

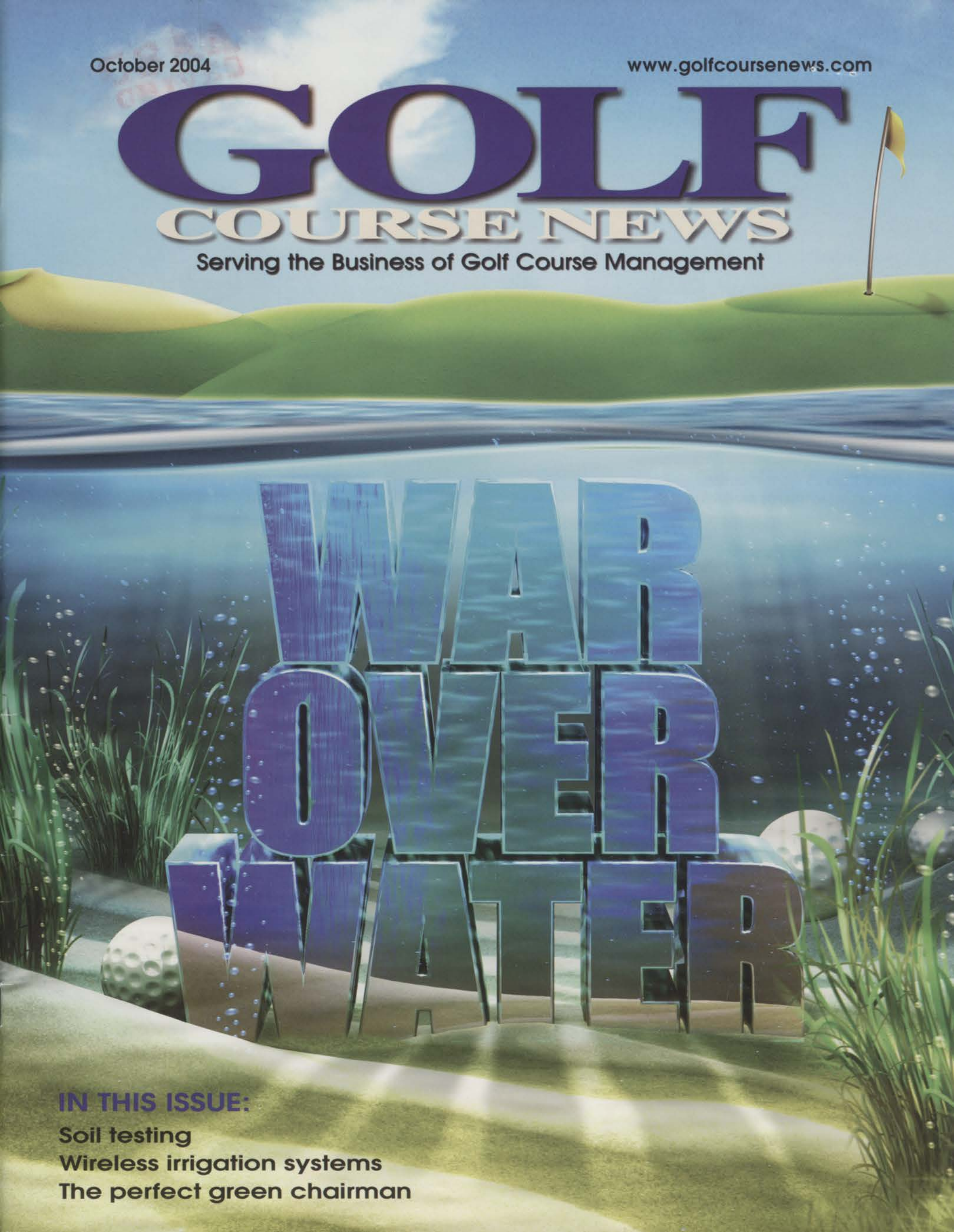
October 2004

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GOLF

COURSE NEWS

Serving the Business of Golf Course Management



WAR OVER WATER

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Soil testing

Wireless irrigation systems

The perfect green chairman

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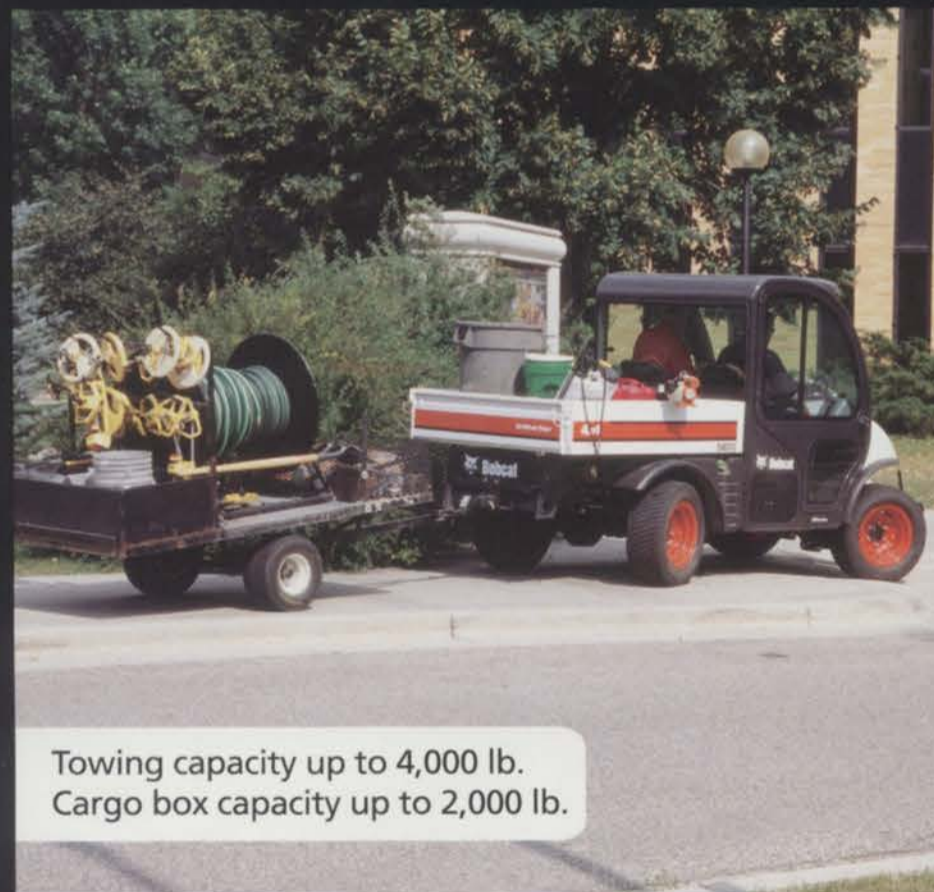
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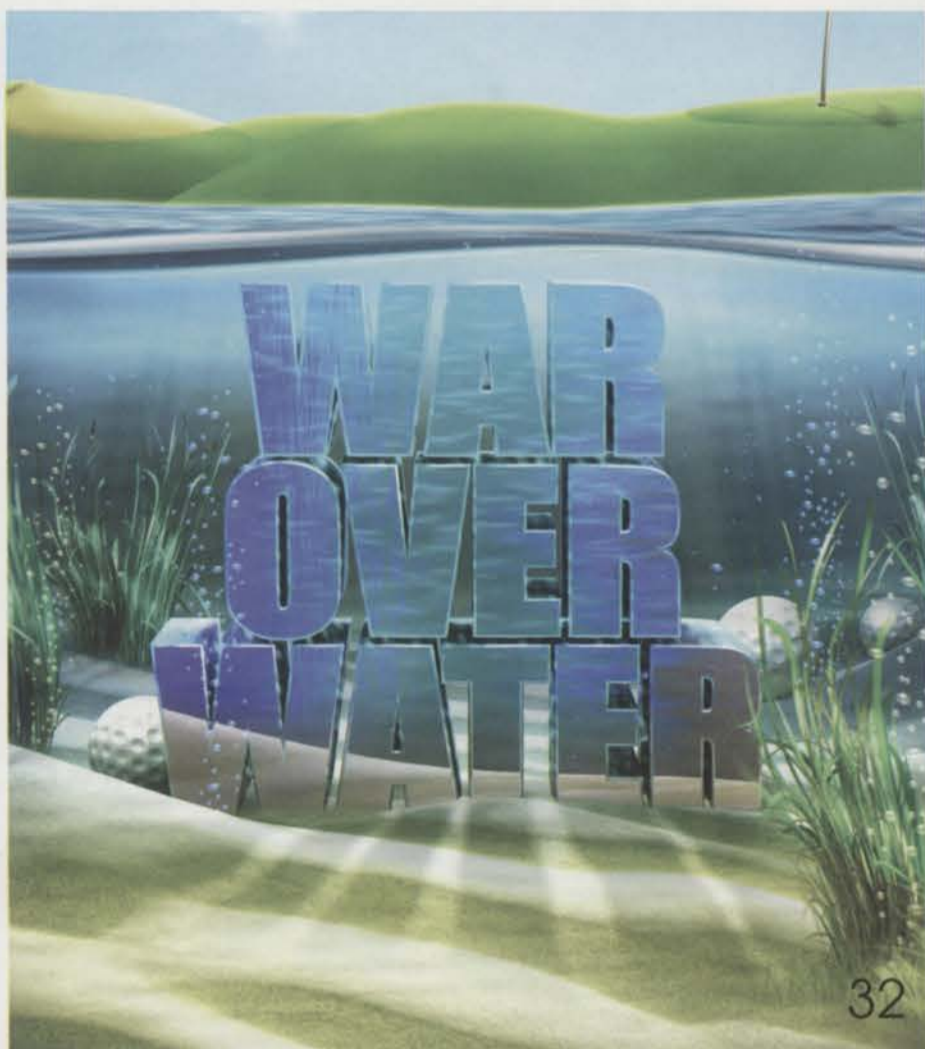
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Count on Cleary



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*source: USDA



John Walsh
Editor

Get shorty

Golf has been in a growth spurt – just look at the numbers. In 1970, there were about 11 million players. Presently, there are about 26 million.

Thanks in part to captivating professionals like Tiger Woods, the game has never been more popular. Still, popularity doesn't necessarily translate to participation.

In fact, there's room to increase participation, and many individuals and associations are working toward that goal. The PGA of America, through its Play Golf America program, and the Golf Course Builders Association of America, through its Sticks for Kids Foundation, are encouraging more people to golf – and golf more frequently. Another initiative, the First Tee, which encourages young people to develop character and solid values through golf, currently has 125 chapters and 154 facilities throughout the country.

Such programs teach newcomers the game's rewards, as well as basics like etiquette, including speed of play. This issue of time is a considerable factor affecting participation. Some people say they don't have enough time to play golf, or they say the game takes too long to play.

As a result, some in the industry, including architects, have suggested focusing on courses that are fewer than 18 holes and 18-hole courses that are considerably shorter than 7,000 yards. This would take some creative marketing to work. "Culturally, we have to overcome the perception that you're not a wimp for not playing 18 holes," said MG Orender, president of the PGA of America, at the GCBAA's annual summer meeting.

Nine-hole courses present the challenge of maintaining profitability. Because green fees correlate with the cost of building and maintaining a course, a shorter course is less expensive to play. This benefits those players who say the cost of golf is another reason why they don't play, or at least play as much as they'd like.

A less expensive course fits the portion of the golfing public that wants to play nine holes. Owners might not be fond of golfers playing a round of nine because it's cheaper than a round of 18, but a round of nine is better than no round at all. The pay-off for owners is more players, more often.

Nonetheless, shorter courses – nine holes or 18 – buck the industry trend of developing 18-hole championship courses. Some of the 200 golf courses that will open this

year are longer than 7,400 yards, with as many as five sets of tee boxes. These courses cater to the better-conditioned golfers who hit the ball farther because of more instruction, better equipment, and more playing opportunities through more courses and tournaments.

Statistics show that in 1980, a professional golfer's average drive was 257 yards, compared with the current average of 286 yards, according to Doug Winfield, a mechanical engineer who designs golf equipment. This is because of more consistent golf balls with 300 to 500 dimples instead of the old standard of 336. New clubs, which are longer, lighter and lower-lofted than older models, also contribute to longer driving distances.

Course conditions, such as lower-cut greens and fairways, increased drainage and easier bunkers in which to play, also contribute to longer courses.

Golfers are hitting balls farther, yet many don't have time to play 18 holes regularly or courses that are longer than 7,000 yards. The executive short course could be part of a growing trend of developing shorter courses to allow busy people to play golf more quickly, more often and less expensively.

Some already have found success with this model. Outside San Francisco in Dublin, Calif., a Taiwanese real-estate developer, R.S. Lin, built the 18-hole Dublin Ranch Golf Course, which plays 4,331 yards from the front tees and 4,791 yards from the back tees. However, it isn't inexpensive because of things like maintaining 8,000-square-foot greens. But the concept behind the par-63 course was to develop one that could be played in three-and-a-half hours or less.

The industry is filled with smart and creative individuals who can address golfers' time and cost challenges through changes in course design, development and maintenance, whether on new or existing courses. If this happens, the industry likely could witness more courses like Dublin Ranch open – courses that experienced and novice golfers can enjoy.

Having more golfers in general is a worthy goal, not just increasing the number of 18-hole rounds played. Getting more people involved, and staying involved, in the game, regardless of ability, is better business for all courses, no matter what the length. GCN

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Calendar of events

Nov. 3-6

2004 PGMS School of Professional Grounds Management and 15th Annual Green Industry Exposition
Charlotte (N.C.) Marriott City Center and the Charlotte Convention Center
Call 910/695-1333 or visit www.ncturfgrass.com.

Nov. 9-11

Penn State Golf Turf Conference
Nittany Lion Inn
State College, Pa.
Call 814/238-2402 or visit www.paturf.org.

Nov. 14-16

25th Annual International Irrigation Show
Tampa (Fla.) Convention Center
Call 703/536-7080 or visit www.irrigation.org.

Nov. 14-16

2004 Golf 20/20 Conference
World Golf Hall of Fame
St. Augustine, Fla.
Call 904/280-4829 or visit www.golf2020.com.

Nov. 15-18

Carolinas Golf Course Superintendents 2004 Conference & Trade Show
The Myrtle Beach (S.C.) Convention Center
Call 800/476-4272 or visit www.cgcsa.org.

Nov. 16-18

New York State Turfgrass Association's Turf and Grounds Exposition
Rochester (N.Y.) Riverside Convention Center
Call 800/873-8873 or visit www.nysta.org.

Nov. 30 - Dec. 2

Illinois Professional Turf Conference
Pheasant Run MegaCenter
St. Charles, Ill.
Call 630/243-9483 or visit www.illinoisturfgrassfoundation.org.

Dec. 7-9

Rocky Mountain Regional Turfgrass Association's 51st Annual Turfgrass

Conference and Trade Show

Holiday Inn Denver International Airport
Call 303/770-2220 or visit www.rmra.org.

Dec. 7-10

2004 Ohio Turfgrass Conference & Show
Greater Columbus (Ohio) Convention Center
Call 888/683-3445 or visit www.ohioturfgrass.org.

Dec. 9-11

New Jersey Turfgrass & Landscape Expo
Taj Mahal Casino and Resort
Atlantic City, N.J.
Call 732/821-7134 or visit www.njturfgrass.org.

Dec. 15

The 6th Annual Organic Turf Trade Show
Smithtown (N.Y.) Sheraton
Call 516/541-4321 or visit www.neighborhood-network.org.

Jan. 5-7

Minnesota Green Expo
Minneapolis Convention Center
Call 888/886-6652 or visit www.minnesotagreenexpo.com.

Jan. 6-11

56th Annual Canadian International Turfgrass Conference and Trade Show
Metro Toronto Convention Center
Call 905/602-8873 or visit www.golfsupers.com.

Jan. 11-13

Virginia Turfgrass Council's 45th Annual Turf and Landscape Conference and Trade Show
Downtown Richmond (Va.) Marriott
Call 757/464-1004 or visit www.thevtc.org.

Jan. 12-13

Ninth Annual Heart of America Golf and Turf Conference
Overland Park (Kan.) Convention Center
Call 816/561-5323 or visit www.hagcsa.org.

Jan. 17-20

Annual Michigan Turfgrass Conference

Holiday Inn South

Lansing, Mich.
Call 517/321-1660 or visit www.michiganturfgrass.org.

Jan. 17-20

Turfgrass Council of North Carolina's 43rd Annual Turfgrass Conference and Show
Adam's Mark Hotel and Grand Pavilion
Winston-Salem, N.C.
Call 910/695-1333 or visit www.ncturfgrass.org.

Jan. 19-21

2005 Mid-Am Horticultural Trade Show
Lakeside Center at McCormick Place
Chicago
Call 847/526-2010 or visit midam.org.

Feb. 2-4

Turfgrass Producers International's Midwinter Conference
Hilton Cancun (Mexico) Beach Resort
Call 800-405-8873 or visit www.turfgrassod.org.

Feb. 7-12

Golf Industry Show
Orange County Convention Center
Orlando, Fla.
Call 800/472-7878 or visit www.golfindustryshow.com.

Feb. 15-18

The First Tee 7th Annual Meeting
World Golf Village
St. Augustine, Fla.
Call 904/940-4300 or visit www.thefirsttee.org.

March 2-3

Michigan Green Industry Association's 17th Annual Trade Show & Convention
Novi (Mich.) Expo Center
Call 800/354-6352 or visit www.landscape.org.

March 8-10

New England Regional Turfgrass Conference & Show
Rhode Island Convention Center
Providence, R.I.
Call 401/848-0004 or visit www.nertf.org. GCN

E-mail conference information to John Walsh at jwalsh@gie.net.

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COURSE NEWS

What do you think of the new *Golf Course News*?

Golf Course News wants to serve its subscribers with the best editorial coverage possible. Please take a few minutes to complete this self-mailer survey to: *Golf Course News*, PO Box 5817, Cleveland, OH 44101-0817.

1. What is your job title?

- Golf course superintendent
- Assistant superintendent
- General manager
- Other: _____

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(1 = poor, 7 = excellent)

- ___ Editor's editorial
- ___ Resources page
- ___ Industry news
- ___ Marketing your course column
- ___ Design conceptions column
- ___ Advancing the game column
- ___ Tournament prep Q&A feature
- ___ War over water cover feature
- ___ Midlothian design solutions feature
- ___ Hiring retirees personnel feature
- ___ Green chairman management feature
- ___ Wireless irrigation technology feature
- ___ Fungicide maintenance feature
- ___ Soil testing research feature
- ___ Product section
- ___ Making a difference

3. What is the easiest part of your job?

4. What is the most difficult part of your job?

5. What topics would you like to read about in *Golf Course News*?

6. May we contact you?

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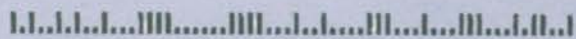


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COURSE NEWS

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Industry news

GCSAA releases survey results

Lawrence, Kan. – Golf course superintendents offered their opinions about how to speed up play in the 2004 Golf Course Superintendents Association of America Leadership Survey. The computer-based survey questioned more than 900 superintendents about trends in golf and golf course management.



Respondents cited shortening of rough (38 percent), slowing of greens (26 percent) and widening of fairways (14 percent) as the most effective ways to speed up play. When asked the same question in 1999, 14 percent said slowing green speed would speed up play.

Superintendents were asked what golf course management practice has had the most positive impact on the environment. Fifty-five percent said an increase of environmental awareness and knowledge was the biggest contributor. Improved irrigation techniques and technologies was second at 18 percent. When asked the same question four years ago, 1 percent said irrigation techniques had the biggest impact.

Superintendents have produced improved playing surfaces partly because researchers have developed turfgrass varieties that withstand weather, traffic and disease better, and require less water and labor and fewer plant protectants. These include seeded Bermudagrass, new bentgrass and seashore paspalum. Sixty-three percent of respondents said they've used a variety of new turfgrasses. Thirty-three percent said they've used them in limited areas, while a quarter said they've used them in several locations, including greens. Five percent said they've used them everywhere on their course.

While half of those surveyed believe the advances in technology are somewhat bad or very bad for the game, 28 percent said the maintenance of their course has changed to compensate for the increased distance. When asked the same question in 1999, 18 percent said they changed their course to compensate.

10 ways to fight spring dead spot

Florence, S.C. and Raleigh, N.C. –

Preventing and controlling spring dead spot disease can be one of the biggest challenges for golf course superintendents in the transition zone. Research about this disease that causes brown patches to appear during spring led to new recommendations to help prevent and control it. Turf researchers Dr. Bruce Martin of Clemson University and Dr. Lane Tredway of North Carolina State have compiled a list of the top 10 ways to fight spring dead spot disease. They are:

1. Reduce nitrogen levels in the fall
2. Provide ample potassium
3. Relieve soil compaction
4. Maintain proper soil pH
5. Control thatch
6. Cultivate in spring to encourage recovery
7. Avoid dinitroaniline herbicides in affected areas
8. Improve soil drainage
9. Apply preventive fungicides
10. Relieve other stress factors.

Ryegrass varieties perform well

Mississippi State, Miss. – In the 2003-2004 Bermudagrass fairway overseeding trials at Mississippi State University, Vixen perennial ryegrass and Par 5 perennial ryegrass blend were top performers in turf quality and color ratings.

Vixen perennial ryegrass was No. 1 in overall turf quality in the trials of new and experimental cultivars. From November through May, Vixen had the top score of 5.9 in turf quality. Par 5 Blend, which includes Vixen and Icon perennial ryegrass from Burlingham Seeds, rated a 5.7 in turf quality for the same period. With a least significant difference of 0.2, Par 5 ranked in the top statistical group also.

