, oil and water.
- P. A waste disposal area holds a 30-cubic-yard low-profile waste receptacle that is usually located on a concrete slab with a 3' or 4' high wall to separate it from a concrete slab dumping site that can be used for scooping up debris with a front-end loader.



age bins for raw materials such as sand, topsoil and mulch.

Environmental building

Building three is the most unique, serving as the "mix/load" building where chemicals, fertilizers and related equipment are kept. With more and more state, local and federal regulations dictating how chemicals must be stored, handled and used, this building can become the focal point of the facility – and it's the one many superintendents would add to their courses, if given the budget.

"We provide heat and plumbing in this building because some chemicals have to be stored and mixed at specific temperatures, and this is also where all the mixing and clean up is done," Roth explains.

The "mix/load" building houses all the spraying equipment – usually room for at least two spray rigs – and all the loading, mixing and cleaning facilities. A drive-through wash bay is a standard feature.

"Two relatively small details are particularly important" adds Johnson. "We use removable drains in the wash-out area so any grass clippings and other debris can be dug out to prevent clogs and overflows. And, we install a small hot water heater so we can mix warm water with the chemicals. On cold mornings, that helps them dissolve more evenly for a more efficient mix."

Local or state regulations usually dictate how to handle chemicals, but increasingly these codes mandate a separate building for pesticides. To comply with standards, or to exceed them, Roth and Johnson say this facility includes a containment curb or lip around the entire area – at a minimum a 4-inch concrete curb around the entire chemical area to contain any accidental spills.

"We also recommend using metal shelves rather than wooden ones," Roth adds. "Wood can absorb chemicals and moisture, while metal will not. But you have to be careful

around metal, too. Some chemicals can be corrosive, so you have to keep the shelves clean. You also may have to repair, sandblast and repaint, and replace them eventually, but not as often as ones made of wood."

The concept of the environmentally friendly building is another that can be adapted to most courses.

"The environmental building is one of the smartest parts of the whole organizational plan," says Pat Franklin, CGCS, from The Tournament Club of Iowa, near Des Moines.

"When I was first introduced to it, I thought it might be excessive and not really necessary," he says. "But once I saw how it worked and what it can mean to the facility, it made a believer out of me."

Franklin stepped into his role in Iowa when the course was in the initial design stages, coming to his post after serving as superintendent at both the TPC of the Twin Cities (Minneapolis/St. Paul) in Minnesota and at the TPC at Deere Run.

"This building is set up not only to be efficient for the staff, but to protect the environment and everything around it," he adds. "I think of it as being a 'neighborly' building – it's safe, efficient and good for community relations. This kind of attention to detail not only shows that we know what we're doing, but that we're aware of the impact we can have on the community."

The bottom line for superintendents is an emphasis on organization.

"It's the overall organization that sticks with you," Franklin continues. "Everything has a place and everything is in its place. When you get into that habit, and your people get into that habit, you do eliminate wasted time and wasted effort. At my new course, the staff has really taken to the idea and they have found it has made them more efficient – fewer wasted movements, less time preparing for a job and more time getting the job done right."

Planning, from the beginning, for every aspect of a superintendent's day has led to facilities that raise the overall quality and performance of the staff to that magic "next level." Thinking in terms of specific disciplines within the job, and making each as efficient as possible has led to savings in time and money. In today's budget-crunching atmosphere, that's critical to success. And these concepts can be adapted to an existing facility, put into a remodeling plan or imprinted on a new design. GCN

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Improving a single maintenance building

It's possible to gain many of the advantages of Roth's system within a single building. The key is to bring people and machines together in the right place at the right time, eliminating wasted actions, making the whole operation safer and more secure. To accomplish this, consider the following:

- Offices for the superintendent, assistants, managers and support staff should be isolated from noise and as many distractions as possible.
- Consider "zoning" your work areas for various specialties – areas for your spray technicians, your irrigation technicians, your mechanics, and all the tools each needs on a daily basis. These areas can be divided by partitions, or marked off by simply painting different colored lines on the floors with specified walkways.
- Organize by need – put parts and mechanics' tools close at hand and centralized so people aren't zigzagging through the shop.
- Divide space creatively using chain link-style wall sections for secure storage.
- Use logical parking arrangements for equipment to get the day off to a smooth start, rather than an unplanned "first-in, last-out" scenario.
- Plan pesticide storage and handling areas to improve safety and handling, and to meet federal, state and local regulations. Store all pesticides within an area having special drains, ventilation and containment curbing to protect against leaks or spills.

By observing your traffic patterns by function, and by documenting where work bottlenecks occur, you can increase efficiency in an existing maintenance facility. While separating functions into dedicated buildings is an ideal situation, any maintenance facility can be improved with planning and some investment.