In color ratings, Vixen ranked fourth, and Par 5 Blend ranked seventh in dark color, again rating in the top group with a high score of 6.9 and a least significant difference of 0.4. For a copy of the study, call 800-221-7333.

Engineer gives tips to build courses

Las Vegas – Frank Protiva, vice president of Shephard-Wesnitzer, a Northern Arizona civil engineering and surveying firm, presented “Golf Course Design and Engineering for Affordable Golf” to the Urban Land Institute during the national conference in Las Vegas this summer.

Protiva's presentation for the Developing Golf Courses and Communities Conference focused on creating affordability via golf course design. Presenting with Protiva were Todd Jester of Jester Design and Dan Devere of Flagstaff Ranch Golf Club.

Protiva stressed key ways to create an affordable golf course community, including working with existing conditions as much as possible and minimizing areas of irrigated turf. Protiva says having a team consisting of a golf designer, land planner, engineer and superintendent is important for creating an affordable golf course design successfully.

Construction tips include minimizing earthwork techniques, keeping higher elevation on the outside of a dogleg and putting lakes in lower elevations. He also recommends avoiding bridges and bulkheads when designing courses.

Premier Golf to buy courses

Santa Monica, Calif. – NGP Realty Sub, American Golf Corp. and Premier Golf Management made an agreement in which Premier Golf will purchase all of National Golf's and American Golf's golf properties in Texas. The transaction is expected to close before year's end.

The Texas portfolio comprises 21 properties in Texas: the Great Southwest Golf Club, Thorntree Country Club, The Trails of Frisco Golf Club, Mesquite Golf Course, Ridgeview Ranch Golf Course, Riverchase Golf Club, The Tribute at the Colony and Twin Wells Golf Course in Dallas; the Pecan Grove Plantation Country Club, Sweetwater Country Club, Walden on Lake Houston, Willow Fork Country Club, Bear Creek Golf World, Longwood Golf Club, Southwyck Golf Club, World Houston Golf Course in Houston; The Club at Sonterra and the Pecan Valley Golf Club in San Antonio; and the Berry Creek Country Club and the Riverside Golf Course in Austin.

Golf Industry Show to add another organization

Lawrence, Kan. – The Club Managers Association of America will join the Golf Course Superintendents Association of America and the National Golf Course Owners Association in presenting the Golf Industry Show.



The inaugural Golf Industry Show, which combines the GCSAA and NGCOA trade shows, will be held Feb. 10-12, 2005 at the Orange County Convention Center in Orlando, Fla. The CMAA will become associated with the event in 2007 in Anaheim, Calif.

"We have spent years of cooperative dialogue with our allied associations, and we are delighted to move forward with this initiative, says CMAA c.e.o. Jim Singerling. "By collaborating with the GCSAA and the NGCOA, we embrace a new experience for our respective members, industry partners and vendors."

While the trade shows of the three organizations will be combined to form a new event, each will retain autonomous education conferences that will run concurrently with the Golf Industry Show. The objective is to present a trade show that represents significant aspects of a golf operation – ownership, feasibility and design, construction and operations.

Superintendents win trip to show

Lawrence, Kan. – Bayer Environmental Science and The Environmental Institute for Golf are sending five golf course superintendents to the Golf Industry Show in Orlando, Feb. 7-12. The purpose of the Bayer Superintendent Grant Program is to assist superintendents with their professional development through participation in the events at the annual conference and trade show. Winners receive airfare, hotel accommodations for six nights, conference registration, two educational seminars, two tickets to the President's Celebration and a \$200 expense stipend.

Winners are: Chuck Gay of Gainesville, Fla.; Edward M. Goodhouse of the Torrington (Conn.) Country Club; Ward Pepperman of the Faldo Golf Institute by Marriott in Orlando, Fla.; Dan W. O'Brien of the Newburg Village Golf Club in Cherry Valley, Ill.; and Matthew H. Roos of Hickory Sticks in Ann Arbor, Mich.

PSU's turf program courts applications

University Park, Pa. – Applications are being accepted for Penn State's two-year golf course turfgrass management pro-

gram for the class beginning in September 2005. There's a fee of \$35, and the deadline is March 1. Applications can be obtained by calling 814/863-0129.

Association news

Issues discussed at GCBAA meeting

Milwaukee – Several topics were discussed at the Golf Course Builders Association of America's annual summer meeting. They were: how builders can improve the process of getting paid on time; how builders can protect their workers and prevent being fined by the Occupational Safety and Health Administration; an update about the United States Golf Association's research of greens that included subsurface drip irrigation and alternative materials for drainage layers; advances in equipment technology that explain why golfers are hitting the ball farther; the PGA's program, Play Golf America, that encourages more people to play golf; how to create a wetlands area on golf courses to solve storm water problems; and ideas about how to reduce the cost of building a golf course.

Members suggested they remain diligent and timely in keeping track of and submitting invoices, perform due diligence on owners and not sue owners when not getting paid on time.

As for building less expensive golf courses, architects suggested choosing sites that don't need a lot of earth moved and to look at all line items to see where money can be saved.

Audubon program adds golf courses

Selkirk, N.Y. – The Audubon Cooperative Sanctuary program added more facilities, bringing the number to 2,287. Also, 490 golf courses have been certified as Audubon



Cooperative Sanctuaries. The program is working with 118 active members representing 50,000 acres in 33 states, as well as in Canada, China, Portugal, Puerto Rico and South Africa. The number of Certified Audubon Signature Sanctuaries is 49.

Two facilities have been designated as Certified Signature Sanctuaries: the ACE Club in Lafayette Hill, Pa., where John Canavan is superintendent; and

The Kaluhyat Course at Turning Stone Casino Resort Golf Courses in Verona, N.Y., where Joe Baidy is director of golf courses and grounds.

RISE adds members

Washington – Responsible Industry for a Sound Environment recruited 16 new members at the annual meeting of PrimeraTurf, a purchasing cooperative for independently owned companies engaged in the distribution and resale of professional turf, horticulture and landscape products. Representatives from RISE were invited to the Cleveland meeting to educate and recruit new members for the association, which represents the specialty pesticide and fertilizer industries.

To date this year, RISE has recruited 25 new members who receive industry reports and updates and can participate on committees and attend educational workshops, and the annual meeting.

Students awarded golf scholarships

Lawrence, Kan. – Twenty-five college students were awarded scholarships from the Golf Course Superintendents Association of America and The Environmental Institute for Golf. The EIFG awards scholarships annually to students planning careers as golf course superintendents. The awards are based on academic achievement, extracurricular activities, community involvement, leadership and employment. Judging also includes evaluations from the student's superintendent and faculty adviser and a three-part essay.

The Mendenhall Award of \$6,000 is given in memory of Chet Mendenhall, a charter member of the GCSAA. He was a director of GCSAA from 1940-46 and president in 1948. John Kauffman of The University of Arkansas is this year's Mendenhall recipient.

The MacCurrach Award of \$5,000 is funded by the PGA Tour and honors Allan MacCurrach, the PGA Tour's first agronomist, who, in 1974, helped establish the standard of excellence for course conditioning at PGA Tour events. Kevin Carroll of SUNY Cobleskill is the MacCurrach recipient.

Legacy Awards announced

Lawrence, Kan. – Twenty high school and college students, all sons, daugh-

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ters or grandchildren of Golf Course Superintendents Association of America members, have been named 2004 Legacy Award winners.

The awards, funded by Syngenta Professional Products and administered by The Environmental Institute for Golf, are available to GCSAA members' children and grandchildren who are enrolled full time at an accredited institution of higher learning, or who've been accepted at such an institution for the next academic year.

Since the inception of the Legacy Award Program in 1991, 170 winners have been recognized with awards totaling more than \$250,000. A committee of six educators and/or college administrators selected the 2004 winners based on academic achievement, extracurricular activities, community involvement, leadership, outside employment and an original essay. This year, 131 applications (74 college and 57 high school) were received, an increase of 27 percent compared with last year. Eight \$1,500 scholarships went to graduating high school seniors, and 12 went to students currently enrolled in college.

Course news

Berkshire Valley designed by RBA

Jefferson, N.J. – The 18-hole, par-71 Berkshire Valley Golf Course opened in May. The 6,800-yard course was built on 600 acres of land. The maintenance building opened in June, and the clubhouse and restaurant are expected to open this



Berkshire Valley Golf Course opened this spring in New Jersey.

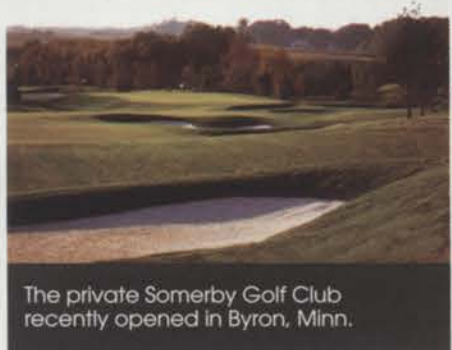
month. Berkshire Valley is the largest public golf course in Morris County and the first to open in the county since 1985. Mark Jaretsky is the superintendent.

More than 10 years ago, Morris County Department of Parks and Recreation started to investigate the site as a location for a new golf course. It hired The RBA Group, and RBA prepared a comprehensive development package from site fea-

sibility to construction inspection for an 18-hole championship golf and practice facility on 400 acres. Before designing the course, RBA evaluated all of the environmental constraints, including wetlands, buffers, floodplains, soils, vegetation, endangered species, water quality, groundwater, zoning and utilities.

Somerby opens in Minnesota

Byron Minn. – The private Somerby Golf Club opened recently. Designed by John Fought and Tom Lehman and built by Golden Tee Development, the 7,209-yard course features pockets of grassy wetlands,



The private Somerby Golf Club recently opened in Byron, Minn.

lakes and ponds that are integrated into the bentgrass fairways and approaches. The par-72 course has five sets of tees, and from the gold tees, it has a slope of 147 and a 75.0 rating. The course also features a 37,00-square-foot, English-manor-style clubhouse. Casey Colin is the course superintendent, and Brian Jones is the director of operations.

Somerby is a new residential community and golf course that sits on 450 acres of rolling hills with thick stands of trees and 26 acres of natural wetlands.

Permit approved for golf project

Olympia Wash. – The state Department of Ecology approved the water-quality permit for The Links at Half Moon Bay, a proposed golf course and resort in Westport. The 401 permit is a water-quality certification named after a section in the federal Clean Water Act. The certification assures the project will protect water quality to meet the state's standards.

Conditions in the certification require the project to manage its use of herbicides, storm water and waste water in a manner that protects wetlands, the shoreline and the ocean environment. The conditions require monitoring and reporting to ensure that the site stays in

compliance with the state's water quality standards. They also require wetlands be restored and preserved.

Several clubs get certified by Audubon

Oneida Nation Homelands, N.Y. – Audubon International selected the Kaluhyat Golf Club at Turning Stone Resort and Casino, which was designed by Robert Trent Jones Jr., as a Certified Signature Sanctuary.

Meanwhile, the Shenendoah Golf Club and Sandstone Hollow, both created by Rick Smith, have been officially recertified. Turning Stone is among 44 golf operations in the country and one of two in New York State to receive the status.

The three courses were designed, constructed and are maintained incorporating the existing ecosystems of the sites, ensuring that wetlands, native plant life and wildlife habitats remain undisturbed. A diverse population of wildlife, including deer, foxes and almost 100 species of birds, reside in natural buffer zones separating their dwellings from fairways and greens.

Turning Stone recently opened a championship-level golf course designed by Tom Fazio.

N.Y. course is first to open in years

Newcastle, N.Y. – The Mark Mungeam-designed Hudson Hills Golf Course opened this summer, which is the first time



Hudson Hills Golf Course recently opened in Newcastle, N.Y.

a public course debuted in Westchester County since the 1930s. The club closed down in 1982, when IBM purchased the property with plans to build a corporate research laboratory there. Those plans never materialized. The county stepped in, bought the land back and retained Mungeam to design a new golf course.

Developed by the Westchester County

Department of Public Works and operated by Billy Casper Golf Management, the course features significant elevation changes that Mungeam used to create a 6,935-yard, par-71 course with long views and dramatic shot values.

Rochelle Ranch opens in Wyoming

Tucson, Ariz. – In August, golf course architect Ken Kavanaugh was on hand for the grand opening of his latest de-

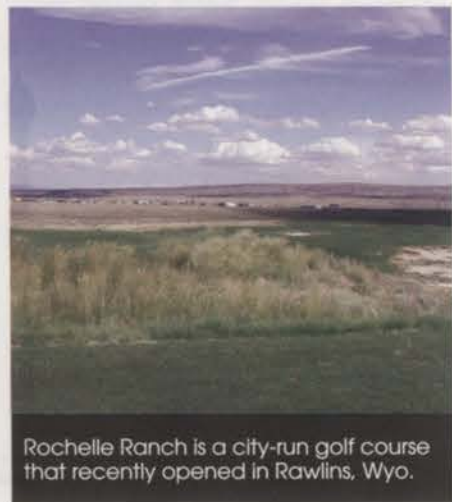


Photo: Rochelle Ranch

Rochelle Ranch is a city-run golf course that recently opened in Rawlins, Wyo.

sign, Rochelle Ranch, located in Rawlins, Wyo. Rochelle Ranch is a municipal golf course run by the City of Rawlins. The facility is a gift from local ranchers and investors Curt and Marian Rochelle, who wanted to give something back to their community.

Built by Landscapes Unlimited of Lincoln, Neb., the course measures 7,925 yards from the championship tees and 5,763 yards from the front markers. To accommodate a variety of players on a site that often features strong prairie breezes, Kavanaugh designed extra-wide, strategically bunkered fairways. The layout sports a rugged, rough-hewn look, with weathered, wind-blown bunkers and expansive sand dunes.

First Tee course opens in Minnesota

Blaine, Minn. – The National Youth Golf Center, home of The First Tee of Blaine, Minn., opened a new, 18-hole events course, which is the second phase of the comprehensive golf project developed by the National Sports Center. The first phase, completed four years ago, included an 18-hole putting course with bentgrass greens. PGA Tour Design Services designed and built both courses.

The goal of the new course is to field players from beginners to professionals

of all ages. The course measures 7,100 yards and is a par 71 with five par-3 holes. It also has a practice facility with target greens, a large turf tee and hitting pads.

When it's complete, the complex will consist of the putting course, the 18-hole competitive course and a nine-hole course. Currently, phase one and two are complete. The nine-hole course will start development in a couple years.

Developers and designers dealt with flight patterns related to geese and fowl, winds and wetlands. There's no open water on the course because it's a habitat for geese. There was minimal disruption to wetlands, but if wetlands were impacted, they were replaced on and off site at 2-to-1 ratio.

The events course is a blend of wild flowers, prairie grasses, bluegrass and fescue. Bunkers are built with minimal slope for easy maintenance. Greens are large to support various pin locations, and all greens are U.S. Golf Association standard. The grasses chosen for the course were dwarf bluegrass, mainly in the fairway because of their hardness to golf traffic. The roughs are mostly bluegrass with minimal fescue because of cart traffic. Greens are bentgrass. There are native areas outside of the roughs to give it the feel of a links style golf course.

The superintendent of the course is Jeff Reich.

Quinnatisset opens nine new holes

Thompson, Conn. – Quinnatisset Country Club, a private, member-owned golf club, opened nine new holes this summer. Designed and constructed by The Roger Rulewich Group, the new holes were built on the site of the original nine-hole golf course that opened in 1903. This original nine was 2,634 yards and crammed onto 33 acres. Club members purchased a contiguous 42 acre land parcel in 2001 for this expansion. None of the old holes or routing were used in the design. The Rulewich Group started construction in July 2003, and the course opened in June 2004.

The new nine measures 3,247 yards and will play, at least for this year, as the back nine. The front nine, designed by Geoffrey Cornish, opened in 1968 and measures 3,254 yards, bringing the new total yardage to 6,503. The Rulewich Group rebuilt the 10th green on the Cornish nine and added a new practice tee as well.

National Resort to lead growth of Florida resort

Palm Beach Gardens, Fla. – National Resort Management Group now will manage the PGA National Resort & Spa. Patrick A. Corso, managing partner of Pinehurst, N.C.-based National Resort Management Group, heads a team charged with leading PGA National through a new phase of growth and renovation. National Resort Management Group replaces Dolce International.



Corso

Initial plans include improvements designed to have a significant impact on the quality of the guest experience.

"We will introduce caddies to the golf program, something we know golfers will welcome," Corso says. "We will develop a group of attractive, exclusive packages to attract golf groups in addition to our meeting customers. And we intend to install a guest feedback system that will tell us what else we need to be doing to improve our performance."

Jamaican course to get makeover

Montego Bay, Jamaica – Half Moon will invest more than \$1 million to upgrade its par-72, Robert Trent Jones Sr.-designed golf course – the first phase of what's slated to be a two-year process.

Golf course architect Roger Rulewich will renovate the course's back nine holes, creating better site lines, wider fairways, reshaped fairway bunkers, reoriented tees for better angles and expanded greens.

Phase two, which is being planned for mid-2005, will focus on improvements to the course's front nine holes, moving the 19th Hole Bar located on the course and expanding the practice facilities of the David Leadbetter Golf Academy.

Nicklaus to design N. Carolina course

Southport, N.C. – St. James Properties retained Nicklaus Design to create the newest course in the Coastal Carolinas – The Reserve Club at St. James Plantation.

Plans are to develop an 18-hole course in the community's newest neighbor-

hood, The Reserve. The Reserve Club will bring the number of golf holes available to the members and guests of St. James Plantation to 81.

The design team will be led by Michael Nicklaus. The team said the par-72 layout will play more than 7,100 yards from the back tees, but will offer enough tees to accommodate players of all skill levels. The site is a good one from a designer's perspective because the terrain is rolling and consists of sandy soil, which is ideal for building golf courses, according to Nicklaus. The team complimented the native vegetation and the variety of wooded wetlands.

Courses in Egypt in different stages of development

Taba Heights and Makadi Bay, Egypt – Construction resumed on an 18-hole John Sanford-designed layout that's the

centerpiece of the Taba Heights Golf Resort, located under the table mountain of Taba Heights at the northern point of the Gulf of Aqaba near the border of Egypt and Israel. Course construction started in 2000. Much of the heavy earth work and rough grading were completed before construction was halted because of political unrest and economic difficulties in the area. Landmasters Construction, an Egyptian firm, is building the course for the Taba Heights Resort Co. The championship layout will play 7,050 yards from the back tees and feature smooth-rolling, salt-tolerant paspalum turfgrasses throughout.

South of Cairo is the 18-hole Sanford-designed Makadi Bay Golf Resort near Hurghada. It will be part of a five-hotel resort in Makadi Bay. Three new hotels and 200 villas are planned around the course, which will include a golf academy featuring a 20-acre practice range, nine-hole pitch-and-putt, and three practice holes.

The championship course will have six

sets of tees and reach almost 7,500 yards from the tips. The layout works its way through existing sand dunes, with elevation changes of 170 feet affording views of the hotels, Red Sea and mountains.

The golf academy is scheduled to open in a year and the full course in two years. The sandy topography will require minimal earth moving. Water will come from a deep well located in the mountains and be delivered to an irrigation pond located on the seventh and eighth holes. The course will be planted with paspalum grasses, which should thrive even with irrigation water containing 4,000 parts per million of salt.

Travco, an Egyptian travel agency and hotel operator, is the developer/owner.

Missouri club transforms driving range

St. Charles, Mo. – Whitmoor Country

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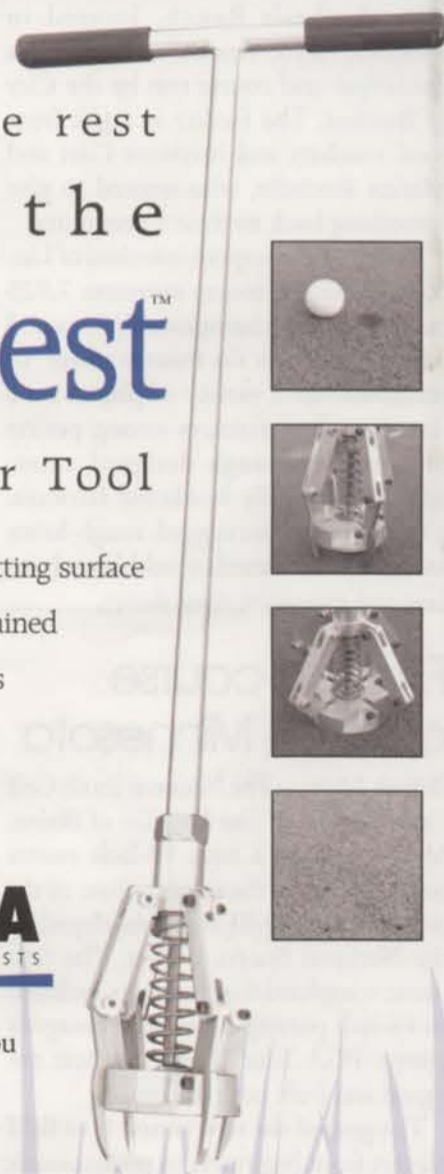
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Club transformed its driving range into a complete practice center. The new 40,000-square-foot range includes five target greens, four bunkers, and various visual and topographical changes, allowing members to work on every aspect of their game. The new facility is part of about \$20 million of capital improvements at the club. The ownership strives to ensure the club stays competitive in the coming decades and members are offered the most amenities and the highest level of service in the area. The private club offers 36 holes of championship golf.