Moss control on greens

IS HOPE ON THE HORIZON FOR THIS EPIDEMIC PROBLEM?

by
KEVIN
J. ROSS,
CGCS

Moss control on golf greens has moved to the forefront of golf course management concerns in recent years. Many have now considered this problem an epidemic. There are many theories on how moss has become such a problem and the various control options available. One thing is certain when discussing moss, very few can totally agree on why it is suddenly so prevalent and how to control it.

The moss plant affecting greens has been identified as Silvery Thread moss or *Bryum argenteum* (although this is still

being debated). Moss is classified as a bryophyte, which has no roots, no vascular system, and reproduces vegetatively and/or by spores. Again, some researchers are debating whether or not moss can actually reproduce by spores. Chemical control is difficult because moss lacks the vascular system necessary to translocate an active ingredient throughout the plant.

Moss also has the physiological ability to endure extensive drying periods, and then regenerate. Some literature states moss can dry out as much as 80 percent for a period of two years and still remain viable. Each



Drenching moss with diluted dishwashing soap provided inconsistent results and is an illegal use of the product.

Photo: Kevin Ross

plant also has the ability to produce some 50 million spores.

Emerging problem

The big question is: Why has moss become such a problem recently? There is no sure answer to this question, only theories. The biggest single factor may be the disappearance of a number of older snow mold fungicides. Some believe these materials delivered a moss control side effect due to their metals content, such as mercury, in the formulations. Some believe the use of these materials over time provided an indirect control for moss.

One factor most agree with is that the increasing demand for low cutting heights to achieve faster green speed contributes to the problem. Matt Nelson of the USGA Green Section has noted, "I've never had anyone tell me that they have a moss problem on collars, tees, or fairways." At the same time, Nelson adds, "In reality, we can't cut our greens at 3/16 of an inch in today's golf climate, although this might solve the moss problem."

In achieving faster green speed, superintendents are also being forced to alter their fertilization practices by reducing nitrogen inputs. Low nitrogen fertilization reduces the vigor and density of greens turfgrass, which in turn allows easier invasion and competition by moss.

From a cultural practice standpoint, golf course superintendents have their hands tied. Because of the need to maintain green speed, inputs that could solve or help solve the problem – such as raising the cutting height and increasing nitrogen inputs – are not feasible.

This leaves chemical control as the primary option to combat an increasing moss problem. In attempts to find a silver bullet solution, superintendents have tried a wide variety of materials. Remedies have included iron sulfate, dishwashing soap, baking soda and others. Chemical companies have also brought products to the market, all of which have offered varied success.

Some of the first moss research was initiated in 1997 by Frank Dobie, superintendent of the Sharon Country Club, in Sharon, Pa. Dobie created a "Moss Network" of superintendents to deal with the ever-increasing moss problem and develop control options. He teamed with superintendents from neighboring states and tried various products for moss control. The "Moss Network" considered Ultra Dawn dishwashing soap, iron sulfate, ferrous ammonium sulfate and DeMoss. Unfortunately, the most effective option was de-

termined to be Ultra Dawn dishwashing soap. They found that 4 ounces of Ultra Dawn per gallon of water, drenching the moss on sunny days with temperatures between 60-80 F resulted in good control.

At that time Ultra Dawn seemed promising as the method of choice for control. Although an illegal use of the product – it is not labeled for use to control moss – a number of superintendents heard from others that it was effective and gave it a try. However, as more tried using the detergent, it failed to be the answer. The results were hit-or-miss and there were some drawbacks. It seemed to work one day but not the next, weather conditions being a critical factor, so superintendents began to scratch their heads once again.

Next came university research, most initiated in 1997-98. Various studies were conducted by Oregon State, Cornell, North Carolina State, Pace Consulting and others. Products evaluated for control including Ultra Dawn, Daconil, terracyte, copper sulfate, zinc sulfate, iron materials, copper hydroxide (Junction), fatty acid soaps (Moss-Aside) and others. The results to date show no conclusive control. Some products that showed promise at one site, completely failed at another. For example, Wendy Gelernter, Ph.D. and Larry Stowell, Ph.D. at Pace Consulting in San Diego, achieved good results with the use of Daconil and Ultra Dawn, while these products performed poorly at other sites. The research, although varied, also indicated that moss continued to reappear with time, under all control measures.

The latest and most promising news comes from work performed by Dr. Arthur P. Weber, published in the July/August 2003 edition of the *USGA Green Section Record*. The work focused on the relationship between metals and the destruction of moss chlorophyll. Weber found that Mercury was highly effective in its toxicity to moss chlorophyll but was not used in his work because of environmental concerns. This finding alone indicates the strongest relationship to date for the theory of control by the former mercury-based fungicides. It also could give credence to the fact that maybe lower cutting heights for greens is not as big a factor as the elimination of these fungicides.

Weber's research found that the metal silver has some of the same characteristics of mercury in destroying moss chlorophyll and re-



Photo: Kevin Ross

sulting in death of the plant. He then conducted research in conjunction with Thomas O. McAvoy, CGCS, superintendent at the Old Westbury Golf Club in New York. They conducted experimental applications of an aqueous silver nitrate solution on bentgrass/*Poa annua* greens. Their work indicated that under all environmental conditions, they were able to successfully eliminate moss infestations without any reemergence and with only a single application.

This may be the most exciting development in moss control, but where does this leave the superintendent anxious to eliminate a moss problem? Obviously, no one should go out and start spraying silver nitrate on their greens without the necessary research, product development and registration. However, this research does show promise for a true *silver* bullet control for what has become a major problem. GCN

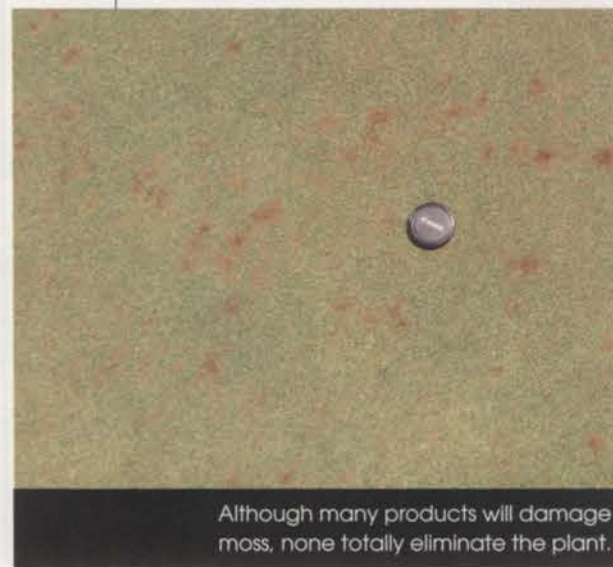


Photo: Kevin Ross

SUMMARY

Development of an effective soil microbial enhancer and organic fertilizer

DATA

2002 (part of field dissertation involving extensive field research)

SOURCE

William Torello, Ph. D, professor Emeritus, University of Massachusetts, Amherst and vice president for research and development, EcoOrganics, Inc.

MORE INFORMATION

wtorello@ecoorganicsfertilizer.com

Commercially competitive organic fertilizer/soil microbial enhancer

One of the significant problems associated with organic turfgrass management programs has been the inability to develop and maintain the needed high levels of overall turf quality and aggressiveness (recuperative potential) when using natural organic fertilizers. The literature published regarding the positive soil structure/building and disease reduction effects of organic fertilizers and amendments on professional turf is voluminous, as well as the negative aspects of usage volumes, mower/roller pickup, bulk storage, foul smell, seasonal effectiveness and cost. In view of these disadvantages, the most desirable natural organic fertilizer/amendment should include: The highest level of *natural organic* nitrogen available; the lowest C/N ratio possible (preferably under 4 for more rapid microbial breakdown and nitrogen availability); easy application (preferably a liquid soluble/flowable spray application to avoid particle pickup during mowing and to enhance response time or a very fine greens grade granular); and high microbial populations and activities after application. EcoOrganics, Inc. has developed and tested a line of soybean-based natural organic materials. The central product was named "SoylMicrobial" due to the very rapid and extensive enhancement of soil microbial populations. It is formulated as a wettable powder which forms a suspension for spray applications. It has one of the highest natural organic nitrogen levels in the industry (13-2-1) allowing, for the first time, the ability for spray-applied spoon-feeding. It is a 100 percent natural organic de-

rived through a complex extraction of soybeans – not a by-product of the meat/fowl industry. Use of a totally food-grade product eliminates the foul smell, and a no "salt index" allows for mid-summer applications. Importantly, research shows it provides rapid and extensive enhancement of soil microbial populations. Turf quality ratings for USGA greens profiles showed no observable differences between SoylMicrobial and Inorganic treatments indicating, for the first time, that a 100 percent natural organic material can perform equally as well as an inorganic material during a nitrogen "spoon feeding" program, particularly to USGA sand greens (Fig. 1). Applications of SoylMicrobial result in extremely rapid and large increases in existing soil microbial populations compared to Milorganite and inorganic nitrogen treatments (Fig. 2). This rapid response is again due to the low C/N ratio of the material and application as a flowable liquid spray (flowable powder) which carries the material into the soil more effectively, as well as having a much larger surface area for microbial activity. These results suggest that the elevated microbial activities enhance degradation of native soil organic matter as well as overlying mat and thatch. Research is now in progress to further quantify these results in addition to potential weed control characteristics. A roster of six different flowable, greens grade and coarser fairway and rough granular products should reduce disease and thatch pressures, result in more rapid increases in color and density and become components of strong IPM programs.