Package offered at Pinehurst Resort until May 2005

Pinehurst, N.C. – Pinehurst Resort will offer its championship package until May 28, 2005, two weeks before the U.S. Open Championship returns. The three-day/two-night Pinehurst Cham-

pionship package for guests includes:

- Unlimited championship rounds of golf, including a round on Pinehurst No. 2;
- Optional golf clinic to master the challenging Ross greens;
- Tee time announcement on first hole of No. 2 round;
- Caddie on No. 2 round with player's name on jersey and "Caddie Cam" photographs captured during the round;
- Personalized locker;
- Golfer's massage at The Spa at Pinehurst;
- Complimentary photo near the Payne Stewart Statue;
- \$100 gift card for exclusive championship merchandise;
- Personalized bag tag;
- Welcome gifts in room;
- First-class, round trip transportation from the airport; and
- Accommodations, breakfast and dinner daily.

Supplier news

Advanced Aeration Systems, a company that provides subsurface aeration systems to golf courses throughout the country, established distribution agreements with Rain Bird and Toro golf course irrigation system distributors in: Florida, North Carolina, South Carolina, Virginia, Kentucky, West Virginia, Pennsylvania, New Jersey, New York, Ohio, Illinois, Minnesota, Iowa, Kansas, Nebraska, Missouri, Texas, Oklahoma and Nevada. Additionally, the company completed installations at Muirfield Village Golf Club in Dublin, Ohio; Tucson (Ariz.) Country Club; Desert Mountain and Terraviva Golf Club in Scottsdale, Ariz.; Preston Trail Golf Club in Dallas; The Riviera Country Club in Pacific Palisades, Calif.; The Traditions Club in Bryant, Texas; and Wade Hampton Golf Club in Cashiers, N.C.

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Bayer Environmental Science received supplemental registration from the Environmental Protection Agency for the addition of Curvularia to the 26GT fungicide label. The label states the product may be applied as a preventive treatment every 14 days at rates of 4 fluid ounces per 1,000 square feet. Curvularia is a leaf-spot fungus that causes spotting on grasses. 26GT fungicide is a broad-spectrum product registered for control of brown patch, dollar spot and a variety of other destructive turfgrass diseases.

Bayer Environmental Science sales representatives participated in Take Your Daughter to the Course Week in July. Sponsored partially by the National Golf Course Owners Association, the program is geared toward introducing golf to girls. Participating golf courses offered reduced green fees to junior golfers from select USGA Foundation-supported junior golf programs.

New Berlin (Wis.) Hills Golf Course hired Bonestroo, Rosene, Anderlik & Associates, an engineering consulting firm, to prevent erosion by stabilizing 3,300 feet of the Root River, which flows through the course. The \$225,000 project consisted of a geomorphic assessment of each reach and usage of native growing plants on regraded slopes with permanent turf reinforcement matting and in-stream treatment structures. Other project elements included a topographic survey, wetland delineation, hydraulic analysis and the submittal for and acquisition of grant funds for construction.

Nitamin fertilizers from Georgia-Pacific Resins are demonstrating improved turf performance in studies conducted by the company and its distributors in North Carolina, Georgia and Ohio. Also, turf studies using Nitamin fertilizer are under way at several universities with nationally recognized turfgrass science departments.

GPS Industries, a provider of global positioning and Wi-Fi wireless to golf courses, acquired international GPS patents in 13 countries: Great Britain, Ireland, France, Italy, Germany, Austria, Spain, Portugal, Sweden, Switzerland, the Netherlands, Japan and Australia.

Jacobsen is offering a promotion – No Pay 'til May – to its customers. It features zero down and zero payments for qualified customers until May 2005 for all golf and turf care equipment. The program started Aug. 2 and runs through Dec. 31.

Koch Cellulose now manufactures and markets BlueYellow, the turf establishment system that combines seed and fertilizer in a lightweight, biodegradable roll. Koch Cellulose acquired BlueYellow as part of a purchase deal struck with Georgia-Pacific.

LESCO released second quarter results

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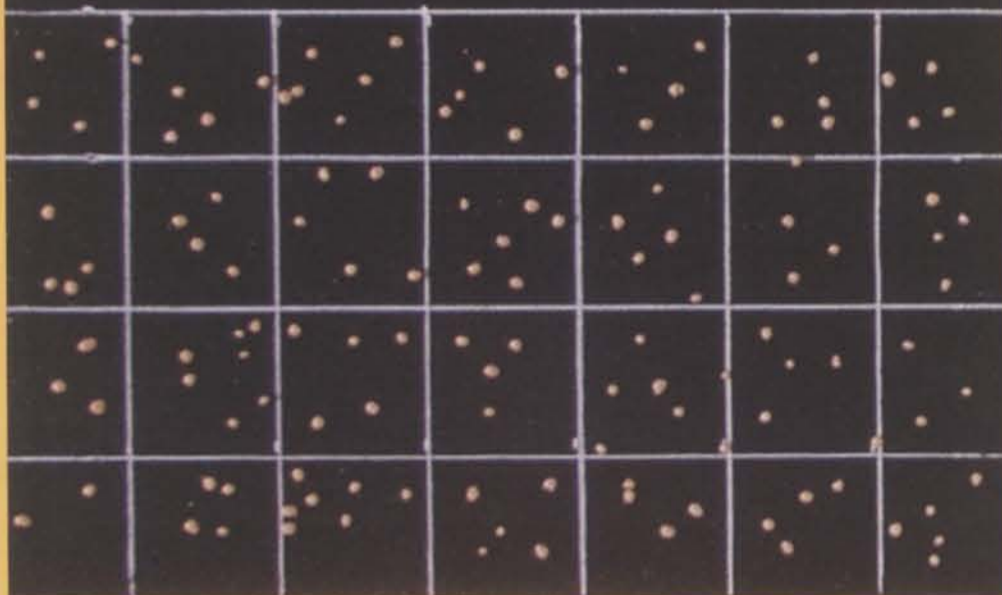
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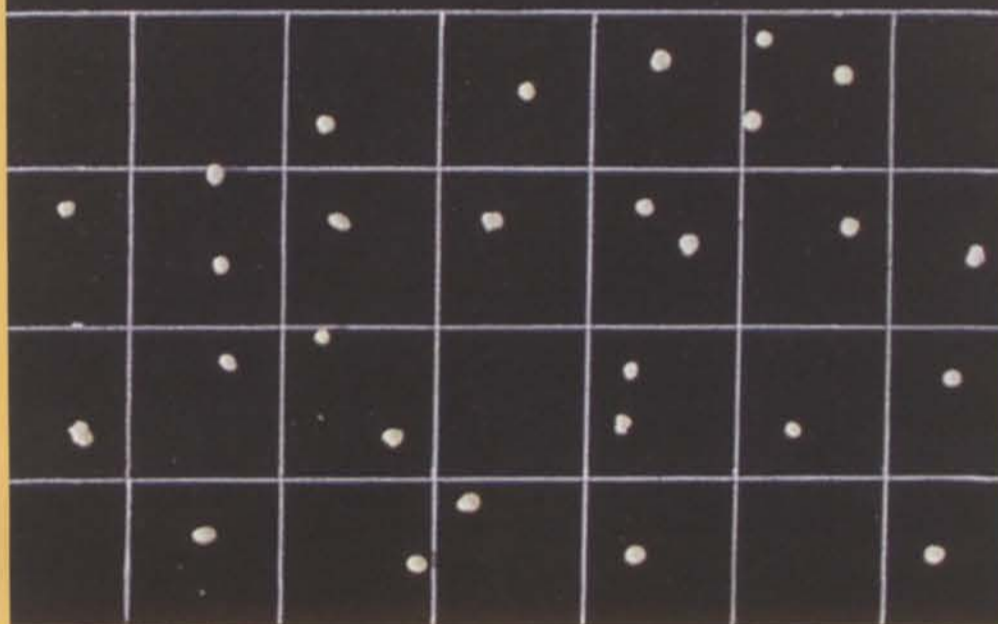
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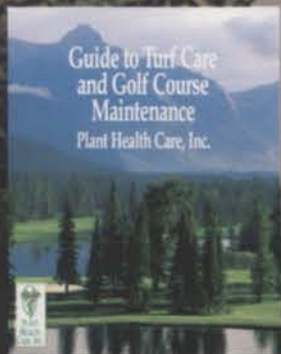
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for the period ending June 30, 2004. Net sales during the quarter increased 6 percent to \$182.2 million from \$172.6 million last year. Golf gross sales grew almost 1 percent to \$42.0 million from \$41.7 million last year. Service center sales increased 7 percent to \$126.7 million from \$118.0 million for the same period a year ago. Same-store service center sales increased 1 percent. The company also donated \$30,000 to Project EverGreen.

Little Beaver, a manufacturer of earth drills and augers, launched its new Web site, www.littlebeaver.com. The improved Web site features user-friendly navigation tools in a newly designed page format. Seven product videos are available.

PBI/Gordon Corp. added a Spanish version of the SpeedZone Southern label and material safety data sheets to the corporate Web site, www.pbigordon.com.

Players Turf International installed a synthetic turf project in the Fossum Practice Facility at the Rearick Golf Complex at Michigan State University. The project included the installation of a 1,100-square-foot practice putting green and 442 square feet of PerfectTee tee line at the indoor facility. The company also installed 2,760 square feet of synthetic tee line turf at Covered Bridge Golf Club in Sellersburg, Ind.

Redexim Charterhouse welcomed Autrusa and Lewis Equipment Co. to its Antonio Carraro dealer network. Autrusa is in Perkiomenville, Penn., and Lewis Equipment is in Winter Haven, Fla.

SePro Corp., an agrichemical company, negotiated to purchase the former Zeneca research facility in Whitakers, N.C. It has been renamed the SePro Research and Technology Campus and includes a six-building aquatic research and technology complex with laboratories and 11 acres of specialized aquatic research ponds and mesocosms.

Vermeer launched an interactive Web site, www.vermeer.com, which is the first phase of a multifaceted campaign to open communication channels with its customers.

West Coast Turf adopted the United

States Standard Bushel of 1.244 cubic feet as its unit of measure for selling turfgrass sprigs. Sod companies historically have used a factored or turf bushel based on the amount of sprigs harvested from one square yard of sod.

Personnel news

Stallion Management, a Scottsdale, Ariz.-based golf course and real-estate management company, appointment **Kevin Jamros** director of instruction for the Desert Mirage Golf Academy in Glendale, Ariz.

The National Turfgrass Evaluation Program hired **Dr. Jeff Krans**, retired professor of turfgrass science at Mississippi State University, on a part-time basis. Krans conducts site visits at university trial sites on behalf of NTEP.

Kevin Buntrock and **Don Ward**, owners of the Golf Club at Red Rock in Rapid City, S.D., celebrated one year of having 18 holes open for play by having their second charity event for the Make-A-Wish Foundation and South Dakota junior golf program.

Thomas R. Armitage is the vice president of the western region of the country for North Palm Beach, Fla.-based Advanced Aeration systems, and **Michael E. Gogel** is the director of field operations for the company.

BlueYellow added three employees: **John Martin**, an agronomist and former superintendent; **Jacqueline Wurtz**, a retail marketing and sales manager; and **Cindy Peeples**, a customer care manager.

Georgia-Pacific Resins appointed **James Wargo** technical service agronomist for Nitamin nitrogen fertilizer. Wargo coordinates the development of scientific communications detailing the benefits of Nitamin fertilizers.

Golf Ventures, a Lake-land, Fla.-based sup-

plier to the golf course maintenance industry, hired **Bill Schmidt** as equipment territory manager for the Fort Myers, Fla., area and **Randy Luther** as equipment territory manager for Northern Florida.



Wargo

GreenJacket Impermeable Turf Covers hired three outside sales representatives: **Pete Malcolm**, who will be responsible for New York, Connecticut and northern New Jersey; **Joe Lazaro** of Lazaro's Golf Course Supplies who will be responsible for Massachusetts, Rhode Island, and southern Maine and New Hampshire; and **Tom Lovell** of Lovells Tribe who will be responsible for Montana, Idaho, Utah and Wyoming. The company also hired **Paul Jones** and **Tom Kientzle** of TeeShot, which will be responsible for sales and factory communications for Minnesota, North and South Dakota, and Northwest Wisconsin.

John Deere Golf & Turf One Source added **Matt Armbrister** as associate brand manager to its marketing team.



Armbrister

Peoria, Ill.-based **Players Turf** hired two project designer/installers, **Jeff Gross** and **Donnie Bailey**, who recently joined the company to increase its operational capability.

Igor Archipov joined **Rain Bird** as a senior manufacturing engineer for the golf division.

Geo Gatev is the new golf area manager for Japan and Korea for **Rain Bird International**.

Seed Research of Oregon presented **Frank Lopes** of **ProSource One** in Watkinville, Ga., its 2003 marketing excellence award, which is given for outstanding efforts to promote and establish the Seed Research brand, its products and services.

Scott Boutilier was promoted to vice president of **Wellmark International's** Zoëcon and Starbar Groups. Boutilier also has been named a member of **Wellmark's** executive committee. GCN



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Jack Brennan founded Paladin Golf Marketing, Plant City, Fla., to assist golf course owners and managers with successful marketing. A former associate publisher for *Golf Week*, he can be reached at Jackbrennan@lj.net.

Grand openings

You get to be new only once, so the grand opening of a new or renovated course is a marketing opportunity that can't be passed up. A new course is an exciting event for area golfers, the community and the golf course employees. The excitement can be used to get a course off to a great start with plenty of media coverage and a lot of golfers playing on the new course.

My advice for a grand opening is to create activities that last most of a week. The critically important thing is to begin a grand opening with a media day. You want to generate enough excitement and media coverage to let area golfers know about the week's events. The second important goal is to finish the week by getting as many area golfers as possible to play your new course. With these two goals in mind, how you plan the week depends on your market, your course and your budget.

If your new course is in a major market, then you could start the grand opening on a Monday or Tuesday. If you're in a small market, then you can start on a Tuesday or Wednesday. You want to finish on Friday, Saturday and Sunday when you'll host a good turnout of golfers. Again, if you start the grand opening week with excitement, then serious golfers will want to play the new course on the opening weekend.

Making a grand opening a full week also provides you with a rain day. Except for the opening media day, usually you can work around a rain day by rescheduling and combining events scheduled for later in the week.

Here's how a typical grand opening could be planned for a golf course in a major market:

Monday is media day. Invite all print and broadcast journalists.

Tuesday is VIP day. Invite the mayor, city council, chamber of commerce crowd and area semipro and pro golfers. Also invite the course architect, builder and others involved in the design, permitting and construction.

Wednesday is hospitality day. Invite owners and managers of area hotels, conference centers, motels and even bed-and-breakfasts — anyone that could refer traveling guests to your golf course. On this day, consider announcing a trade-out partnership program to encourage hospitality sites to refer guests to your course. For their guests, this

could be a special rate or free use of clubs. For hospitality managers and employees, it could be special rates based on the number of referrals and golfers they provide.

Thursday is the day for major fun activities geared to create excitement and generate maximum media coverage.

The grand opening ends on Friday, Saturday and Sunday when you want to get the golfer participation needed to get your new or renovated course off to a great start. It's not necessary to have the course be in perfect playing condition — it's opening week, after all — but make sure conditions are good enough so that no major flaws are obvious. You don't want to generate complaints or negative coverage of the opening week. One thing that can help is to hire extra help before and after the week to keep the course looking good despite all the traffic and wear-and-tear.

If you're in a small market, condense the grand opening by starting on a Tuesday or Wednesday. For example, make Wednesday the media and VIP day. Then Thursday becomes a hospitality day in the morning and major fun activities in the afternoon. Again, Friday, Saturday and Sunday are golf days.

Generating excitement

The great part about a successful grand opening is all the fun you can generate. A popular approach is to offer a \$1-million hole in one prize. You cover this event by purchasing hole-in-one insurance. The rate depends on the distance and how many people will be taking the shot. This insurance typically costs between \$400 to \$500 per golfer/shot.

Here's an idea to hold your costs down and generate more excitement in the process: host a number of smaller contests that qualify the winners for a chance to take the hole-in-one shot. For example, you can put four flags on a green and hold a driving contest in which the winner or winners — depending on how many you want to qualify for the hole-in-one contest — hit one of the flags or come closest to one.

Another great qualifying contest is to hold a putting contest from 20 feet. Have everyone that tries pay \$1 per put. Then,

all that qualify at that distance get to try for free from 40 feet, and the winners qualify for the hole-in-one shot. Again, limit the number of winners based on the number you want to qualify for the hole-in-one contest. Other qualifying events can include a chipping contest and a longest drive contest.

To generate more interest, offer prizes for all the qualifying events. Trips can be a surprisingly inexpensive prize if bought from a wholesaler, but tangible prizes such as TVs and new golf clubs work great as well. If products by area manufacturers are possible prizes, invite them to participate by donating their products in return for the publicity. Add more excitement by locating tangible prizes at the site of the contest.

Make sure media are invited to watch the contests. Better yet, have one or more contests for media only.

Here are some other opening day events to create excitement:

- Have a contest to set the course record on opening weekend with a prize for the winners. The records can include the longest put, the lowest score and the longest drive (records can be set for seniors, juniors, women and men using the different tees). Individuals setting the initial course records on opening day are excellent subjects for media coverage.

- Fill a gas grille, a boat, a convertible or any other prize with golf tees and offer it to anyone who correctly guesses how many tees are in it.

- Auction off the first tee shot. Some golf courses get hundreds or even thousands of dollars for the honor of being the first golfer on the course.

- Offer a minitournament for local high school or college teams, or teams consisting of dignitaries, teams consisting of hospitality managers and employees or senior citizens, or teams of area superintendents.

The excitement you build into the grand opening is up to you, but make it fun for everyone. Golf should be fun, and the opening of a new or renovated course can leave everyone involved with a good feeling. One final thought: You can't host a grand opening every year, but one course I worked with had so much fun that they repeated the concept every year and called it the annual Golf Day. GCN

THE OPENING OF A NEW OR RENOVATED COURSE CAN LEAVE EVERYONE INVOLVED WITH A GOOD FEELING.

Drainage demystified

Don't dread drainage design. Instead, simplify the process. Here are some formulas I use to make golf course drainage design easier.

First, here are some basics. Take care of surface drainage problems with surface drainage and subsurface problems with subsurface drainage. Spring correction requires at least four-inch, perforated, gravel-embedded tile drains at the seepage location. However, many superintendents use tile drains to correct surface problems when grading surface pitch of 2 or 3 percent to inlets.

Typically, golf course drainage systems differ from ones used on residential properties. These drainage systems don't need the large pipes used in subdivisions because engineers size those drains for property protection and the health, safety and welfare of the people who live there. Golf courses usually don't face such critical safety issues, but an engineer should develop drainage plans where these issues might arise.

Additionally on golf courses, immediate drainage of large storms isn't necessary or cost effective. Instead, size pipe consistently so the entire course is ready for play. Protect turf conditions from the effects of nuisance drainage and storms by disposing of incidental drainage immediately.

Occasional play delays are acceptable during larger storms while pipe capacity removes storm water. Temporary ponding also helps filter inputs, making smaller pipes and inlets environmentally sound and cost effective.

This is not to diminish the importance of quick drainage, however. Submerged turf suffers from oxygen depletion after only a few hours and dies in as little as two days if submerged during summer temperatures. Drainage systems should handle typical storms in about 90 minutes and drain larger storms in a few days. Draining a storm in 90 minutes is adequate for most golf course installations.

Ensure efficient drainage with a careful plan. After laying out a pipe scheme, use the rational method to size drain pipe. The formula is $Q = CIA$ where:

- Q = runoff (cubic feet per second);
- C = coefficient (percentage of runoff expressed as a decimal);
- I = rainfall intensity rate (inches per hour); and
- A = acres of watershed draining to an inlet.

The mathematically astute will recognize the formula estimates acre-inches per hour. Coincidentally, that's the same value as cubic feet per second, which is the unit used to size pipe.

To use the rational method, estimate the runoff percentage from a rainfall based on site factors. Some typical coefficient values are: urban/industrial – 70 to 90 percent; residential – 50 to 70 percent; golf course – 30 to 50 percent; and rural – 10 to 30 percent. If parts of the watershed area are urbanized, blend coefficient values based on the portion of drainage area in each land use. Use the higher percentages for clay soils, steep slopes and light turf cover. Use average values for loam soils, moderate slopes and vegetative cover and minimum values for sandy soils, flat slopes and heavy tree cover.

Keep in mind, though, these values are estimates. Some rains will fall on dry soil that will absorb it readily, but other storms will occur when soil is at field capacity from irrigation or earlier rains. Use higher values where possible.

" I " is the amount of water per hour that wants to be drained, which is usually in 90 minutes. In Houston, that's two inches an hour; in Kansas City, it's 1.5 inches an hour; and in St. Paul, it's about one inch an hour. These areas are in the I-35 corridor, which tends to have intense storms. Use these values if at a similar latitude and there's a safety factor. Assuming 50-percent runoff, the typical Houston

drainage acre produces 1 cfs of runoff, Kansas City acres produce 0.75 cfs, and St. Paul acres produce 0.5 cfs.

When sizing catch basins, measure the acreage draining into each inlet and consult the chart below, which is based on typical light-duty golf course basins with a safety factor. Even though smaller inlets might look better, oversize the basins.

Size pipes similarly, starting at the top of the line where the pipe needs the same capacity as the first basin. At subsequent basins, the outlet section of pipe must accommodate that inlet and the water flowing through the pipe.