Figure 1. Enhancement of microbial populations in response to Soy/Microbial, Inorganic and Milorganite applications on a USGA sand green profile

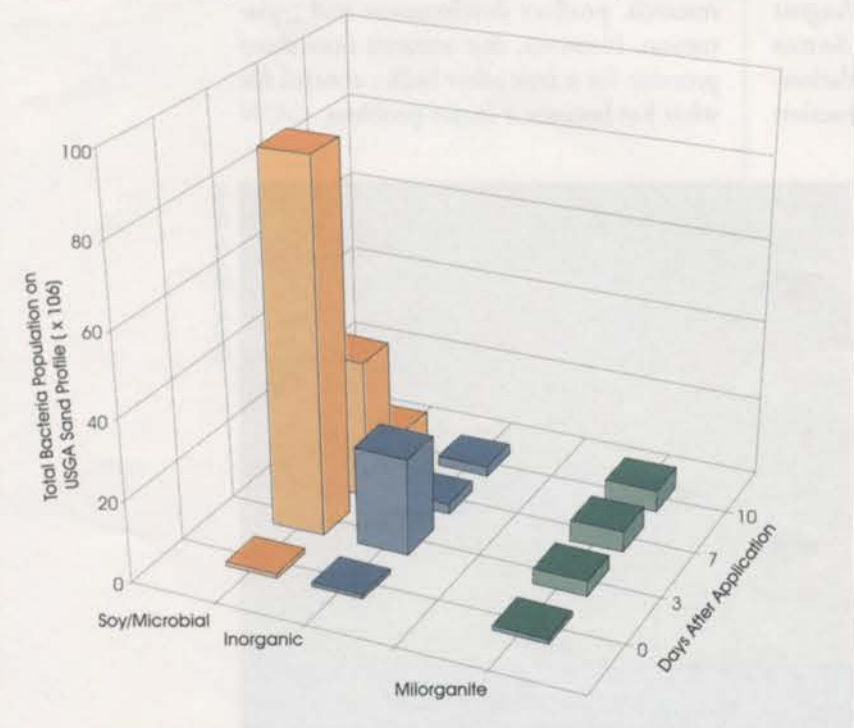
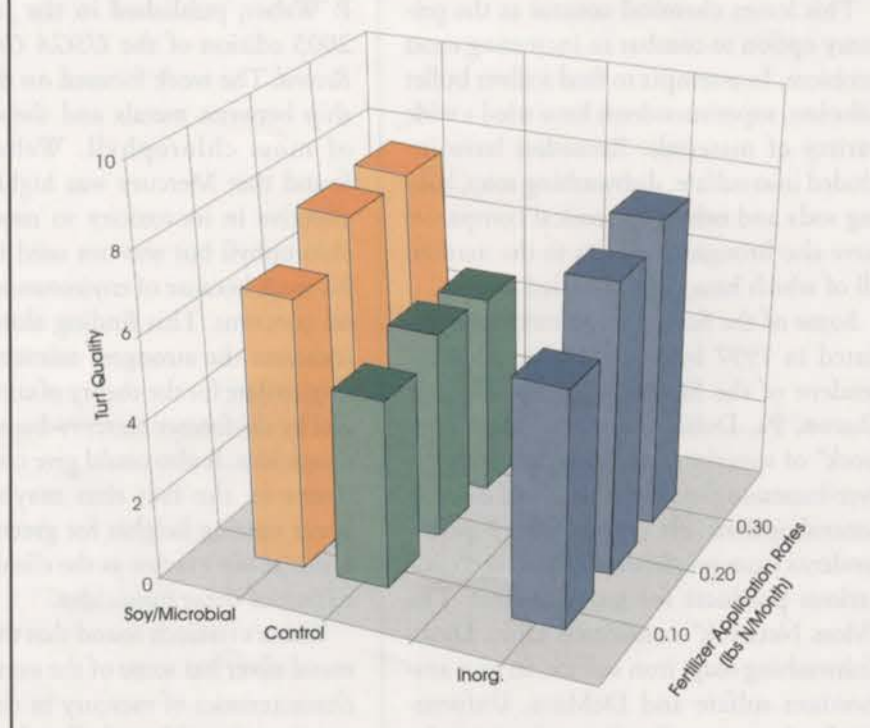


Figure 2. Seasonal Turf Quality comparison of Soy/Microbial with Inorganic fertilizer on a silt-loam native soil.



SUMMARY

Ground rubber as a drainage layer medium under greens

DATA

2001-2004. Research site near University Ridge golf course, Madison, Wis.

SOURCE

Jim K. Park, Ph.D., professor of civil and environmental engineering

MORE INFORMATION

jkpark@wisc.edu

Recycled rubber as a drainage layer medium under greens

Research has led to the development of an innovative technology to remove toxic compounds in landfills by replacing gravels in the leachate collection system with shredded tires, which have significant capability to adsorb toxic compounds. To see if this research could have possible use on golf course greens, confetti-sized pieces of scrap tires (ground rubber) were placed in 4-inch thick layers between the layers of sand, peat root mix and subgrades commonly used beneath golf greens. The greens were then soaked with water spiked with nitrate. The results showed that fields with a 10-centimeter layer of tire chips released about 58 percent less nitrate than samples without rubber layers (crumb rubber used in the sublayer compared with pea gravel). Nor was pH of infiltrated water altered with the crumb rubber sublayer addition. In addition, the health of the plots suggests the rubber layers did not alter the turfgrass quality or growth in terms of quality, color or density of turfgrass among three configurations (see Table 1). While the research focused on nitrates, because many golf greens are built near groundwater level or wetlands, it is believed ground rubber would also adsorb a range of pesticides and fertilizers as demonstrated in laboratory-scale experiments. The layer of ground rubber under the greens and fairways in golf courses would

also lengthen the playing time due to less freezing and a longer growth period because ground rubber has eight times better insulation value than gravel. Further benefits could include less compaction due to the resilient property of ground tires and easier construction due to the light weight of ground tires in comparison to gravels. Since ground rubber is 1/3 to 1/2 times the weight of soil, it could be used as backfill material for greens constructed in soft foundations and the construction cost is cheaper, although the cost of the material may be higher than for gravels. The research indicates that in areas where the sub-grade soils are porous this technology could prevent groundwater from potential contamination. An added environmental benefit could be a useful market for the 280 million scrap tires generated annually in the United States. While the research was not directed at a means to dispose of scrap tires, but rather to make golf courses environmentally safer and friendlier, the researcher estimates that a rubber layer under the greens for just one 18-hole golf course could require up to 72,000 scrap tires and over 1 million tires if also installed in fairways and drainage systems. In addition to this, ground rubber-based products are already being used on golf courses as a topdressing to improve traffic tolerance and as a soil amendment to improve porosity. GCN

Table 1

Average Turfgrass Quality, Color, and Density for Three Configurations

Treatment	Quality		Color		Density	
	range ^a				0-100%	
	16-Jul	28-Sep	16-Jul	28-Sep	16-Jul	28-Sep
USGA ^a	4.8	6.0	6.0	6.0	93.3	100.0
Rubber Intermediate Layer ^b	5.5	5.7	6.0	6.7	93.3	100.0
Rubber Drainage Layer ^c	5.2	6.0	5.7	6.2	96.7	100.0
Least significant difference (P < 0.05)	ns ^e	ns	ns	ns	ns	ns

^aUnited States Golf Association sand-based golf course putting green profile.

^bFine-ground rubber produced by Tire Grinder, Aurora, IL.

^cCoarse-ground rubber produced by Tire Grinders, Aurora, IL.

^dTurf quality and color were rated visually on a one (poor) to nine (best) scale (six acceptable).

^ens = not significant.



Photo: Jacobsen

Jacobsen's E-Walk all-electric walking greens mower generates no more than a whisper of noise to avoid disturbing golf course residents and enable early-morning mowing.

New greens mowers go low ...and do so much more

MANUFACTURERS ADDRESS MOWER PERFORMANCE AND PLAY ISSUES

It's a fact that golfers assume another personality when the topic is green speed. It doesn't matter that height of cut is only one factor that affects the speed of a green. According to this group, low is never low enough. All that matters is double digits on the stimp meter.

As a result, manufacturers are constantly challenged to design mowers that can drop the height of cut to levels that would have killed grass only a few years ago. While 1/4

inch was the standard for a long time, today 1/8 inch is probably the average. It's not unusual for some courses to dip beneath that mark.

The expectations for greens mowers get tougher for other reasons. To meet golfer demand, golf course architects are building more contoured greens, which call for mowers that will float over undulations to reduce scalping. Then there's the environmental factor. Many municipalities are imposing noise

restrictions in residential areas. This particularly affects golf courses surrounded by homes.

Thankfully, the ability to provide consistent, playable greens has to a great degree been satisfied by today's line of greens mowers. To find out how manufacturers are addressing these issues, *Golf Course News* contacted major manufacturers and superintendents who are using the latest innovations in greens mowers.

Toro Flex 21 answers the call on contoured greens

It takes a capable piece of equipment to mow greens at 1/8 inch or lower, especially if they are contoured. The Toro Flex 21 was designed to support the agronomic demands of greens cut to 1/16 inch and the increasing demands on today's superintendents who are expected to achieve that height.

The Flex 21 features a unique flexible cutting unit, specially designed for undulating greens and ultradwarf grasses. The innovative cutting unit flexes from side to side around the bedknife centerline, as well as forward and backward around the reel centerline. The flexible cutting mechanism is separate from the traction unit to further ensure crisp, tight mowing at the desired height with less scalping.