Overall, pipe size is a function of flow and grade. For example, if the top basin contributes 1 cfs, a 10-inch basin and a six-inch pipe at about 3 percent, or an eight-inch pipe at 0.5 percent is needed. Although smaller pipe costs less, some situations might require larger pipe at a flatter grade. If the next basin adds 4 cfs, that pipe must carry 5 cfs, requiring 10-inch pipe at a 3-percent grade or a 12-inch pipe at a 1-percent grade.

The minimum slopes shown below are those required for self-cleansing velocity. Ignore this and your drainage system will require constant cleaning. The maximum slope limits scoured pipes and exit-area erosion problems from high-flow velocity. The middle range requires some mental gymnastics to arrive at correct pipe size for in-between situations. GCN

Sizing drainage systems

Design intensity in CFS per acre	CFS actual	Acres drained by				
		0.25 CFS acre	0.375 CFS acre	0.5 CFS acre	0.75 CFS acre	1.0 CFS acre
8-inch round grate	0.3	1.2	0.8	0.6	0.4	0.3
10-inch round grate	0.6	2.4	1.6	1.2	0.8	0.6
12-inch round grate	1.2	4.8	3.2	2.4	1.6	1.2
15-inch round grate	1.7	6.8	4.5	3.4	2.25	1.7
18-inch round grate	1.8	7.2	4.8	3.6	2.4	1.8
24-inch round grate	2.8	11.2	7.4	5.6	3.7	2.8

Pipe size (in.)	Min. slope (%)	CFS	Mid slope (%)	CFS	Max. slope (%)	CFS
4	1.25	0.2	4.5	0.4	10	0.8
6	0.7	0.6	3.0	1.33	6	1.8
8	0.5	1.0	2.0	2	4	3.2
10	0.33	1.75	1.5	3.3	3	5.0
12	0.25	2.5	1.0	5	2.5	7.0
15	0.20	3.7	0.8	6	1.75	11.0
18	0.15	5.25	0.6	10	1.5	16.0
24	0.12	9.5	0.4	20	1.0	30.0



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Real job security

I'm surprised and disappointed when I read that the majority of golf course superintendents feel insecure about maintaining their jobs. A recent 2004 *Golf Course News* survey indicated only 41 percent of superintendents feel completely secure with their jobs, 51 percent feel less than secure, and 7 percent express uncertainty about the subject, which is tantamount to acknowledging job insecurity.

Reasons to support the premise of job insecurity are: The national economy is putting additional budget pressure on golf course operations; the dot-com era brought more inexperienced, quicker-to-act personalities into positions of authority within the superintendent's chain of command; and club and course officials generally don't understand the increasing complexity of the superintendent's work world.

My definition of job security is when superintendents are guaranteed the right to work, or otherwise, upon notice, have the right to be paid for the coming 12 months with full benefits.

My disappointment isn't with the industry or its people for failing to appreciate the work of golf course superintendents. Rather, it's directed at the golf course superintendents for not being sensitive to the many job-security opportunities available to them in many different ways. Examples follow.

Season-ending evaluation meetings. More superintendents should request or require season-ending evaluation meetings in which discussion would focus on what went well that season, what didn't and what needs to be done better next season. While this procedure won't guarantee job security, it will defuse issues that regularly lead to job dismissal.

Job descriptions. More superintendents should require that annually reviewed job descriptions be incorporated in their employment agreements. If necessary, superintendents should draft a job description and submit it to the employer for mutual approval.

The benefit of a job description is it holds both parties accountable to each other in writing, while at the same time ensuring the scope of the superintendent's job won't change unknowingly with green committee turnover. Job se-

curity is put at risk any time superintendents and their employers have different understandings of the scope of the job.

Big brother programs. A little recognized fact of life is that when assistants assume their first superintendent positions, all supervision of their work ends. Employers will judge their final work product, but there's no qualified supervision of the quality and flow of their everyday work, unless superintendents work for contract firms.

To correct this oversight, Golf Course Superintendents Association of America chapters should match rookie superintendents with veteran superintendents who will counsel the newcomers through their learning-curve period. This should include regular mandatory visits (with and without notice) to the rookie superintendent's course to provide quality supervision all first-time managers require in any profession.

Written agreements. Several key points must be made regarding employment agreements. Accordingly, superintendents should:

- Insist on written agreements or contracts because they guarantee the right to work (or to be paid) for the life of the agreement.
- Avoid fixed, multi-year agreements that will be worth less after the final contractual year to zero job security; at a time when the superintendent's salary will be at its highest; where presumably there will have been administration turnover from the time when the agreement was signed; and when less costly superintendents will be available. At no other time will a superintendent's job be at greater risk.
- Negotiate for multi-year rollover agreements that will extend one year whenever there are 12 months remaining in the life of the agreement.

If the superintendent's seniority doesn't allow for 12-month compensation upon notice, the superintendent can settle for fewer months initially, provided the employer will add two or three months (which is negotiable) of job security for each succeeding year of satisfactory work, up to a maximum of 12 months.

Playing golf. In due course and within the following sequence, golf course superintendents should: (1) play golf regularly, visibly and comfortably, (2) earn a USGA official handicap, (3) take and pass the PGA/USGA rules test, (4) serve on their club/course rules committee, and (5) vol-

unteer to serve on the local state or regional golf association's junior tournament/rules committee.

Some superintendents might want to commit to the complete scenario. But by acquiring an official handicap and passing the PGA/USGA rules test, superintendents will place themselves in an exclusive peer group (99th percentile) in the national community of golfers.

Historically, golf employers have always given the benefit of the doubt to and have hesitated dismissing individuals they look at as peers or part of their immediate family in golf as opposed to superintendents who turn their backs on playing the game. Statistics show that more than 70 percent of recently dismissed superintendents didn't play golf regularly.

Budget efficiency. Because economics drive every business, superintendents that consistently manage budgets tightly and cost efficiently will always be respected and in demand. The sooner superintendents recognize the ego-building practice of growing budgets that's so prevalent early in careers becomes a liability later in careers, the more secure their jobs will be.

Cost-efficient budget management is a veteran superintendent's best and sometimes only friend when it comes to job security late in career. Tight fiscal management will always allow veteran superintendents to justify their high-end salaries, thereby reducing the likelihood of being replaced by younger, less-experienced, higher-risk-performing superintendents.

Job performance. Solid job performance will always significantly minimize the risk of job insecurity like no other factor – not withstanding the omnipresent political environment that generally permeates golf course operations.

While any one of the above readily available techniques will significantly enhance superintendents' (and golf professionals' and managers') job security, the collective application of these measures will provide better job security than can be found any place within the working world, short of owning a business.

Superintendents will negotiate more secure jobs only when they're comfortably secure within themselves, with the value of their work product and negotiating with employers as one secure party talking to another. GCN



Jim McLoughlin is the founder of TMG Golf, a golf course development and consulting firm (www.TMGgolfcounsel.com) and is a former executive director of GCSAA. He can be reached at golfguide@adelphia.net.

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Getting ready

PLANNING AHEAD AND GETTING ASSISTANCE FROM VOLUNTEERS AND SUPPLIERS HELPS PREPARE A COURSE TO HOST A MAJOR TOURNAMENT

by
JOHN
WALSH

Q Why was the course selected to host the PGA Championship?

More than anything else, the PGA of America was intrigued with the mystique of the venue. There's nothing else like it in America. From a logistics standpoint, we held the 1999 Club Professional Championship, which went over quite well, and the PGA of America was excited with the record setting attendance at the CPC. The course seemed to fit well with the galleries, so that is another reason why it looked at Whistling Straits.

GOLF COURSE NEWS
INTERVIEWS DAVID
SWIFT, SUPERINTENDENT
OF THE STRAITS
COURSE AT WHISTLING
STRAITS GOLF COURSE
IN KOHLER, WIS.

Q How does the selection of the course differ from other tournaments?

The scope of the event. There were millions of people viewing the Championship and as many as 50,000 to 60,000 people a day on the golf course. Being able to move the people around safely was the No. 1 thing we planned for. We built a lot of roads and spectator viewing areas to make it more accessible for people to watch golf.

Q How far in advance were you notified that you were hosting the PGA Championship? Was it enough time to prepare?

We found out in January of 2000, and preparation started that day. We had just enough time for such a young course.

Q How old is the course?

We opened in July of 1998, so it's six years old.

Q What is the first and last thing you did to prepare for the tournament?

The first thing we did was move a lot of roads around so we could move spectators

through, and get equipment, personnel and vehicles safely on the golf course. Secondly, from the golf course maintenance end of it, we built a few extra tees and bunkers. Then I paid attention to the agronomics and made sure our maintenance programs were in place so we were going to be ready turfwise. We started aerifying the greens aggressively in 2001, 2002 and 2003, so this year, we were prepared. Same with the fairways. With the fine fescue fairways, they thrive in sandy soil, so we started a topdressing program so we could maintain championship conditions.

Q Did you change your overseeding practices?

We started overseeding fescues. We've done it twice in the past 12 months with great success, with a few newer varieties, and they've been good so far.

Q What restrictions were put on golfers during tournament preparation?

There weren't any restrictions on everyday golfers. We stopped having excessive associate play a year ago to give the golf course a bit of a break, but we didn't have any special requests of our guests. The last day for public was July 31, so we had nine days to heal up the course from traffic, ball marks and divots. It was just enough time. I know other superintendents that have hosted other championships that don't get that long – members play right up until tournament starts.

Q Does it depend on whether it's a public or private course?

It may have a lot to do with it. We got lucky. Mr. Kohler (president of Kohler Co. and owner of Whistling Straits) and Steve Friedlander, the general manager and director of golf, felt it was important to give

the golf course a break and let it heal to be prepared for championship conditions.

Q What course-design changes did you implement before the tournament?

We narrowed the fairways. We used to have 37 acres of fairways, and we narrowed them down to 21 acres. We changed a lot of fairway contours, the widths, the landing areas. The overall acreage was drastically reduced, almost 60 percent of what we used to have in play.

Q Did you lengthen the course?

We built three different tees and lengthened the course by about 100 yards, but the weather dictated what tees were used championship week. We simply provided the PGA of America with additional options.

Q What parts of the course needed to be improved?

Definitely the fairways. The quality of the fairways was slowly improving every year, and we felt we had to be aggressive and stay on the topdressing program. That was probably the slowest part of the improvement. We had to do an awful lot to prepare them, along with the aerification of the greens. The greens hadn't been neglected, but they hadn't had the extra attention because of the long construction process, so we wanted to go in there and aggressively tend to the greens to make sure that we could reach championship speeds and have healthy turf going into the championship. I'm really glad we started early on our preparations after hearing some of the players' compliments that week.

Q Is there anything you regret doing?

Looking back, no. We gave it 100 percent the whole time. Because with the time



Photo: Todd Dacquist

frame we had, we did as much as we possibly could. But there's still more to do. We have the Senior Open in 2007, so we're going to get back out there.

Q What additions were made to the maintenance crew?

This year, we brought in 10 associates more than normal. A lot of it had to do with bunker maintenance. The bunkers needed a lot

of attention. We have more than 1,000 bunkers on the golf course, so we definitely wanted to make sure we kept up with them this year in case we had any weather and washouts. We also wanted to make sure the drainage was right.

"I'm awfully proud to have been part of the championship, to have worked with such a good crew and to have made the championship the success that it was."

We also recruited a bunch of guys that can work well on a team. That was most important – building a team. We have a great team. I wanted to make sure during the last few years going into this championship we definitely had the right people working on our team.

Q How many superintendents did you bring in?
Of the 45 volunteers that we had, many of them were superintendents and assistant superintendents.

Q Explain the brotherhood of other superintendents coming to help you out?

The good thing about the Golf Course Superintendents Association of America is that everyone is willing to help each other out. And the best thing about golf course superintendents is they're not afraid to share information, share ideas and help each other out along the way. I feel fortunate that I have a lot of superintendent friends in the business that were willing to come and help for a week – giving up a full week of their time to come and help; and not only do whatever is asked of them, but share ideas and input. Hopefully, I get as much out of them as they get out of me.

Everyone was supportive. It was a lot of fun. I had 20 guys who are in the business helping me, and they all knew what to do. We mentioned what we're going to do each day, and then they went out and did them like they've been working here for years. It was great. I trusted them because they knew

Q What are you responsible for outside of the actual course?

Nothing. Fortunately, for me, I don't have to worry about anything outside the ropes. So tees, greens, fairways and bunkers, and that's it. It keeps me focused. With the PGA village going up and all of the construc-

tion of the village and everything that went on, I didn't have to worry about that one bit. I'm fortunate to have Mike Lee, director of golf course maintenance at Kohler's four area courses, because he's directly involved with everything going on in the village. He is able to delegate work.

Q How often does Whistling Straits host tournaments throughout the year?

Not very often. We have resort guests every day of our season, so we haven't had many tournaments. The only other tournament we've hosted is the 1999 Club Professional Championship – that and the championship this year and the 2007 Senior Open.

Q Do you like it that way or would you like to see more tournaments?

I'd like to see more tournaments, but with the Straits Course, it's a different atmosphere. Blackwolf Run has the state open every other year, and it has a few other tournaments every now and again. I like how it is right now, preparing for one big tournament and setting a high goal. A week before the tournament, I felt the greatest satisfaction reaching that goal.

Q Did you receive any feedback from the golfers about the condition of the course throughout the tournament?

Tiger Woods came up the week before the tournament and played the course and he said it was in immaculate condition. Players commented on the greens – the greens were some of the best greens they played on all year. They played true and rolled perfect. Everybody liked it. A lot of them liked the design, which was great.

Q Hosting the PGA Championship has to be a great boost of confidence for you.

The whole crew was pumped because we had been doing so much work to the golf course the past couple of years, from the aerification to the sand topdressing of the fairways. It finally all panned out. Everybody saw their hard work pay off. All those long days spent doing the same job over and over again. We got the turf conditions to where we wanted them. The crew enjoyed it. They got to sit back and watch 50,000 people watch Tiger Woods play on their product.

Q How did you feel before and during the tournament?

After attending Oak Hill in Rochester, N.Y., last year and coming back to Whistling Straits, we knew we still had some work to do, and I felt a little bit nervous. But we started planning for the tournament a long time ago. I met with Mike Lee and my assistants weekly. The nervousness went away as we got closer because we spent so much time planning.

About a month before the tournament, it was to the point where there was nothing else we could plan for. We had a meeting one day, and we didn't have much to talk about. We talked about how we were going to go on vacation after the tournament. We realized we planned and were waiting for everything to happen. The golf course has been brought to a new level and peaked for the tournament.

As the event came closer, the more comfortable I felt. The week of the tournament was quiet around here. We didn't have one little hiccup. I felt relaxed and didn't feel stressed out.

Q Is hosting a tournament like this a resume builder, and what does it do to your ego?

It's definitely a resume builder. I'm awfully proud to have been a part of the championship, to have worked with such a good crew and to have made the championship the success that it was.

As far as ego, I got a lot of compliments, and every compliment I got I passed on to the crew because I'm only as good as they are. I hope the last thing that gets bigger is my ego. I try to be modest about it because I'm just one of many who prepared this golf course to get it where it is. I'm not talking about just the maintenance staff, I'm talking about the guys who built it. When I first came here six year ago, the guys that built the course were still here,

and I worked with those guys. I worked for Mr. Dye. They're amazing. Those guys have such an eye for detail, and they are good at what they do. And all the maintenance guys that have been here since, including the guys I have here now. There are hundreds of people. I couldn't begin to name them all.

Q What did you learn during the tournament?

I've learned that the more preparation you have in the beginning, the better off you'll be. We tried to plan for every little thing that could go wrong. Everything went smooth because of all the preparation we did. The best part about it was seeing all the people who worked with us, especially the guys in the crew, rise to the event. The guys stepped it up and took pride in their work, and that's the most fun to me.

The most satisfying part is seeing everybody work together. You have 140 people on the golf course for two hours in the morning, and every person is working for the same thing: they are trying to make the golf course as good as it can possibly be. The attention to detail these people have is unbelievable.

Q Is there such thing as perfection on a golf course?

The problem we have in this business is that things are never perfect. That's why we work 80-, 90-, 100-hour weeks, because the course is never where we want it to be. We try to manage a constantly changing environment, and if it's perfect, it's just a moment in time. Are we perfect, no. But we are as good as we can be. We've given it 100 percent. We have nothing to be ashamed of.

Q Where would you go next in your career?

Everybody has a lot of goals, but with everything that is going on here at Kohler, I don't plan on leaving. We've got the Senior Open in 2007. That's another great opportunity to host another major tournament. I have it good here. I have a good crew, and I work for a good company on a beautiful golf course.

Q Were there any turfgrass problems or diseases that you dealt with that troubled or concerned you?

We had a wet spring. We had about 17 inches of rain in 35 days. We lost a little bit of grass because of the wetness, and fescues don't like being in real wet soil. But

that's typical, and we understand how that goes and did everything necessary to bring the turf back.

Q Were there any changes or additions to the equipment?

We had great help from the people at Jacobsen. We use LF 1880s, a lightweight, triplex fairway mower with 18-inch reels. They supported us by bringing eight extra machines. We have four machines that we lease, and we had eight of their machines. They also brought us 22 greens mowers to use during the tournament, and they had their best mechanics here. They made a lot of promises and came through on every single promise. They wanted this as bad as we did. They wanted the tournament to be a success.

Q Were there any other challenges or problems you dealt with?

The weather. A year ago, we had a cold spring. This year we had a warm spring. With a warm spring, we had a lot of rain. It was frustrating because we had so much rain in a short period of time, and we couldn't do much. We were struggling just to get the turf mowed. Other than that, the weather was pretty good.

Q What is your relationship with the PGA during tournament prep?

The PGA sends its senior director of tournaments, Kerry Haigh. He met with us several times a year. He came out, and we walked the golf course — myself and Mike Lee and Steve Friedlander. We went over every little detail and made sure everything was in line with what came up.

Q What are some things you look at?

Definitely the mowing heights for the fairways and the roughs. We paid close attention to the mowing lines and what we needed to do to them to make it look and play like it did during the tournament. We had to work out a lot of bugs. When were we going to mow? What were we going to mow with? What height works, according to what Mr. Haigh wanted.

Q Are those heights shorter than what you typically cut?

They are little bit longer than what we typically have. For normal play, we cut our rough at about 3 inches. For the PGA, they were 4 to 6 inches, so was a little taller and a little thicker.

Q Are you doing anything to the course now or are you going to leave it exactly the way it is?

That's up to the United States Golf Association and Kohler Co. The USGA will be coming in next year to start preparing for the 2007 Senior Open, so I don't know what's going to happen until then. We're going to go out and seed a lot of the areas of the rough that are getting trampled. We put a lot of seed in places where we don't think the grass is going to come back. The gallery trampled in the seed, so it got good seed to soil contact. Now that the tournament is over, we'll get germination of the seed, and the grass will come right back up.

Q What advice would you give to other superintendents who will prepare for a tournament of this magnitude?

Start your preparation early. Get all your planning done, as much as you can as early as you can, and fine tune every little detail because the sooner you have that stuff done, the easier you'll sleep at night. I felt under a lot of pressure during the initial planning stages. There's a lot to think about and a lot to plan for. The more plans that we had in place and the more decisions we made early on, the easier it was to move on to the next decision. It was also easier to find out where we made mistakes in our planning and what you had to change. The earlier one starts, the easier it is along the way.

Q Anything else?

Another important thing is building the right team of associates. We have a lot of young guys that work their butts off, and they should be proud. It doesn't matter if I get a compliment or Mike Lee gets a compliment. Those are the guys that are doing all of the work. Those are the guys that are here every morning at 5 a.m. ready to go and stay as late as we ask them to.

I'm glad I built the team I did leading up to the championship because I don't know where I would be without half these guys. Some of the things these guys have done and the way they've done it was amazing. All the guys worked hard to get the golf course the way it is. It's in outstanding condition, and we're proud. I'm more proud that I brought these guys here. I got them here because they're the ones that made us all shine. GCN

David Swift can be reached at david.swift@kohler.com.

War over water

AS WATER USE CONCERNS REGULATORS, SUPERINTENDENTS WORK TO IMPROVE IRRIGATION EFFICIENCY AND THE INDUSTRY'S IMAGE

by
JOHN
WALSH

Golf courses use a lot of water – more than 476 billion gallons of water annually in the United States, according to a study by Dave F. Zoldoske, director of the center for irrigation technology at Cal State and international water technology at Fresno State. In particular, water consumption is the highest in the Southwest, which uses an average of 88 million gallons annually per course, the study says.

This wouldn't be such a problem if suitable water sources weren't in short supply. Jim Barrett, president of James Barrett Associates, an irrigation consulting firm, says 97 percent of the world's water isn't fit for irrigation; 3 percent is fresh water, 2 percent of which is locked up in polarized caps and glaciers; and 1 percent isn't renewable.

"Water is going to get chopped off, and we need to be prepared long before that," Barrett says.

Water usage is a chief concern for golf course superintendents who are fighting for availability and battling negative public perceptions that golf courses waste water. Actually, many golf course superintendents say they use water efficiently, thanks to precise irrigation systems. Superintendents say the industry needs to communicate its best water management practices to regulators, legislators and the public.

Not only a Western problem

Conservation has become especially important as water sources dry up throughout the country. Doug Bennett, conservation manager for the Southern Nevada Water Authority, says



Barrett

the region is in the fifth year of a drought cycle. The Colorado River is producing one-fourth of its normal flow; Lake Mead dropped 90 feet during the past five years and is 50 percent to

capacity; and Lake Powell dropped 100 feet and is 40-percent full. The lakes are the two largest man-made reservoirs in the West and are shared by seven states and Mexico, according to Bennett.