A California superintendent says the Flex 21 gives him the ability to push the mowing envelope.

"It's definitely given me a measurable difference on taking the greens down," says Brian Hardin of The Palms Golf Club in La Quinta, Calif.

"Our caliber of player really likes fast, challenging greens. I was sneaking under 1/8 inch and wanted something that didn't scalp. I put the Flex 21 on one of my greens with a really gnarly slope, and it took it fine. It's definitely following the contours better than a stationary unit. I haven't had any scalp problems."

Toro riding mowers feature new cutting units

Toro took its riding greens mowers to another level with the introduction of the dual-point adjust Greensmaster cutting unit. Features include:

- Lower height of cut to 1/16 inch
- Superior quality of cut at all heights
- Sealed bearings to eliminate greasing
- Simplified adjustment
- Greater rigidity to eliminate squaring-up problems
- Compatibility with all current and previous units

This new cutting unit is available in 8- or 11-blade reels. It replaces all 4-bolt and single point adjustment units in favor of the dual point adjustment proven on the Greensmaster 1000.

The new cutting unit impressed Pete Peterson, superintendent of Riverbend Golf Complex, Kent, Wash.

"We mow down to a little over 1/10 inch," he says. "When you cut that short you're going to notice any imperfections or misadjustments. These units hold adjustments better. Everything just seems to be a little tighter, a little better designed."

Superintendent Steve Kealy of Glendale Country Club, also in Washington, praises the Greenmaster units.

"They performed like a walking greens mower," he says. "The cut was more uniform, and it seemed like the units floated better over undulations with no scalping. The quality of cut was very high, and we were mowing down to 0.110 inch, which is pretty low."

Deere walk-behinds boast consistent cutting height

John Deere Golf and Turf One Source product manager Tracy Lanier says one of the advantages of the manufacturer's walk-behind greens mowers is their ability to deliver a consistent height of cut.

"Our 18-inch 180B walk mower is the ideal width for closely following green contours," he says. "The reels don't ride up and down at the ends like some flex mowers, which can result in an uneven cut. The mower's true 18-inch frame allows the operator to follow cut lines and overlap with more accuracy."

Other features of John Deere walk-behind mowers are designed with safety and operator comfort in mind. The operator-presence safety system is engaged when the handle is depressed.

"When the operator lets go," Lanier says, "wheel traction is disengaged and the cutting reels stop. This can be important early in the morning when the grass is covered with dew and the operator could slip while making turns."

Sound reduction features include high impact-resistant polymer chain covers, which also limit rust and dents, and a larger muffler. A drum drive and oil drain trough simplify maintenance.

John Deere's riding greens mowers have also been improved. One of the most important features on the 2500A triplex is the patented offset cutting units, especially critical on daily cleanup passes. The mower can move clockwise one day and counterclockwise the next and the wheel pattern will not be in the same track. This greatly reduces the "triplex ring" associated with this operation.

For operator comfort, the command arm on the 2500A triplex puts the key switch, mow switch, throttle lever and raise/lower lever conveniently at the operator's fingertips. This riding mower also has tilt steering and a two-foot-pedal system for forward and reverse.

"One of the keys to all our reel mowers," Lanier says, "is the commonality of parts and adjustments. On a 7-blade reel, for example, it doesn't matter if it is used for a fairway mower or a 2500A for mowing approaches. The parts are the same and there is the same easy adjustment on top of the reel."



One of the most important features on John Deere's 2500 triplex riding greens mower is the patented offset cutting units, especially critical on daily cleanup passes.

Photo: John Deere

Engine options for triplex electric reel greens mowers

John Deere continues to place special emphasis on technological advancement. This year the 2500E triplex electric reel greens mower is being produced for limited distribution, with full production expected in 2005.

Equipped with two engine options, the 2500E gas model offers an 18-hp, 4-cycle Kawasaki V-Twin engine, while an 18-hp 3-cylinder John Deere Series 220 powers the diesel model. However, reel circuits are all electric, supplied with power from the engine through an alternator.

"When developing the 2500E," Lanier says, "engineers focused on a growing concern of superintendents—hydraulic leaks that burn golf course greens. With the new electric reel motors, John Deere has eliminated more than 100 leak points at the reel circuit, while still providing superior cut quality and the power required to run various attachments."

Additionally, engineers equipped the 2500E with verticutting capability, providing golf courses with increased productivity from one machine.

Jacobsen's "floating cutting reel" takes contours

Jacobsen's Tournament Cut-22 floating-reel walking greens mower is the solution to several issues for director of golf course operations Chuck Green at Sage Valley Golf Club, Graniteville, S.C.

"We needed a mower with a floating head



John Deere's 18-inch 180B walk mower is the ideal width for closely following green contours. The reels don't ride up and down at the ends like some flex mowers, which can result in an uneven cut.

for our contoured greens," he says, "and the Tournament Cut-22 works great for us. This mower is more gentle on cleanup passes because the reel floats over steep inclines and roll offs. It has solved a number of our scalping issues. We're planning on acquiring additional Tournament Cut-22s to mow our tees."