"Everyone is operating under a drought plan," he says. "Water is scarce. We need to conserve to maximize use of available water and build reserves."

In fact, most golf courses in the Southwest that are connected to a municipality receive potable and reclaimed water.

"They also can obtain water rights from the state, but they would have to transfer them from another owner because all of the rights are spoken for," Bennett says. "Some golf courses may have wells in addition to a municipal connection."

Of course, conditions vary throughout the country, but the worst drought area is the lower Colorado river base – Colorado, Nevada and New Mexico – according to Brian Vinchesi, president of the Irrigation Association. Golf course superintendents are coping with this drought via regulation. The amount of water they use depends on the number of turf acres and type of turf. For example, Phoenix restricts the amount of turf a golf course can have, and in Las Vegas, 6.5 acre feet of water per one acre of landscaped area (energized with an irrigation system) is allowed annually.

Water use on golf courses is a challenge in the East, as well. Golf courses in that region have permits allowing a certain amount of water.

"There is a lot of competition for water," Vinchesi says. "Everyone needs a water withdrawal permit, and nobody wants to do it because it's expensive and time consuming. In New Jersey, it's impossible to get [additional] water for a golf course. Connecticut



Vinchesi

and Massachusetts aren't far behind."

And there is temporary regulation throughout the country.

"States have legislated water usage," Barrett says. "I certainly wouldn't be surprised if we see more strict regulation throughout the country. For example, people are debating laws about restricting water usage in New Jersey."

In Atlanta, a law almost passed requiring local municipalities to shut down golf course irrigation during a drought, and in Massachusetts, there has been a push to pass a law banning outdoor irrigation, according to Barrett.

"We all know about problems in the West, but it's not a Western problem," he says. "Virginia, North Carolina, Alabama, Florida and Georgia have been fighting over shared rivers. There are plenty of fights for water."

Georgia, Florida and Alabama are in state supreme court fighting over the Chattahoochee River, which separates Georgia and Alabama and runs into Florida, says Mark Esoda, a certified golf course superintendent at the Atlanta Country Club.

In Georgia during the past few years, there also was a 10-inch-per-year deficit of rain that caused a mandatory water-usage restriction in the state, Esoda says. Golf courses are no longer bound by the restriction unless there's a level-two drought, which the state determines by using nine different factors.

Each region of the country has different rainfall and water tables, so everybody shouldn't suffer at the same time when there's a drought, according to Dean Graves, certified golf course superintendent at the Chevy Chase (Md.) Club.

Improving its image

While water is a limited resource, it's a must for golf courses to stay green – and profitable. The public must be educated about this fact, Vinchesi says.

Steve Swanson, golf course superintendent at the Siena Golf Club in Las Vegas,

The issues related to droughts and golf course water use present concerns throughout the country, but are most recognized in the West.



Photo: The Toro Co.

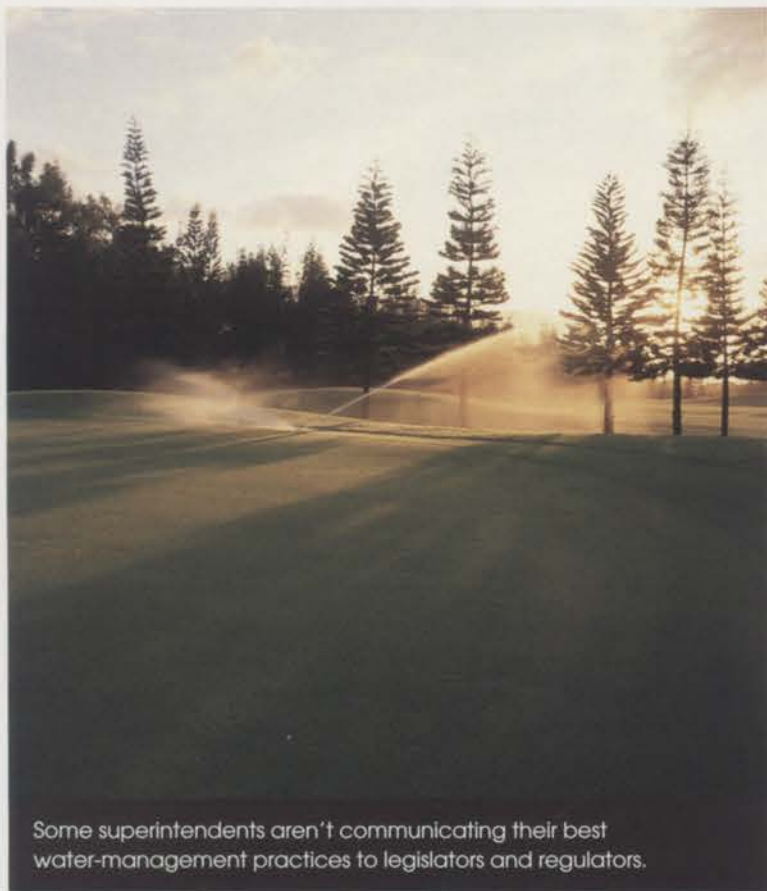


Photo: Rain Bird

Some superintendents aren't communicating their best water-management practices to legislators and regulators.

says the Golf Course Superintendents Association of America needs to promote the best water management practices superintendents use to combat perceptions that golf courses waste water.

However, Swanson says: "Local chapters can only do so much. Communities should pool money to generate something that is effective to erase the image that golf courses are cesspools of waste."

While many superintendents are aware of and employ best water management practices, many aren't diligently recording or communicating them to regulators and legislators, Esoda says. Recording and categorizing practices are musts.

"Golf courses are considered consumptive water users," he says. "We can show people how considerate we are with water. There is a lot of money in the ground to make sure we are watering our courses properly. We have to log our practices to show neighbors and regulators.

"It's economics, too," he adds. "We don't want to waste water because it's an expense."

Barrett blames legislators' lack of knowl-

edge on the industry itself, but acknowledges the GCSAA's and the U.S. Golf Association's educational efforts.

"Compared to homeowners, golf courses are a tiny user of water, and people maintaining golf courses are professionals and understand about overwatering and its effects," he says. "The agriculture industry uses millions more gallons than turf does. Golf is a small percentage of the overall scheme of water users. Water usage on golf courses is a misperception because they are big and visible, but that doesn't mean we're not wasting some water and power through poor management or systems."

The industry hasn't gotten its message out as well as environmental groups have gotten theirs out, Barrett adds.

"People need to look at how many jobs depend on golf courses and how that impacts the economy," he says. "That information needs to get through to regulators who talk about cutting off water."

But the industry has addressed the water quantity concerns by developing more efficient and effective irrigation resources,

A smarter use of water

Education, information and more precise irrigation systems have led to more effective and efficient applications of water on golf courses. Superintendents are armed with more information than ever before, which leads to best management practices, according to the Golf Course Superintendents Association of America.

Using more precise irrigation controls to water areas of a course differently and adding weather stations and remote controls help superintendents conserve water.

"That sounds expensive, and it is," says Brian Vinchesi, president of the Irrigation Association. "You're doubling fairway costs with separate irrigation systems. It's becoming more popular."

Auditing an irrigation system also helps.

"A superintendent can see where he is wasting water and what needs more watering," Vinchesi says. "New nozzles help with that, but they are not the answer on every course. A lot of superintendents don't know how water is put through sprinklers, and an audit shows you that."

"New equipment is costly, and not everybody can afford it," says Steve Swanson, golf course superintendent at Siena Golf Club in Las Vegas. "At \$7 a pop for every nozzle, and if you have 2,000 irrigation heads, some can't just change the nozzles. But in the desert, since we use so much water, there's probably not one course that's not up to date with the best irrigation system."

It's all about uniformity and control, according to Jeff Kiewel, national sales manager for Rain Bird's golf division.

"We're constantly working on putting out the right amount of water in the right spots," Kiewel says. "Nozzle and rotor engineers are working on getting better coverage and uniformity. Nozzles are getting replacements every year. Central control also is key. We're focusing on efficiency."

Dana Lonn, director of the center for advanced turf technology for The Toro Co., says the company has spent time and money improving the quality of its nozzles because water uniformity is critical.

"Superintendents always water to the driest area, and if you have poor uniformity, you're wasting water," Lonn says. "The 800 series has been improved. The nozzle is more precise. The nozzle is a sophisticated device. We'd like it to be perfectly uniform, but it's almost impossible."

"There's been a lot of enhancements in central control software," he adds. "In the past five or 10 years, superintendents have gone to more sprinkler heads and more control. Software enhancements make it easier

to adjust. It's more money, but it gives one more capability."

Jim Barrett, president of James Barrett Associates, an irrigation consulting firm, says superintendents can let more areas be native and let drought-tolerant grass grow tall to reduce water usage. Other ways to reduce water usage include cutting turfgrass less frequently and using wetting agents, quick-coupling valves to handle smaller problem areas and species of grass that play well and need less water.

"If these practices were to take place, superintendents need to communicate to members first and be proactive and explain why," Barrett says. "This is more of the direction we should be going. A lot of course maintenance areas that aren't related to the game use a lot of water for aesthetic reasons. Those areas could cut back on water consumption."

When drought became an issue in Nevada, Swanson says his course was ahead of the curve in trying to be more efficient using water.

"I have ryegrass on 95 percent of the golf course," he says. "There is little buffer room. Most people have Bermudagrass and have cut back on water. We converted 35 acres back to a native grass design and reduced water usage 35 percent."

Siena is a public daily-fee facility, and the water Swanson uses hits the bottom line.

"It's imperative that I run water efficiently," he says. "We're constantly updating our programming systems - daily, monthly and yearly."

Pumping water from a municipality to a course more efficiently can also be improved. Integrating local pump station controls with a course's irrigation control system exists but needs to be refined to achieve better efficiency, Kiewel says.

"Right now the interface is a 'Hi, how are you,' and the options are limited," he says. "The software isn't the same. Everybody has that issue, and we want to eliminate that. We're going to get it over time. We're improving efficiency 10 percent a year. That's a lot of water. We're working on nozzles and rotor controls. Research and development is working on system integration. There is room to improve. The gap is smaller this year than last year."

Additionally, effluent water use is gaining acceptance, according to the GCSAA. Oftentimes, the issue is the inability of a municipality or district to deliver water to the golf facility. But there's little doubt effluent water use will continue to rise, especially as it becomes more economical. GCN



Photo: The Toro Co.

Compared to homeowners, golf courses are a tiny user of water, according to consultant Jim Barrett.

which have helped position golf as a responsible consumer of water, according to the GCSAA. The association has used education and information as a strategy to work with its chapters to develop policy and regulation on a local level. In particular, it has worked with its chapters to become involved with water authorities so policies can be established that result in less water usage. Getting its members to serve on water panels and community groups also has been important in educating policymakers, and feedback the association has received indicates superintendents are oftentimes the most informed people on these boards.

Additionally, the GCSAA says it has positioned golf courses as key assets of communities because they provide recreational, financial and environmental benefits. The association also has addressed golfers' expectations for wall-to-wall green courses by communicating that grass doesn't have to be green to be in high-quality playing condition.

Another positive aspect of golf courses is that they are the most conservative users of water, Esoda says.

"And we're environmentally friendly because we'd kill the grass and have a lot of runoff if it was watered too much," he says.

Superintendents are looked at more like environmentalists than they were five to eight years ago, Graves says.

"Golf courses are more of a benefit for the environment," he says. "Chevy Chase Golf Course provides enough oxygen for the residents of Chevy Chase. And due to research, the GCSAA is getting out the good word, but there is still a long way to go. We're an easy target. Five percent of the population plays golf, and we'll be lucky if

one legislator plays golf and understands what we're doing."

Working with legislators

Promoting best water management practices and the benefits of golf are ways to help prevent legislators from restricting water use too much. Georgia is putting together a planning commission for water management and has to have a water management plan soon.

"We need to work with the commission to make sure golf isn't restricted," Esoda says. "Golf courses in Georgia have been lobbying state legislators to make sure golf is recognized as a water conservator."

Esoda says that by 2006, the GCSAA membership in the state wants at least 75 percent

of its members to use and track best water-management practices so it can show state legislators how they use water.

"When dealing with regulators, you want to talk to them about usage," he says. "They want to know the volume and know how water is managed. When you talk to legislators, you want to explain to them that golf courses are a tax base and income is generated in the state as a result of golf tournaments. You have to explain the business of it and how much of it is an integral part of the economy."

Suppliers are helping, too. Rain Bird's golf division is involved in areas to educate and influence regulators and legislators, according to Jeff Kiewel, national sales manager.

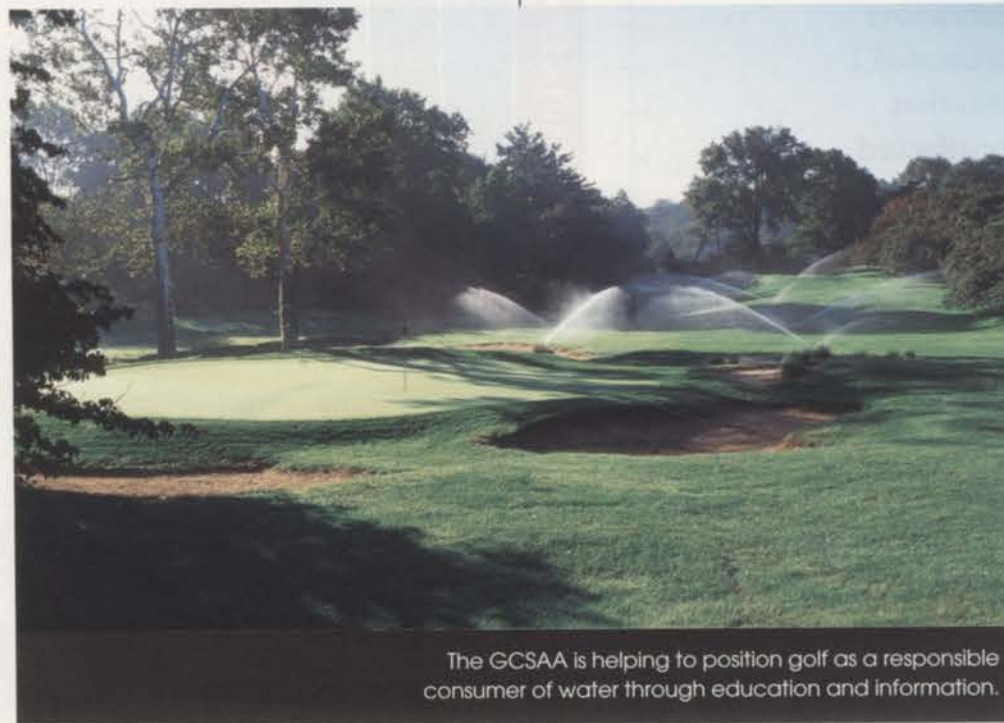


Photo: Rain Bird

The GCSAA is helping to position golf as a responsible consumer of water through education and information.

"We're involved with the federal government to establish water-use guidelines," Kiewel says. "We're in the middle of the fray between the Environmental Protection Agency and golf course development. It's important that we're part of that discussion in finding a middle ground."

Water restrictions

Superintendents are dealing with water restrictions throughout the country. For example, there are regulations for golf courses in Maryland when droughts occur.

"We can't water the rough and have to hand-water for certain things," Graves says.

"We can water greens, fairways and tees. We can't water from 9 a.m. to 9 p.m."

The former governor of Maryland tried to mandate that golf courses reduce water usage by 70 percent, which is unrealistic, according to Graves.

"We have an efficient irrigation system, and we manage water much better," he says. "We have divided each fairway into six areas. We irrigate each one differently. Each area depends on sun, shade, hills, breeze, etc. Technology is enabling us to segregate a golf course and have it run by a computer."

In Nevada, Swanson says Las Vegas-area superintendents have met with the Southern Nevada Water Authority and discussed water-usage issues.

"It took time to educate the Water Authority about what we needed to service the golf courses and what the authority needed to accomplish," he says. "Ultimately, the goal of the authority was for us to use 6.5 acre feet of water. All superintendents in town fully understand the ramification of the situation. They understand how serious the situation is."

"(Las Vegas-area) golf courses were given a choice of being told when to water or having a budget to stay within," Bennett adds. "Overwhelmingly, they chose the budget and said: 'We'll manage it.'"

Bennett says courses in Las Vegas have implemented a drought plan with mandatory seasonal watering schedules.

"Most water is wasted during the spring, fall and winter – not in the summer when it's the most restricted," he says. "There are times of day when one cannot water."

Although, Bennett says some superintendents are underbudget for water use, and the ones who irrigate a lot get the attention.

"Hand-watering has helped," he says. "The golf industry reduced water use 10 percent during the past year. They have stepped up to the plate. They should be commended."

Superintendents' reactions

Overall, superintendents react differently to the public's concern about water usage. Some don't do anything unless they're forced to, some are more proactive, and some like watering more than others.

"If you have a really checked-out superintendent, he will do some of water-use-reduction practices on his own," Barrett says. "Some guys won't change so easily because they don't want to lose their jobs because of a brown fairway. They are doing what they're told."

Swanson says many golf courses in Las Vegas are converting peripheral turf zones to drip-style landscape due to the systems water banking abilities. Drip-style landscape, on average, will consume one-fourth the water of a conventional overhead spray



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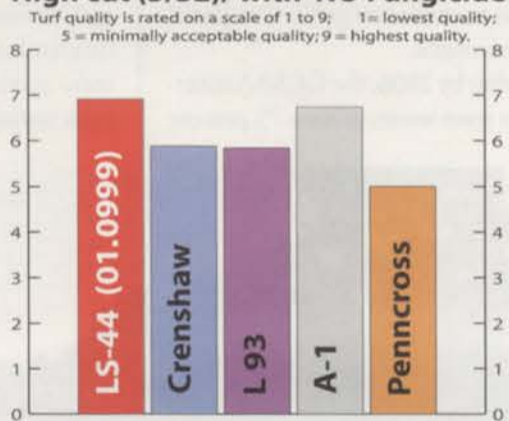
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According to a recent GCSAA survey, superintendents generally are doing more with less when it comes to irrigation – 54 percent are using less water on their golf courses than they were 10 years ago, while only 27 percent are using more. Of those using less water, almost half (39 percent) are using 1 percent to 25 percent less water than they were 10 years ago, and 14 percent said they are using between 26 percent and 50 percent less water than a decade ago.

Ripple effect

Water restrictions influence changes in golf course design, grass type, amount of turf on the playing surface and irrigation systems. More courses in the future might have narrower fairways and browner roughs. Researchers are even working on breeding new grasses that retain color and will be more drought tolerant. However, using these new breeds would require many courses to rip up existing turf and reseed.

“As new technologies come out, we apply them,” Swanson says. “We’re on the cutting edge of water use for golf courses.”

But if a course doesn’t have access to that much water, it will have to cut back on the amount of turf it has. In Las Vegas, there’s a turf buy-back program.

“The program will pay you to sell turf so you can put in other turf that doesn’t need that much water,” Vinchesi says. “But without water you have no turf.”

Suppliers are also contributing to advancements. Dana Lonn, director of the center for advanced turf technology for The Toro Co., says the industry will move toward sprinkler heads that control smaller areas.

“There’s also a lot of work being done in the industry to enhance evapotranspiration predictions and standardize equations because a lot of irrigation is done by feel instead of science,” Lonn says.

Work also is being done on soil moisture measurement sensors that have been applied in agriculture but now are being applied in the turf industry to help superintendents decide the timing of turfgrass watering, Lonn says.

“We’re also starting to see subsurface drip irrigation,” he says. “It won’t be everywhere. It works better in sandy soils instead of clay. We’ll see more and more of it. Developments in this area are like most things – necessity is the mother of invention.”