The Tournament Cut-22 features turf-hugging, fully floating cutting reels with beltless, direct-drive to the cutting reel and separate traction drum. The mower has a narrow, 22-inch cutting width to better follow green contours.

This unique and balanced "floating cutting reel" design separates and unloads the weight of the rear traction wheel/power source from the suspended floating cutting reel. This enables the suspended reel to move up/down, front/back and left/right as it "floats" over uneven turf to avoid scalping and deliver a more even cut on undulating greens.

Mower is a hit at 2003 PGA Championship

The Tournament Cut-22 was used at the 2003 PGA Championship at Oak Hill Country Club in Rochester, N.Y. The mower was used to manicure fairways, walk areas, tees and greens. Able to follow ground contours precisely, the Tournament Cut-22 created the visual effect of apparently seamless greens and approaches.

"We were really glad we had the Tournament Cut-22 greens mower," says Paul Latshaw, then Oak Hill's manager of golf courses and grounds. "It let us give approaches and walk areas an extremely fine finish. We even used them to cut the greens on our other

course when they weren't mowing approaches during the tournament."

All-electric walk mower ends oil and fluid concerns

Responding to environmental and noise issues, Jacobsen's E-Walk all-electric walking greens mower uses no oil, no hydraulic fluids and has no emissions. It delivers a quality cut while generating little more than a whisper of noise to avoid disturbing golf course residents and enabling early-morning turf care.

But this mower has another benefit, which was demonstrated last year at the PGA Tour Memorial Tournament at Muirfield Village Golf Club in Dublin, Ohio. The E-Walk actually increased green speed without lowering height of cut.

Mike McBride, who was Muirfield's superintendent at the time says, "We calculated that the E-Walk, with its higher frequency of clip, would give us the same finish and green speed without having to drastically lower the height of cut.

"When we tested the E-Walk we used the same walk speed we normally do, but with reel speed set to give a higher frequency of clip. When we finished single-cutting the greens we had 30 percent more clippings mowing with the E-Walk than with our other mowers. That meant we could get an improved quality of cut and the same speed on the greens without putting additional stress

on our newly planted grass."

Clip frequency that is independent of walk speed

The E-Walk is unique among walking greens mowers because the frequency of clip is independent of the mower's walk speed. This is accomplished by using a patent-pending electrical control system that has two separate electric motors and two separate speed circuits. One motor and speed controller powers the drive drum and is used to control walk speed. The other motor and speed control deliver power directly to the reel and allow the operator to adjust the frequency of clip. Because the speed of the reel can be set independently of the speed of the traction drum, a unique phenomenon is produced. As walk speed slows, the number of clips per inch increases. The result is a smoother finish and faster green without stressing the plant.

During the Memorial, the Jacobsen E-Walk allowed McBride and his crew to increase green speed without severely lowering the height of cut.

"Jack Nicklaus likes the greens to be fast during the tournament and he was very pleased with the results we got from the E-Walk," McBride says. "Our greens were faster than the previous year, even though the height of cut was actually higher. In addition, this mower produces no emissions and has no fluids to leak or fuel to spill. And, it's so quiet." GCN



Toro's Flex 21 features a unique flexible cutting unit, specially designed for undulating greens and ultradwarf.