Toro funded research that tries to understand turf and the way it uses water, as well as how to use poorer quality water on turf, which, in turn, will create a need for more

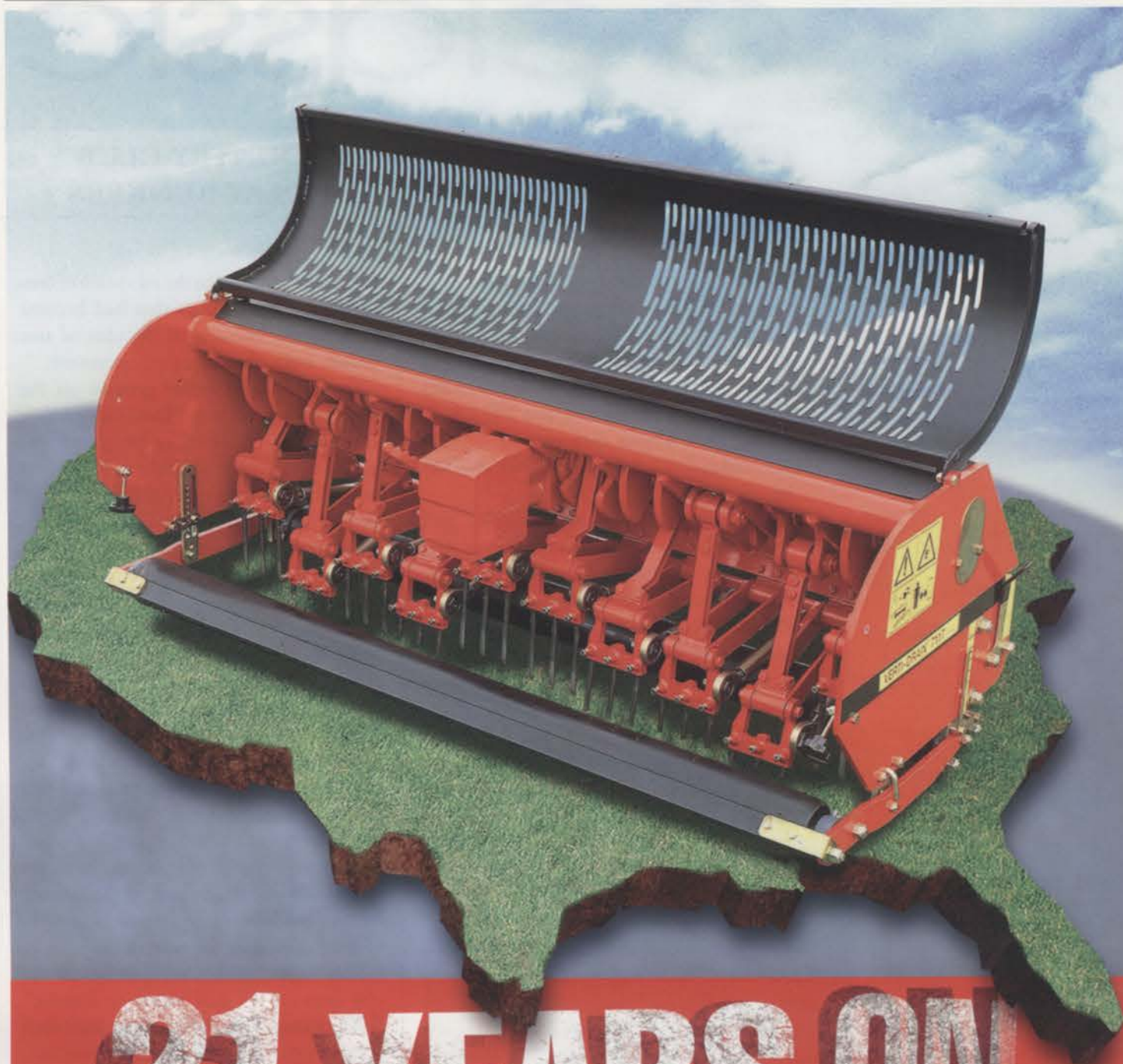
corrosion-resistant irrigation parts.

And Kiewel says Rain Bird is designing a system so that superintendents can comply with new restrictions in the Sun Belt areas.

In the end, the water-use issue will continue to be a problem because there’s a dry spell almost every year, Graves says.

“It’s not going to get any better; it’s only going to get worse,” Vinchesi says. “Many people don’t understand the pressure water use will come under.” GCN

John Walsh is the editor of Golf Course News. He can be reached at jwalsh@gie.net.



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Restoring a classic

CENTURY-OLD MIDLOTHIAN COUNTRY CLUB UPDATES, RELOCATES OUT-OF-PLAY BUNKERS

by
HAL
PHILLIPS

In 1998, Midlothian Country Club celebrated its centennial by junking its 1960s-style clubhouse and replacing it with a more fitting, Colonial-revival style model. With another anniversary looming – Midlothian was site of the 1914 U.S. Open – the Illinois club revived its 106-year-old golf course by completely renovating its bunkers.

Working in concert with certified golf course superintendent Dave Behrman and with sister construction division Golf Creations, Marengo, Ill.-based Lohmann Golf Designs recently finished its refurbishment of Midlothian's 82 bunkers in a classic, steep-faced, flat-bottomed style – a look club members favored and even help select. LGD's mas-

ter plan also resulted in the relocation of dozens of fairway bunkers that had become meaningless because of decades of tree growth and technological advancement.

Golf Creations broke ground on the \$882,000 project immediately after Labor Day in 2003. Ultimately, progress came quick. Eighty percent of the new bunkers were finished before snow fell in winter, and all of Midlothian's renovated bunkers debuted shortly after the course reopened for play in 2004.

Improvement needed

Midlothian's vintage course dates to 1898. It was designed by H.G. Tweedie, who laid the original tracks at a host of esteemed Illinois clubs, including Exmoor, LaGrange, Bryn Mawr and Rockford. Yet throughout time, Midlothian developed troubling issues common to many designs of this vintage. The main problem: Trees had grown between the playing corridors and minimized the impact of the course's fairway bunkers, many of which had become obscured by the encroaching forest.

"During the 1960s, the club lost all the elm trees on the golf course to disease," Behrman says. "So, the members instituted a very aggressive tree planting program, dedicated a lot of money on an annual basis and never stopped. The golf course became so overplanted that many fairway bunkers were basically surrounded by trees. The Chicago District Golf Association didn't even consider them hazards anymore."

CDGA officials told the club its course rating would never increase until the bunkers were brought more into play.

Remedying this situation came down to

two choices: removing scads of mature trees and refurbishing the bunkers as they lay or moving the bunkers closer to the fairway. LGD founder and principal Bob Lohmann opted for the latter.

"Hundreds of trees would have been sacrificed to bring these fairway bunkers back into play where they lay, and frankly, that just wasn't going to happen," says Lohmann, a past president of the American Society of Golf Course Architects. "Still, we worked with the club for more than five years before deciding to re-establish these bunkers away from the tree line, closer to the fairway corridors. Midlothian is fortunate because its fairway widths remain generous. There was plenty of room to reintroduce these hazards without sacrificing the playability of the course.

"We've also repositioned these bunkers based on modern club and ball technology, re-establishing them farther down the fairways, in some cases, to influence the appropriate target zones and landing areas," Lohmann says. "After all, today's balls are flying a lot farther than they did in 1898."

Practical restoration

When it comes to renovating vintage courses like Midlothian, Lohmann is a proponent of what he terms "practical restoration," whereby classic design features are reintroduced in the context of modern playing standards and maintenance expectations.

"For example, there weren't more than a handful of trees on this site when the Midlothian course was built 105 years ago," he says. "To restore the bunkering in an orthodox way, exactly where Tweedie placed them, would have meant the removal of

AT A GLANCE:

Midlothian Country Club

Location:	Midlothian, Ill.
Course type:	Country Club
Type of project:	Bunker renovation
Project began:	Labor Day 2003
Project completed:	Spring of 2004
Number of bunkers:	82
Type of sand:	Meyers Mason FA-9
Cost:	\$882,000
Design firm:	Lohmann Golf Designs
Architect:	Bob Lohmann
Builder:	Golf Creations
Yardage:	6,708
Par:	71
Superintendent:	Dave Behrman
Club manager:	Tim Habjan
Head professional:	Michael Knights



Bunkers at the Midlothian Country Club in Illinois were refurbished in a classic, steep-faced, flat-bottomed style.

Photo: Kevin Horen

hundreds and hundreds of trees. That's crazy, and impractical. After a great deal of discussion with the members, we agreed to move the affected fairway bunkers, a strategy that solved the tree problems and simultaneously accounted for modern club and ball capabilities."

LGD also solicited members' input to help decide what form the re-established bunkers would take. Throughout time, all 82 of Midlothian's bunkers – fairway and greenside – had degenerated into rounded pancakes of sand with little character or definition. An LGD-led field trip for members, who toured 10 different area golf clubs, helped determine the bunker style Lohmann employed.

"What we settled on was a style similar to the bunkers we recently refurbished at Knollwood [Country Club] outside Detroit," Lohmann says. "In keeping with the vintage qualities at Midlothian, the bunker style is classic. With sod faces and flat bottoms, the look is undeniably dramatic. And the placement is far more strategic. That combination adds up to practical restoration."

Better bunkers

Using the practical restoration strategy, club members remained involved in some of the project decisions. For example, Midlothian staff members called other clubs and mem-



Members of Midlothian Country Club tested three different types of sand and chose Meyers Mason FA-9 from a quarry in McHenry, Ill.

bers took field trips to receive feedback about different kinds of sand to help select the sand that was used.

"Three different varieties were placed in a sample bunker, and the membership practiced out of each one, then voted," says Todd Quitno, senior architect with LGD. "The winner was Meyers Mason FA-9, from a quarry in McHenry, Ill. We like the sand they chose because it has a nice, light-tan color. It's a good color because, after a year or two, white sand tends to get dirty anyway. It's also very playable, and not too soft and not too firm."

The type of sand and bunker design contributed to improved bunker drainage.

"Of the 82 bunkers we had here, 79 of them had 100-percent drainage failure," Behrman says. "We were constantly pumping and shoveling. If two inches of rain fell, it took us about 16 to 18 hours and 10 men to fix them. That's 180 man-hours to restore the bunkers to what I wouldn't even call acceptable conditions, but the members were so used to these poor conditions, they accepted it."

"Now that we're finished, you wouldn't believe the difference," he says. "We recently had 3.5 inches of rain in one 36-hour period, and there was no water at all [in the bunkers]. They were perfect."

When the project was completed, the golf course featured the same number of bunkers as before, even though some were removed and some were added.

"What's interesting is that it feels like there are more bunkers because now they are properly placed, both strategically and aesthetically, and thus, they come into play and are seen more readily," Quitno says. "Before, the bunkers were lost behind trees and located in other out-of-play areas. Now, they are the focal points of the golf holes."

Behrman also decided to hand-rake the

new bunkers.

"In terms of man-hours, that means the bunkers will require the same or even a higher amount of maintenance," he says. "But we feel the new bunkers are of such a high quality that we've taken the course to a new level. Also, going from mechanized bunker rakes to the hand rakes will result in less disruption to the sand and less contamination in the long term. Hand-raking allows the sand to firm up and stay firm. We didn't want any risk of contaminating the sand during a heavy rain event. It's a trade I'm happy to make."

Behrman says the look of the bunkers – the flat bottoms with strong side mounding – brought character to the golf course.

"It's pretty fantastic what they were able to do here," he says. "Lohmann's guys blended them beautifully; their shapers are artists. We dug two lakes and generated about 11,000 cubic yards of material that we used to blend these new bunker complexes into the landscape. They were able to play out the grades off the back sides of these bunkers much farther into the natural lay of the land. They look like they've always been there."

All the bunkers were sodded and several fairways needed to be adjusted to accommodate the new bunker locations. Behrman's crew made these adjustments by relocating sod.

"We ended up sodding 13 acres of bluegrass," Behrman says. "As for the bentgrass, we moved the bentgrass displaced by the renovation and stored it on several tennis courts that weren't being used. We watered and mowed it and applied snow mold treatments. We kept a sizable portion of it alive over the winter. We stored our practice chipping green in this way, and it came through in the spring beautifully. We had budgeted \$12,000 to \$15,000 for bentgrass and ended



Photo: Kevin Haran

Dave Behrman, superintendent at Midlothian, decided to have the new bunkers hand-raked for less sand disruption and contamination.



Photos: Todd Quitno

up not having to buy any. We had more than we needed.”

Time was a concern, too. LGD overcame time constraints to finish the renovation on schedule. Quitno says the project timetable was always tight and the weather at the time was a big factor in delaying the project’s start.

“We couldn’t break ground until Labor Day of 2003,” he says. “The original plan was to complete all 82 bunkers by the end of 2003, and we nearly finished on time – only because Golf Creations really ramped up its resources at the end of last year and Dave Behrman’s staff helped a lot by doing some of the drainage work in-house. Toward the end of the project, we were doing something in the neighborhood of 10 bunkers a week (start to finish), which is an unbelievable amount. The last few holes were completed in the spring of 2004.”

Financial success

Budget also was a critical factor with this project. Behrman’s crew and LGD worked together to stay on target.

“We spent our \$882,000 budget, which included a \$45,000 contingency fund,” Behrman says. “But the reality is, we brought the work Bob Lohmann did in at \$792,000. Beyond that, we did what we call some add-on projects. We dredged some ponds, installed additional drainage, bought some new equipment to manage the new bunkers, remodeled the entire driving range and built a new practice chipping range. So, we ended up doing about \$90,000 of extra work and stayed within our overall assessed budget of \$882,000, which the club raised through a direct assessment.”

In particular, the club was careful not to detract players or negatively affect the club’s revenue, Behrman says. The course remained open during renovation but experi-

enced periodic hole closings when necessary.

“My impression was that it didn’t hurt us at all, in part because we stayed open the entire time,” he says. “Actually, we allowed for longer hole closings, but Golf Creations did such a fine job, they were quite limited. From my standpoint, there was little to no impact.”

That is until members began to see the new holes, Quitno says.

“When the bunkers were completed with

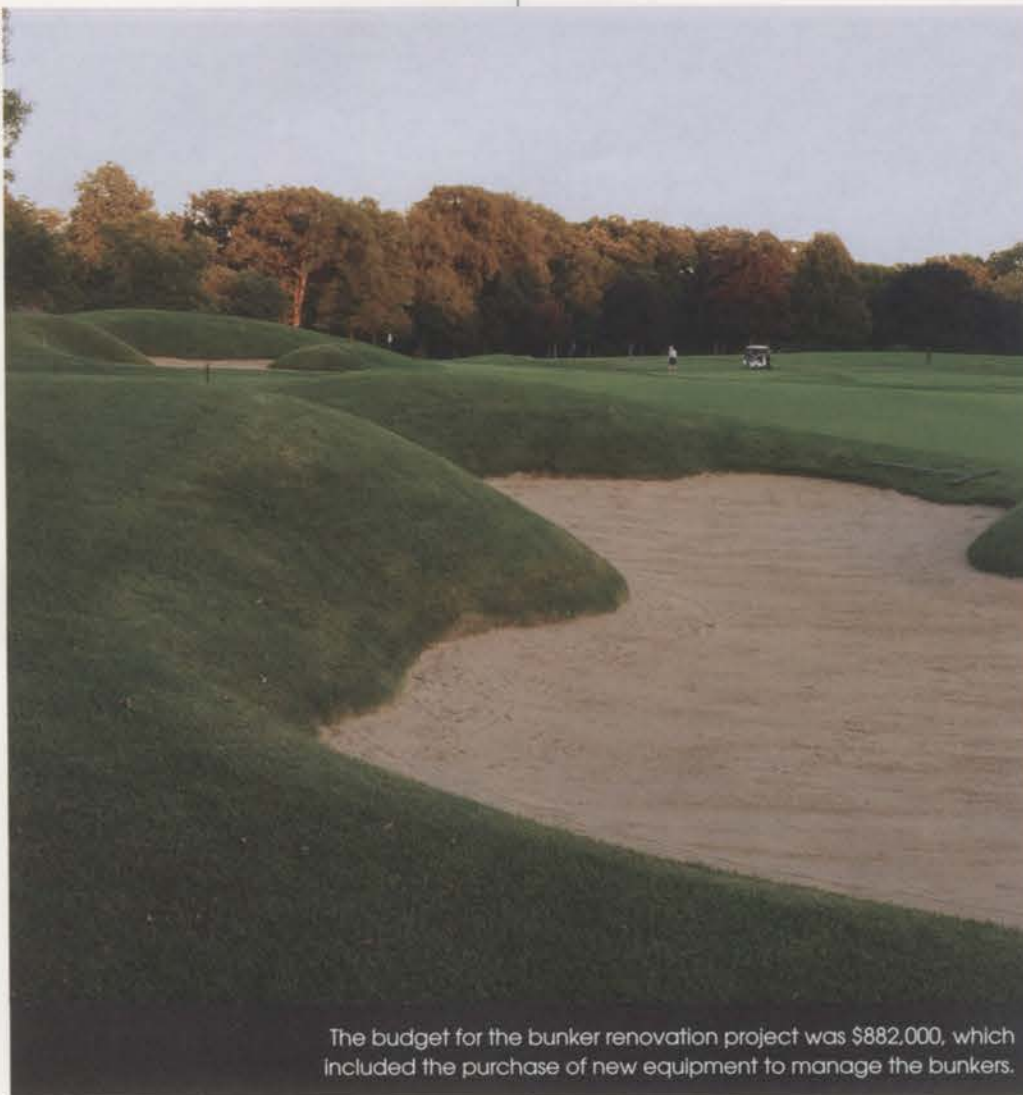
sand and sod, they were roped off for several weeks until they were ready for play,” he says. “The hole closings were not a problem once the membership saw the finished product they were getting. In fact, support really snowballed during the construction phase.”

Lohmann’s experience served him well in this project. He has completed more than 30 original golf course designs. Presently, LGD is working on the Canyata Club in Marshall, Ill., where nine holes are open and another nine will open for play in 2005. Also, the firm’s first East Coast design, the Mattaponi Springs Golf Club at Penola Station in Ruther Glen, Va., opened this fall.

“In some ways, original course design like our work at Canyata and Mattaponi Springs is more straightforward than renovation because you’re dealing with a blank slate,” Lohmann says. “It’s a completely different animal compared to the sort of work we undertook at Midlothian. Older clubs have histories and physical attributes that must be protected and enhanced.” GCN

Hal Phillips is president of Phillips Golf Media and is based in New Gloucester, Maine. He can be reached at onintwo@maine.rr.com.

Photo: Kevin Horan



The budget for the bunker renovation project was \$882,000, which included the purchase of new equipment to manage the bunkers.

Experienced help

HIRING RETIREES SUPPORTS OPERATIONS AT THE SHARON GOLF CLUB IN OHIO

by
JOHN
WALSH

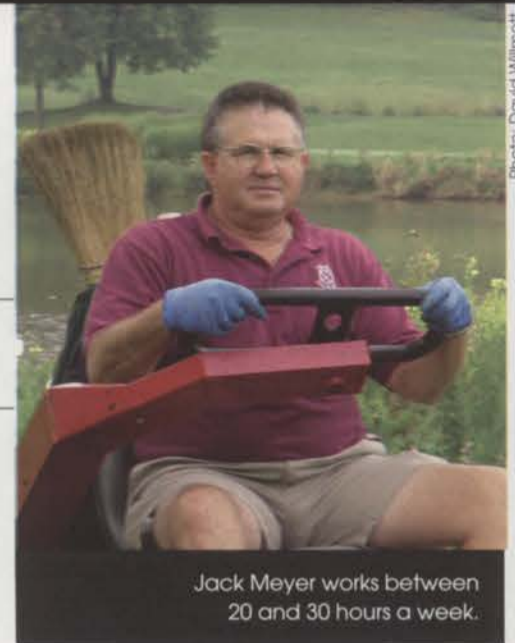
Labor is considered by many in the golf course maintenance industry one of the most important issues, if not the most important issue, it faces. The seasonal labor pool is shrinking. Management at some courses has responded by hiring immigrant workers, which can bring its own set of challenges. But at The Sharon Golf Club, superintendent Frank Dobie and co-assistant superintendents Norm Renner and David Willmott, don't have labor problems because they turn to a different labor pool – retirees – to staff their crew.

Dobie, who has been the superintendent and general manager at Sharon since 1966, has been hiring retirees since then. He says the number of retirees he has hired throughout the years has increased slowly.

"The labor pool was enormous in the 1960s," he says. "I never had a problem. We had 30 to 40 applicants every spring, and we could pick the cream of the crop. The 1960s were unique, and as the labor pool shrunk, retirees became a more important labor source."

There are 33 people on the golf course maintenance staff at Sharon. Some employees work year round but most are seasonal; and 35,000 man-hours were worked last year, which included 1,100 hours of overtime, according to Dobie. Man-hours include overtime, sick time, and holiday and vacation time. Twenty-two of the golf course maintenance employees are retirees and work 20 to 30 hours a week.

There are numerous reasons why retirees are a good fit for golf course maintenance



Jack Meyer works between 20 and 30 hours a week.

jobs, Dobie says. For starters, it's a seasonal business. The golf season at Sharon starts April 15 and lasts until Nov. 1.

"The majority of our staff are people who only want to work the season, usually that means students and retirees," Dobie says. "Since students can only work three months out of the year, most of the spring and fall work is done by the retirees."

"The retirees we hire have pension income and health-care coverage, so their primary motivation is staying physically and mentally active," he says.

Dobie likes retirees because they have good common sense that's acquired from years of experience, and retirees are dependable, arriving to work on time. They also pace themselves while working and take very little sick time off. One of the workers is 83 years old and has been at Sharon for the past 17 years. The youngest retired person at Sharon, which is private, is 52.

"There's no horseplay," Dobie says about the retirees. "With young people, you get enthusiasm and strength but not experience. However, we need some young people and students because you need a balance. There is a synergy created by the retirees' common sense and the students' enthusiasm."

"If it's a rainy day, retirees would rather go home, whereas the students, who need money for college, want to get as many hours in as they can," he says.

This year, there are three students working on the maintenance crew.

"Students stay about three years," Willmott says. "After they graduate from college, they move on to their careers."

Norm Renner, who has been at Sharon for 38 years, says retirees average eight to 10 years on the job.

"They seem to require less training time," Renner says. "They also are more cautious with equipment and have fewer accidents."



From left, Lonnie Porter, Dennis Blackburn, Don Armbrust and Ray Bailey work on a catch basin at The Sharon Golf Club.

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Female workers like Betty Wilcox help the staff achieve the synergy it needs.



Retirees like Gene Federinko (left) and Neil Akins come from a variety of careers such as the trades, the military and the professions.

Photos: David Willmott

And they don't get easily bored with routine assignments."

Synergy is achieved by having females on staff, too, according to Dobie.

"We've always had female employees," he says. "There is a large labor pool of female workers when you count retirees, housewives and college students. We have three female employees this year, including a college student, a retiree and a housewife."

"Females tend settle the guys down and even things out," Willmott says. "They are very capable of doing the physical work, too."

Another reason Sharon, which features 18 holes, hires retirees is because they come from the neighboring rural and suburban areas where they have experience with physical, outside work, according to Willmott.

"It is an advantage being in a rural area near small-sized cities," Dobie says. "Most of our staff come from nearby Wadsworth and Medina. None come out of Akron or Cleveland (the two larger cities that are further away from Sharon). It's very important for the retirees to have a short commute to work."

The retirees come from a wide variety of careers such as the trades, the military and the professions. Willmott says the career experience of the retirees is a benefit. For example, one of the crew's spray technicians is a retired chemical engineer.

The military experience that some of the retirees have also helps with the job, partly because it brings discipline, Willmott says.

Willmott, who's been at Sharon for nine years and has aspirations to become a superintendent there, says there needs to be realistic expectations of retired workers' physical abilities.

"Some jobs can be physically challenging for some, so this must be considered in work assignments," he says.

"Occasionally, we hire a retiree that is a good worker but not suited to the jobs in that department," Dobie says. "We give them the option of transferring to another department in the club. This is all done in cooperation with the various department heads."

The right fit

Throughout the years, Dobie says he has interviewed hundreds of retirees who've implied pay is a secondary consideration.

"Many of the people we hire were bored after they retired," he says. "They want to keep their minds and bodies active as long as possible."

"They're working here for numerous reasons, but most of them just want to get out of the house and interact with others," Willmott says.

Some of the perks for the retired workers are that they can take vacations during the summer and have liberal golf privileges at the club.

"The amount of accessibility for employee golf here – five days a week at restricted times – is a great drawing card," Dobie says.

"Our employee golf privileges are also a big attraction for some," Willmott says.

Another advantage of hiring retired workers is the strong sense of responsibility and pride they have developed from life's experiences, according to Dobie.

Most of the staff is task oriented. For example, once the fairway crew is finished mowing, they go home. The same holds true for those who mow greens, rough, tees, aprons and maintain bunkers.

"The bulk of the routine maintenance is done by noon so golfers aren't interfered with," Dobie says. "We're down to 11 workers in the afternoon: One is the secretary, and two are mechanics. Our efficiency is much better if the maintenance crew is off the course when members are playing."

"Members want fast greens, green fairways and no interruptions," Willmott says. "They don't want to see maintenance staff on the course."

Dobie says having a majority of the course maintenance staff be retirees might not work in other settings, but it has been effective at Sharon. GCN

John Walsh is the editor of Golf Course News. He can be reached at jwalsh@gie.net.



The bulk of the work for employees Tom Kaufman (left) and Carl Jungman is finished before noon.

Photo: David Willmott



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Photo: David Wolff

Successful superintendents must sell their management programs and philosophies to the green chairman, green committee and golfers to whom they answer.

The right relationship

AN EFFECTIVE GREEN CHAIRMAN KNOWS HIS ROLE AND UNDERSTANDS THE SUPERINTENDENT'S JOB

In the 1930s, venerable golf course architect Alister Mackenzie wrote, "The history of most golf clubs is that a committee is appointed, they make mistakes, and just as they are beginning to learn from their mistakes, they resign office and are replaced by others who make greater mistakes still, and so it goes on."

In other words, not much has changed during the last 70 years. While it's inevitable green chairmen and their committees will continue to make mistakes, an astute golf course superintendent will recognize

the most common missteps in advance and head them off. A survey conducted by the USGA Green Section staff found that while courses might vary and decades will pass, there's a commonality about what makes a good green chairman and what makes a person in the position ineffective.

While the green committee has the responsibility to oversee the management of the golf course, it shouldn't be involved in a course's day-to-day management. Instead, it's an advisory board making broad-based decisions about budget and policy.

The green chairman organizes and conducts regular committee meetings and maintains a close relationship with the superintendent. A good green chairman, as suggested by the USGA Green Section:

- Understands the role of the superintendent and is familiar with his challenges — he's an advocate for the superintendent;
- Is the liaison for the board of directors, members and the superintendent regarding golf course operations;
- Is up to date about golfers' concerns, questions and comments about the course;

- Is involved with the golf schedule and how it impacts the maintenance calendar;
- Maintains regular contact with the superintendent to discuss course conditions and special projects;
- Employs a competent and progressive superintendent who should report directly to the green chairman;
- Assists the superintendent with the budget process and policy decisions; and
- Gives the superintendent the authority to close the course because of weather or turf conditions and prohibit the use of golf cars.

An effective chairman and committee, working with a competent superintendent, can make improvements and implement plans on a golf course that will be enjoyed by golfers for many years. On the other hand, an ineffective committee and superintendent can drag a course down, creating problems that will linger for a long time.

What it takes

David Fearis, CGCS, was a golf course superintendent for 28 years. A past president of the Golf Course Superintendents Association of America, Fearis is presently a turf and ornamental product specialist for Kansas City, Mo.-based PBI/Gordon Corp. He says the ideal green chairman is level headed, well liked and well known at his course.

"He should also have a passion for the golf course," he says. "The green chairman sets the stage for the board of directors and makes recommendations, but he is not the final decision-maker."

Tommy Witt, certified golf course superintendent of Northmoor Country Club in Highland Park, Ill., and GCSAA past president, says leadership is a key attribute of an effective green chairman.

"As author John Maxwell said, 'All things rise and fall with leadership,'" Witt says. "The green chairman should be approachable and have good listening skills. Honesty and integrity are tremendously important, too. Ideally, this individual would have previous committee service to understand the history of the club and the vision for the future. The green chairman should seek the position for the right reasons — what is best for the club in the short and long term. He should be a visionary, not someone who represents a segment of the membership or has a personal agenda. Finally, this person should use good judgment and have the confidence and strength to make decisions that are right for the club."

Mike Heacock worked for American Golf Corp. for more than 17 years as a superintendent and then finally as vice president of agronomy. Presently, with more than 32 years experience in the industry, he's vice president of maintenance for Pacific Golf Management in Japan. The company has more than 93 properties in its portfolio.

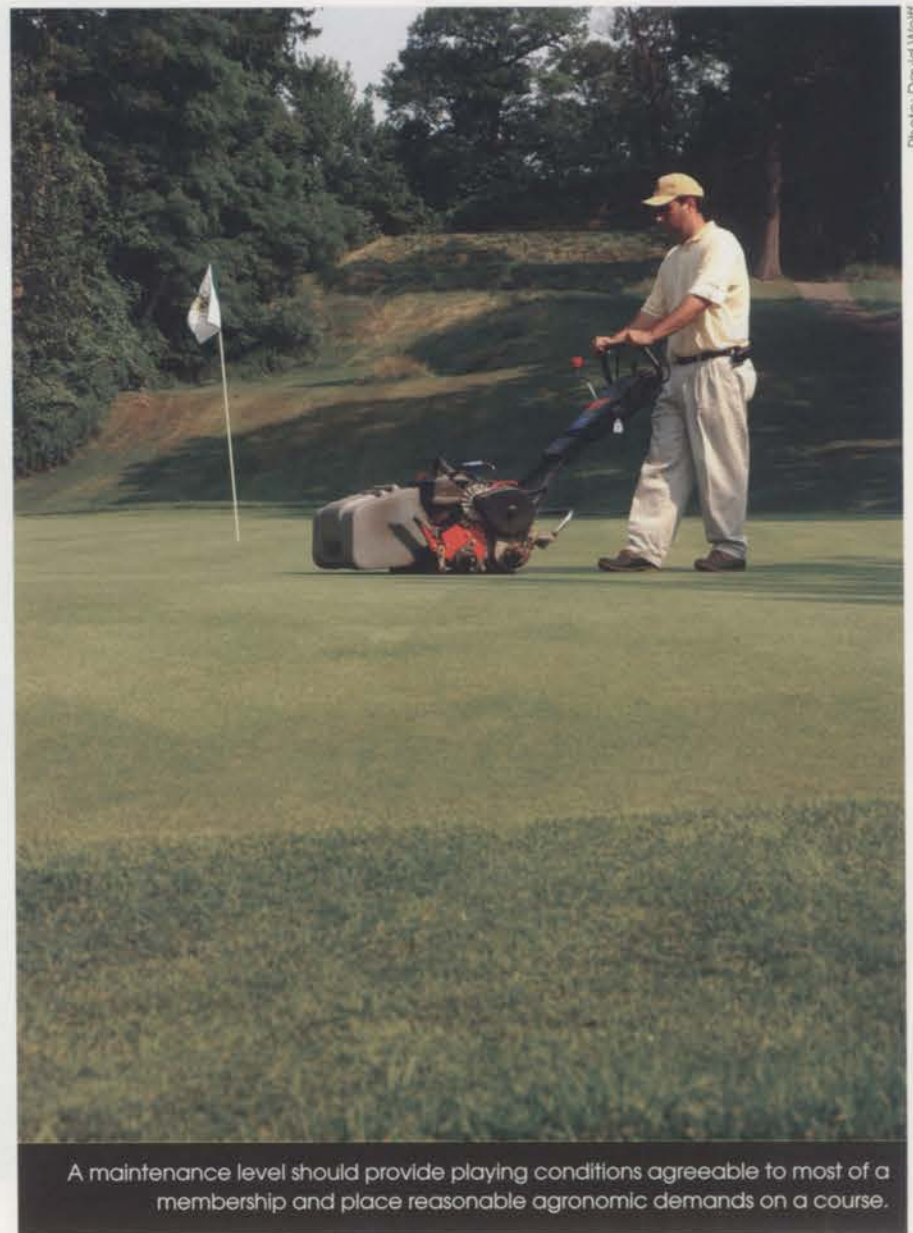
"My first green chairman taught me that my responsibility to the committee was to thoroughly research my proposals so the club could make an informed business decision," says the former president of the southern California superintendent's association. "That sounds simple, but it's not done that way at many clubs. This green chairman was the first to teach me to view my profession as a business."

Desired traits

So, what are the elements of a good green chairman and committee? The following describes good and bad characteristics. It's important that the superintendent understand these dynamics to become more effective and successful.

1. An effective green chairman puts in the time. The green chairman must educate himself about turfgrass management and learn the challenges at his course. This involves attending seminars, visiting other courses and reading trade magazines. He should spend time with the superintendent and develop an honest relationship with him. A chairman who doesn't make the time commitment generally isn't capable of making informed decisions.

"The green chairman must be willing to listen and learn," Witt says. "At least once in his tenure, he should get up at 4:30 a.m., go to the club and see what it takes to prepare a golf course. Understandably, many green chairmen have no idea. They live and work in an entirely different environment. They most likely have never considered the superintendent's challenges of working with a limited staff and budget; dealing with uncontrollable elements such as heat, drought, flooding and freezing; and the fact that they have



A maintenance level should provide playing conditions agreeable to most of a membership and place reasonable agronomic demands on a course.

to satisfy the expectations of hundreds of members."

Fearis says a green chairman should attend the annual Golf Industry Show at least once.

"It is an eye-opener, and it helps him understand the job of a professional golf course superintendent," he explains.

2. A poor green chairman wants his place in history. Woe to the superintendent who finds himself with a green chairman who has a large ego; someone who wants to leave their mark on the course. This can lead to odd and impractical design changes, wasting labor and money, and adversely affecting the course. Worse, going

"My first green chairman taught me that my responsibility to the committee was to thoroughly research my proposals so the club could make an informed business decision."

— MIKE HEACOCK



Photo: David Wolff

For the green chairman, having a basic understanding of golf course management requires a steep learning curve.

along with these projects can hurt a superintendent's credibility. To avoid this pitfall, green chairmen and their committees should listen to and use competent consultants and develop a master plan for long-range improvements.

3. Don't be a micromanager. Having a basic understanding of golf course management requires a steep learning curve. Unfortunately, sometimes a little bit of knowledge can be dangerous. A superintendent shouldn't have his every move

priorities for maintenance issues.

At one time, Heacock was the superintendent at a club in Southern California. The green chairman there was a top Los Angeles attorney and accomplished amateur golfer. This individual didn't believe frost could cause turf problems.

"One Saturday, he ignored my urgings to stay off the course and proceeded to play with his foursome," Heacock says. "There was heavy frost on the course, but I wasn't about to tackle my green chairman on the first tee. I spotted him at lunch in the clubhouse a few days later and asked him to walk the first fairway with me. I showed him the now black footprints his foursome had left. He looked at me and said he had no idea this would happen. He became my biggest supporter, which was great because he was far and away the most powerful and influential man in the club."

On the other hand, sometimes a superintendent can learn from a green chairman who presents a different point of view.

scrutinized. A green chairman who begins directing maintenance staff personnel can only cause confusion and chaos. There must be a clear understanding that the superintendent is the expert and will set his own

"At this same course, we had a wet winter and often closed the course due to soggy conditions," Heacock says. "On one such day, the next green chairman asked to walk part of the course with me. It was raining, and we splashed water with every step. He asked me if we were doing any damage, and I answered that a lot of traffic would harm the course. He offered that not many golfers would play in these conditions, and maybe the course could be opened for anyone who wanted to walk. He couldn't understand how a few golfers could damage greens in the rain. He had a fresh perspective and was absolutely right. He taught me to question common folklore and think about our 'customers' – the members."

4. Don't be a figurehead. The green chairman should be a voting member of the board of directors. If not, he has no leverage in the outcome of important and controversial issues. He also will be a more persuasive advocate for the golf course.

5. Realize that golfers place unrealistic demands on course conditions. While most golfers want "member-guest" conditions all the time, this is seldom a realistic goal because of agronomic and budgetary restrictions. The level of maintenance should provide playing conditions agreeable to the majority of the membership while placing agronomically reasonable demands on the course.

"Everyone wants good quality conditions, but many golfers don't know what they really are," Fearis says. "Developing a set of maintenance guidelines for the golf course will clarify maintenance priorities and keep the entire organization moving in the right direction. Of course, weather and other situations can affect this plan, so also be flexible."

6. Tough decisions must be made. Being a green chairman isn't a popularity contest. It's impossible to please every member. Although the goal of the superintendent is to avoid disruptions to play, sometimes solutions to agronomic problems require just that. Badly deteriorated bunkers might need reconstruction, an antiquated irrigation system might need an expensive replacement, and playability problems and poor turf conditions might mean tree removal. There are many undesirable consequences for not following through with the necessary corrective programs. The popular band-aid approach is rarely effective. This wastes money and perpetuates problems. The green chairman needs to do what's right for the course and its future in the most cost-

"Developing a set of maintenance guidelines for the golf course will clarify maintenance priorities and keep the entire organization moving in the right direction." — DAVID FEARIS

effective manner possible. As the old saying goes, "It seems there is never enough money to do the project right the first time, yet there always seems to be enough money to do it over."

7. The green committee should represent a cross section of members. Large committees can be ineffective because it's difficult to stay on track. There's too much discussion and too little decision-making. A good size is five to seven members. Unbalanced committees sometimes fail to consider how their actions will affect golfers of different abilities. The green committee should consist of golfers of both genders and all abilities. This offers varied perspectives and opens lines of communication with other golfers.

8. Unfortunately, tenure is short. Many of the most serious mistakes made by green committees simply are due to a lack of tenure. Just when it seems a green chairman has acquired enough knowledge to be a valuable resource, his term expires. Unfortunately, this also wastes much of the superintendent's time because he has put a tremendous amount of energy into educating the chairman and committee members. Frequent turnover makes continuity extremely difficult. Ideally, the chairman and committee would serve for at least three years. One excellent means of guaranteeing continuity and experience is for the club's immediate past president to become the newest member of the committee. Soon the committee will consist of individuals who are familiar with the entire club operation.

9. Everyone must communicate effectively. Regular communication is one thing, but effective communication is quite another. The chairman and committee members change on a regular basis, so the committee that hired the superintendent probably won't be the one he answers to a few years later. Because individuals often volunteer to effect change, it's likely the goals of the committee will change according to its makeup. Few superintendents consider themselves salespeople, but that's a large part of their job. Successful superintendents must sell their management programs and philosophies to the chairman, committee and golfers they answer to. This takes a lot of written and oral communication. Chairmen and committees who take an arrogant approach and think golfers and members will take their word for it, frequently experience strong opposition and a lack of support.

The position of green chairman is any-



Photo: David Wolff

Green chairmen need to do what's right for a course and its future in the most cost-effective manner possible.

thing but a no-brainer. The job should be filled only by an individual with exceptional leadership skills, an interest and willingness to learn new vocabulary, the mental toughness necessary to make hard decisions and the time to do the job right.

Not many people meet these criteria. As a result, most green committees are led poorly and, in many cases, do more harm than good in spite of their best intentions. The unfortunate truth is that the lack of good leadership might be the biggest problem many clubs face.

Be proactive

Witt says change is inevitable. During a superintendent's tenure, green chairmen and committees will come and go. The key is to manage that change.

"Very few superintendents get in serious trouble because of turf issues," he says. "They would be well advised to pay significant attention to building people, communication and relationship skills. It's just too big a part of our job to ignore. Learn the green chairman's personality. How does he prefer to do business, letters, voice-mail, e-mail, meetings, digital photos? Whenever possible, offer several options for the proposals you present to him. Help the chairman look good. Make him a hero."

Another critical factor is establishing credibility with the club.

"A superintendent is going to run into a green chairman he may not like, but find a

way to get along because it will make life much easier," Witt says. "Taking the high road in these relationships will be the most advantageous in the long run. It's vital to take the time to develop relationships. How can the chairman, committee or members support you if they don't know who you are? The constant turnover only heightens the challenges of effective communication and positive relationships. This doesn't happen overnight, but the time and effort the superintendent invests makes a tremendous difference in his success." GCN

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Photo: David Wolff

Green chairmen need to understand the maintenance practices of superintendents.

Unwired

GAPS IN WIRELESS IRRIGATION SYSTEMS NEED TO CLOSE BEFORE THEY GAIN COMPLETE ACCEPTANCE

by
DEREK
RICE

During recent years, wireless technology seems to have become ubiquitous. From the use of cell phones and pagers to the ability to surf the Internet wirelessly from a local coffee shop, most people take technology for granted.

So with all the wireless technology available, it should come as no surprise that wireless irrigation systems for golf courses are well into development. However, the move to completely wireless systems has been slow to happen for the golf course industry, according to David Davis of David D. Davis Associates in Crestline, Calif.

"I would say that if we give our clients a

choice of a wireless system, a wired system or a hybrid, about 95 percent of them are going to want a combination of the two, and all the different manufacturers offer that," says Davis, who specializes in irrigation system design for golf courses.

Defining wireless

There are a number of reasons for the slow acceptance of wireless irrigation systems. For starters, there seems to be some confusion in the industry about what a wireless irrigation system means. To some, it means being able to control the system through radio or cellular signals. To others, it means a system com-

pletely without wires, which combines wireless rotors and wireless controls. No such system currently exists on the market, according to Davis.

"If you ask most people today about wireless, it only has to do with the central controller to the satellite communication system," he says. "Someday, and they're experimenting with it now, it will mean wireless from either the central only or the field unit to a rotor."

While some might disagree, many of the wireless controllers on the market aren't completely wireless systems, according to Rick Holanda, superintendent at Aronimink Golf Club in Newton Square, Pa.



Most golf courses choose a hybrid irrigation system that is part wired and part wireless.

Photo: The Toro Co.



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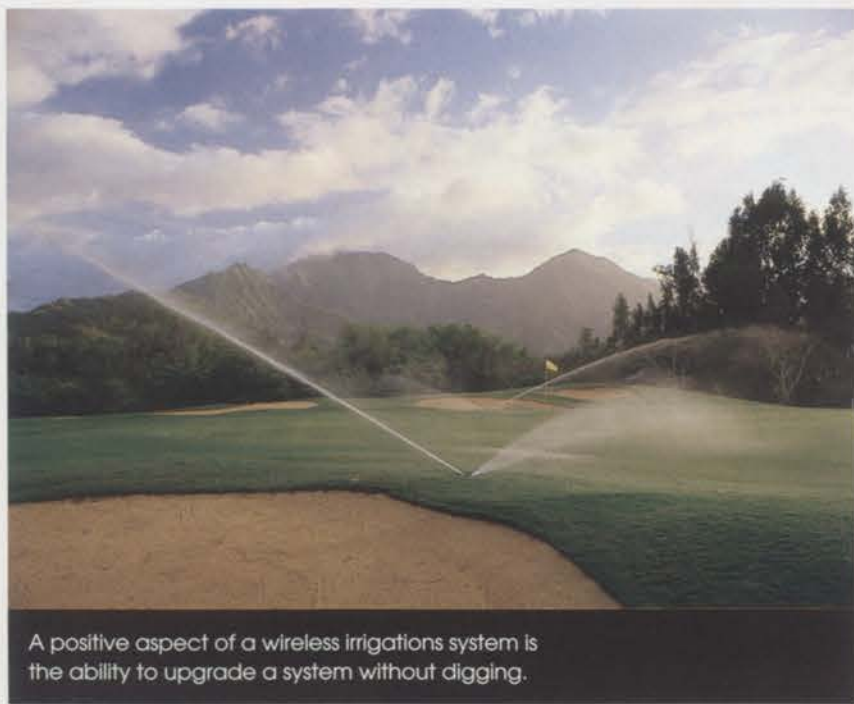


Photo: The Toro Co.

A positive aspect of a wireless irrigation system is the ability to upgrade a system without digging.

“You still have to have the communication wires in the central system to communicate to the satellites,” he says.

Signature Control Systems has created the closest thing to a wireless communication system that’s on the market, according to Holanda.

“I know their control box can communicate from satellite to satellite, so they took out the central,” he says. “With that, you don’t need the communication wires because everything is communicated by antennas on top of the control boxes. It’s not completely wireless, but it is wireless communication.”

Holanda says that next year Aronimink will install a new irrigation system to replace the current system, but he hasn’t completely decided what manufacturer he plans to use. One thing that’s certain is he’s not ready to cut the cord.