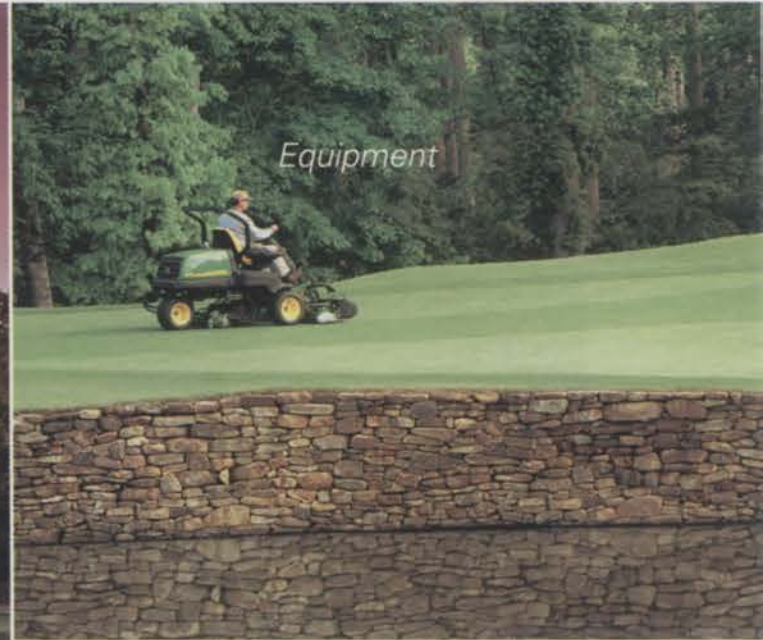
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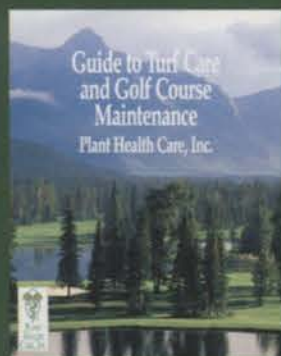
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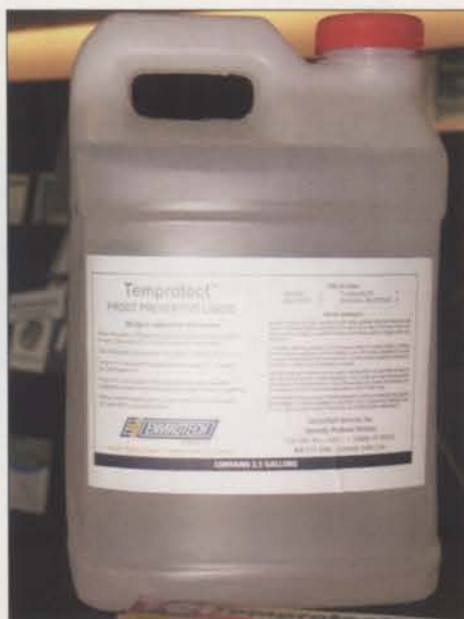
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Dakota Turf Contractor Dump Box

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 - Both models feature automatic tailgate, jack stand, A-frame construction, 4-wheel walking beam axles
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National Turfgrass Research Initiative

It is impossible to say enough good things about turfgrass. It cools the environment, cleanses the air, protects soil from erosion, filters water, reduces sports injuries, contributes to the value of residential and commercial properties and supports industries that include golf, lawn care, seed and sod production, parks, athletics and more.

More than 50 million acres in the U.S. are covered by turfgrass – a \$40 billion annual business that is growing rapidly. Meeting future needs will require research to improve turfgrasses and the way they are managed. Surprisingly, essentially no federal support has been directed for turfgrass research, even though it is recognized as a segment of U.S. agriculture.

New turfgrass research would benefit the air, water, soils, fish, wildlife and our lifestyle needs. An effort is underway to win \$5.4 million in federal funding in Fiscal Year 2005/06 to fund 12 turfgrass research positions. This is the first phase of a \$32.4 million request for dedicated turfgrass research by the National Turfgrass Research Initiative (NTRI). Created as a cooperative effort of the turfgrass industry and USDA Agricultural Research Service (USDA-ARS), NTRI has identified six areas in which turfgrass research is needed. With federal funding, USDA-ARS will coordinate research by government agencies, universities and private organizations. The National Turfgrass Evaluation Program (NTEP), the United States Golf Association, the Golf Course Superintendents Association of America, the Turfgrass Producers International, the Professional Lawn Care Association of America and the Irrigation Association all support NTRI.

Individuals may contact their federal legislators to voice support for NTRI's funding request. For more information, contact Kevin Morris, executive director of NTEP at kmorris@ntep.org, or visit www.turfinitiative.org or www.turfresearch.org.

>> Research to improve water management strategies and practices

The goal is to increase the understanding of turfgrass water use, improve management of it, and evaluate the use of non-potable water sources on turfgrass and the environment.

Long-term funding requested: \$5.85 million

>> Research to collect, enhance and preserve turfgrass germplasm

Goal: Collect, evaluate and preserve valuable turfgrass germplasm to increase the understanding of turfgrass biology and genetic systems for stress tolerance, and improve turfgrass stress tolerance through genetic improvement.

Long-term funding requested: \$5.4 million

>> Research to improve pest management practices

Increase understanding of the life cycle and biology of fungal, insect, weed and vertebrate pests. Refine the use of Integrated Pest Management (IPM) and investigate biological control methods.

Long-term funding requested: \$5.4 million

>> Research to understand and improve the role of turfgrass in the environment

Study and define the environmental impact of turfgrass and turfgrass management techniques, including the role of turf systems at the watershed and ecosystem level. Evaluate and develop management strategies and technologies to enhance the environmental quality of turfgrass systems.

Long-term funding requested: \$6.3 million

>> Research to enhance soil and soil management practices

Overcome soil limitations to turf production, establishment and use. Investigate the potential of using agricultural and industrial by-products for turf applications.

Long-term funding requested: \$4.5 million

>> Research to develop integrated turf management systems

Develop economic-based integrated turf management tools to enhance environmental quality. Develop decision tools for integrated turf management practices.

Long-term funding requested: \$4.95 million



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