“It’s going to be a traditional system with all the communication wires and power wires,” he says.

While Paul Jett, superintendent at Pinehurst No. 2 in North Carolina, has some interest in a completely wireless system, should one become available, he says he wouldn’t install one just for the sake of having it.

“I’m sure we’d consider it, but I don’t believe we’d put one in at the moment unless it was a new golf course construction,” he says. “We’ve got systems in place already, and I don’t believe that we’d up and close the course just to put one in because it’s wireless.”

Benefits of wireless

The positive aspects of wireless systems include not having to worry about lightning strikes taking out large portions of the irrigation system’s hardware as well as the ability to upgrade a system without digging.

For Jett, having a partially wireless control system has been helpful. When it was installed, none of the old system had to be changed, and the software needed only three or four upgrades during that time.

“We still have all the wires going from the head to the box, but we use a radio frequency to control the whole thing, so it’s still a manual thing,” he says.

The system allows Jett to radio in from anywhere on the course to what he calls a “people finder” located in the office. The system in the office then relays the command to the individual satellites on the course, which Jett says saves him and his crew a lot of time and effort.

“It’s a wonderful system, and it’s obviously a whole lot more user-friendly than the old boxes that you had to go to with the manual dials and turn them off and on from the box there,” he says. “It’s a much more efficient system than that.”

While a typical wireless system might be costly to install, superintendents will have to weigh the long-term benefits as well, Holanda says.

“No question about it – there’s a place for the technology that’s available out there, especially with the cost of wire and copper going so high in the past year or so, so there is a place out there for the system,” he says. “You’re talking about less wire out there and fewer people cutting through it.”

Increased reliability

One of the questions that has arisen from the marriage between space-age technology and good old-fashioned agronomy is whether the technology is reliable enough

to satisfy the average superintendent.

“The superintendent is by nature not an optimist,” Holanda says. “They’re always looking at the potential for the worst case. They love new technology that automates things for them, but they’re conservative to know that they need a backup.”

When wireless technology was first introduced to irrigation systems more than a decade ago, the control systems that were being rolled out at the time were light years ahead of their time, even if today they seem like relics. Systems that tell sprinklers not to operate in the rain have existed for several decades, but the hand-held remote control devices that allow superintendents to operate the systems wirelessly from around the course are relatively new and might take some getting used to, Davis says.

“As radio becomes more reliable, you can get away with radio only,” he says. “We went radio only on lots of systems for a while, and a lot of our clients came to us and asked us to go back and put in the cable as a backup.”

Davis says that because of worst-case-scenario thinking the day might not come when a completely wireless system – one that includes wireless controllers that communicate directly with wireless rotors – is installed on a course.

“We’re probably never going to be totally wireless because there’s always an innate fear by a superintendent that they’re losing control,” he says. “It’s what we call the fear factor. They’re scared to death to lose the grass.”

For wireless to really take off in the golf course industry, Davis says some of the fears about control and security will have to be as-



Photo: The Toro Co.

One of the biggest challenges of installing wireless heads is the potential for destruction that normal golf course maintenance can cause.



Photo: Hunter Golf

Wireless technology was first introduced to irrigation systems more than 10 years ago.

the biggest beating," he says.

A look to the future

Holanda says despite manufacturers' best intentions, he's not sure a completely wireless system will exist for some time.

"If you ask me what's a reasonable time frame, I don't think any time soon," he says. "Maybe four or five years from now... maybe. I don't think they're going to have anything ready for the market anytime soon."

Davis agrees the technology isn't quite where it could or should be at this time to make a completely wireless irrigation system practical.

"In all practicality, that probably is a few years off until it is reasonable enough to use," he says.

Rain Bird currently offers its Cyclik wireless control system, which is battery operated and consists of a control module and a field transmitter, as well as its Eagle wireless rotor series.

In June, the company released its Freedom-Pad II hand-held remote control, which gives superintendents the ability to control irrigation systems in real-time through a map-based interface, using an HP iPAQ personal digital assistant.

Hunter Golf's Genesis III and Vista irrigation control systems have UHF radio connections from the central computer to the individual controllers in the field. Both systems offer two-way communications and can be used with any combination of hand-wired and radio controllers. The company also offers UHF portable radios that are equipped with a touch-tone keypad, allowing superintendents to address any controller on the course, as well as start-and-stop stations or entire programs.

Toro's entry into the wireless arena is with the SitePro Central Control System, which includes a T.Map interface that allows a superintendent to select irrigation functions, click on an individual sprinkler or a series of sprinklers and make adjustments directly from a map. SitePro also supports hybrid systems and its two-way communication provides the ability to read sensors from the field. When used with Flowtronex Pump Log or Wateronics Watervision software, SitePro provides pump station reflow alarm response.

Signature Controls' Aurora and Constellation product lines allow for remote control of irrigation systems,

including global positioning satellite interoperability.

Because the majority of the nearly 17,000 golf courses in the United States don't use a wireless irrigation system, the market is open for manufacturers to roll out their technologies on a small scale for now, with expansion possible in the future, Davis says.

"Hunter, Rain Bird, Toro, they're all going to look at the wireless rotor, he says. "I don't think for widespread use - where every single rotor in the place is wireless - but if you had to add a sprinkler or something like that, and you just can't dig a trench and extend a wire from the controller out to the head, it's just not practical to do it," he says. "That's where the wireless rotors are going to end up for the time being." GCN

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suaged, although there has been similar apprehension about new technologies in the past.

"I can remember in the old days, 15 or 20 years ago, when some of the central satellite systems were coming out, a fire truck driving by with its sirens on could turn on an irrigation system," he says.

Challenges of wireless

One of the biggest challenges of installing wireless heads is the potential for destruction that normal golf course maintenance can cause.

"A mower is the worst enemy of a sprinkler," Davis says. "And you can imagine that a radio transceiver sitting in the sprinkler or on the lid is going to be susceptible to getting chewed up by a mower."

Holanda says he would be concerned about what would result from a meeting between his heavy equipment and the wireless heads that include self-contained power supplies.

"With those heads that have the little solar panels on top of them, what happens when you go over them with the aerifiers?" he says. "Well, you're going to damage it."

For wireless rotors to come into more widespread use, manufacturers are going to have to come up with something that's almost bulletproof, according to Davis. However, he says there are situations in which using a wireless system is the only option.

"For example, if there's a golf course where there's a lot of concrete around and you can't bore through the concrete to get the cables in the ground, we have no problem suggesting that they go with wireless only," Davis says.

In those situations, he suggests stocking up on replacement parts.

"We tell them to have spare equipment on hand to replace whatever is going to take

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Disease control

KEEPING CURRENT WITH FUNGICIDES AND AGRONOMIC PROGRAMS HELPS CONTROL PATHOGENS AND MEET GOLFERS' EXPECTATIONS

by
DOUG
SAUNDERS

On a warm, sunny morning, superintendent Sam Samuelson, a certified golf course superintendent with Capital City Golf, a golf course management company based in Sacramento, Calif., starts his morning patrolling Haggin Oaks Golf Complex, a 36-hole public facility. During the hot summer months, daily tours are crucial. Like superintendents throughout the country at that time of year, Samuelson heads out to inspect his greens, check for dry and wet spots, and let his natural instincts take

over as he looks for the subtle clues that might be warning signs.

Samuelson is looking for signs of outbreaks of pathogens such as brown patch, dollar spot or pythium, and he knows he must be diligent. The stakes are high because any major infestation that leads to the turf loss can lead to lost play, lost profits and possibly lost jobs.

Obviously, protecting turf from disease is every superintendent's goal and has been ever since the game began in earnest in this coun-

try a century ago. Every superintendent wants to present picture-perfect greens and fertile fairways to a more discerning public. As a result, chemical fungicides have become an important tool to control the natural ravages of pathogens, especially when golfer expectations are high, course competition is stiff and budgets are tight.

Chemical fungicides have experienced a phenomenal evolution since golf courses began using mercury salts in the 1920s to control pathogen growth. These heavy-metal toxins were effective but harmful and were replaced by synthetic compounds in the 1930s and 1940s.

Since then, the turf industry has seen the continuous advancement of materials, including the development of chlorothanil (Daconyl) in the 1960s; the first synthetic systemics in the 1970s; sterile biosynthesis inhibitors in the 1980s; and the advent of broad-range strobilurins in the 1990s. Presently, there are eight major classes of chemical fungicides available to the golf course superintendent.

"We have a lot more tools available to us than we did 20 years ago, but just having more products doesn't mean that it has made my challenge with pathogens any easier," says Samuelson, who has been in the turf industry since 1968. "The golfing public has set higher standards that we are trying to meet. They want faster greens and fairways, but all superintendents understand that speed kills. As we have lowered mowing heights, we are putting more stress on the plants, which leaves them more susceptible to disease."

This has created the paradox of having to use more fungicides to protect turf while trying to control costs.

And this challenge only increases as mowing heights continue to lower. At the Haggin Oaks Golf Complex, Samuelson has seen mowing heights lowered from one inch on fairways and one-quarter inch on greens during the 1970s down to one-half inch on fairways and 5/32 of an inch on greens today.



Photo: Freddy Bird

A protected worker sprays one of the greens at Haggin Oaks Golf Complex in California.

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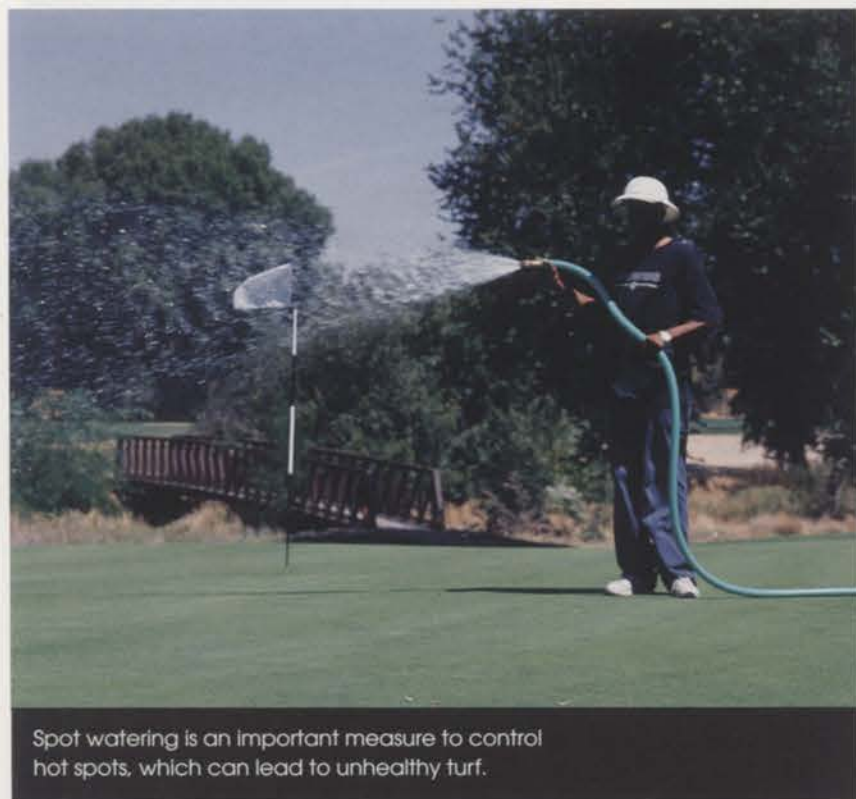


Photo: Freddy Bird

Spot watering is an important measure to control hot spots, which can lead to unhealthy turf.

On the whole, lower mowing heights have become a national trend as courses strive to remain competitive.

Pete Ramsey, superintendent at Range End Golf Club, an 18-hole daily-fee facility in Dillsburg, Pa., near Harrisburg, confirms the pressure to be competitive.

"There is no doubt that the golfing public has put more demands on us to provide a quality product," Ramsey says. "If my greens aren't what they want, then they will go play somewhere else. The challenge for me is to find ways to produce that quality while doing it within a limited budget. Fungicides are part of that equation, but the cost of the newer products forces me to look for other ways to combat pathogens."

Kyle Miller, senior technical specialist for BASF, says he understands the concerns superintendents have about fungicide costs.

"We hear about the cost issue, but the reality is that Environmental Protection Agency requirements are more stringent," Miller says. "It's difficult to get newer products licensed in several markets, and there are fewer companies that are producing products."

"At BASF, we produce products for the agricultural market and the golf market. While the golf sector is only about 5 percent of our total business, the liability involved in golf is greater due to a higher probability of human contact and the cost of golf turf versus open fields. These factors all contribute to the reasons that fungicides for the golf sector are more expensive than the agricultural equivalent."

Joseph DiPaola, golf market manager for

Syngenta Professional Products, says developing a new control agent for the turf and ornamental market can cost as much as \$100 million.

"The size of the investment will probably curtail the introduction of new agents in the future," DiPaola says.

Maintenance matters

Of course, fungicides aren't the only turf treatment option. Observation and other maintenance practices play an important role in disease-free turf.

Ramsey stresses the importance of sound maintenance practices on his course. Sound maintenance saves on his treatment costs. Because treating a pathogen outbreak with a fungicide on only one hole of a course might wipe out 25 percent of his annual budget, Ramsey uses his resources to develop strong fertility levels, monitor watering and carefully watch for the developing environmental conditions that cause pathogens to appear.

But this approach doesn't eliminate his fungicide use.

"I spray as a preventive measure," Ramsey says. "I have been at Range End for eight years, so I know areas of my course where problems may first appear. These are my monitors. Constant observation and developing a real knowledge of your course's environment are crucial."

Still, deciding on the right treatment is tough. The balancing act between turf protection and cost effectiveness adds up to a difficult decision for most superintendents.

The modern fungicides on the market offer several obvious advantages — namely lower rates and longer protection. Older contact fungicides (chlorothanyl) were effective at a rate of 4 to 8 ounces per 1,000 square feet and provided a seven- to 10-day rate of effectiveness. The first systemics that worked directly on a plant were effective at a rate of 2 to 4 ounces per 1,000 square feet and provided a 14- to 21-day rate of effectiveness. The newer, broad-spectrum fungicides are effective at a rate of 0.13 to 1 ounce per 1,000 square feet and provide a 21- to 28-day rate of effectiveness.

The main drawback of these modern products are their higher price tags. There's also the issue of resistance, which adds another dimension to this complex aspect of golf course maintenance.

Dr. Frank Wong is an urban pathologist at the University of California at Riverside and conducts extensive research about fungicides and their effectiveness in the golf industry.

"The new materials are more powerful than the chemistry in the past, but they have to be looked at as a double-edged sword,"

Wong says. "We have seen how pathogens develop resistance to these new products quicker than in the past."

While Wong acknowledges advantages of the new products, he cautions superintendents to use them as labeled.

"The slogan in the old days was: 'Paint it white and sleep at night' with the contact fungicides, but those days are over," Wong says. "The new products allow for a lower application rate, and their ability to bond to the plant are beneficial in reducing runoff concerns. But it is imperative to follow the guidelines for their use."

Others say not to expect a silver-bullet solution. Paul Miller, certified golf course superintendent of Nashawtuk Country Club in Concord, Mass., is one. Nashawtuk, a private club, hosts an annual Champions PGA Tour event, so the need to be in peak condition has led Miller to use all tools available. Unlike a smaller daily-fee course, he has access to a large budget, which gives him more options.

"The development of the new products has been very beneficial, but it has to be stressed that they are not a silver bullet," Paul Miller says. "The problem of resistance is there, and

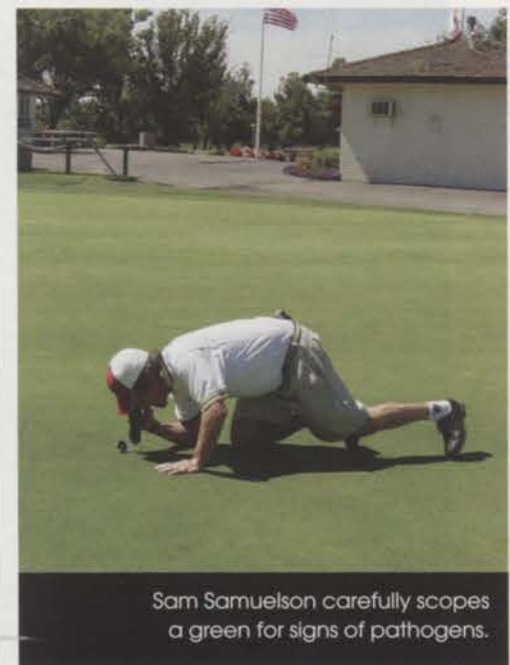


Photo: Freddy Bird

Sam Samuelson carefully scopes a green for signs of pathogens.

it is important to rotate the different classes of fungicides through the course rather than relying on one type of fungicide."

Paul Miller approaches the challenge by taking in all considerations, such as maintaining the course in the condition that members expect, doing it within the budget available and in a way that's environmentally compatible.

"There are two kinds of superintendents: ones who have lost turf and ones who will," he says. "This reality just means that we have to develop a creative balancing act between science and art to protect our golf courses

as best as we can. We need to develop sound knowledge of the use and application of the various chemical products that are available to us and blend that with the natural agronomy practices that we can use to produce healthy turf."

DiPaola says superintendents need to educate themselves about fungicides to help use them more effectively.

"We have made many advances through the newer classes of control agents, but the reality is that resistance to these agents will always be a serious concern," DiPaola says. "It is important that superintendents educate themselves about the various classes of fungicides to understand the chemistry as they develop a program for rotation at their particular course."

edge of the things they can control, such as fertility levels, water monitoring and foot traffic. This also means proper crew training to watch for dry spots, hand-water correctly and cultivate a team effort toward a goal of growing healthy turf.

3. Educate about fungicides. Because of the wide variety of products available, it's imperative to know about all the classes of fungicides to be able to decide what type of chemistry will work in any green situation.

Education also requires knowing how to use fungicides properly.

"These products are effective but also powerful," Wong says. "I have seen problems where someone may overuse a product to try to pound out a problem, or where

"The challenge for me is to find ways to produce that quality while doing it within a limited budget. Fungicides are part of that equation ... " — PETE RAMSEY

In the meantime, product advances in the pipeline could simplify use. One advance that will be seen in the near future, according to DiPaola, is a color-coded packaging and labeling system making it easier to identify different classes of control agents.

"Hopefully, this concept could become an industrywide standard in the future to help make defining products easier for those who are using them," he says.

Fungicide guidelines

The experiences of Samuelson, Ramsey and Paul Miller show that the pressures and challenges of preventing pathogens from developing are similar from coast to coast. Also, several common themes emerge in course maintenance and fungicide use.

1. Observe diligently. Samuelson walks his greens twice a day during the summer and includes regular soil and turf samplings and careful monitoring of mowing heights. Ramsey gets drawn in many directions at his course in the summer, and he relies on his staff to help keep a watchful eye on the turf during the busy season. The lesson: Learn which environmental conditions are unique to a course and watch for early warning signs to use fungicides preventively.

2. Develop a sound agronomic program. Rather than worrying about what one can't control with Mother Nature, Paul Miller suggests superintendents use their knowl-

someone might try to stretch them out by not applying at the right strength."

4. Rotate fungicides. This is key to proper use, no matter where a course is located. Constant use of the same product can lead to resistance from pathogens the fungicide is trying to control. By rotating various products through spraying cycles, this problem can be managed. Education and observation play vital roles in this process.

Uncontrollable variables

The steps above are factors superintendents can control. Another variable is increasing expectations by the public or course membership about golf course conditions. This isn't something a superintendent can control completely. Golfers might have unrealistic expectations to start because they see a PGA Tour event on TV on a Sunday and want to see this at the course they play on Monday.

Luckily, advances in golf course construction techniques throughout the past 10 years have provided daily-fee golfers better conditions. And they expect those conditions wherever they play.

"The level of acceptability has increased dramatically over the last 15 years, which has led to more spraying," says Ray Viera, golf course superintendent of The Members Club at Four Streams, a private club in Beallsville, Md. "I can accept some signs of aesthetic pathogens, but members might not. I just take pride in knowing that I am



Photo: Freddy Bird

Low mowing heights increase stress on turf and make it more susceptible to disease.

doing everything possible to provide the best conditions, but I wonder where are we taking conditions and how do I pay for it?"

While superintendents understand what it takes to bring a golf course to PGA-Tour quality, the average golfer is unaware of the price to produce these conditions. As a result, developing some form of communication between a golf club's membership or the course general manager becomes crucial to set thresholds of acceptability for a particular facility. These thresholds should address course cost, environmental effects and how this translates into green fees.

"We are all being challenged to get a bigger bang for the buck, so developing the communication with management is essential," Paul Miller says. GCN

Doug Saunders is a freelance writer based in Truckee, Calif. He can be reached at dougs@sierra.net.



Photo: Nashawtuk Country Club

Paul Miller, superintendent at Nashawtuk Country Club, uses chemicals and natural agronomy practices to produce healthy turf.

Analyze this

ASSESSING SOIL PHYSICAL PROPERTIES HELPS DETERMINE STRATEGIES FOR IMPROVING GREENS

by DR. NORMAN HUMMEL

Excess soil moisture at the exclusion of soil air can be devastating to a green. After the summer of 2004, superintendents in the eastern half of the United States know this all too well. Knowing and understanding the physical properties of the soil in greens might help superintendents develop a strategy to improve them. In some cases, soil physical test results might provide the information needed to convince membership or owners to take more drastic steps to improve greens, including reconstruction.

The physical properties of soils encompass many things, including those related to the solid, liquid and gaseous phases in the soil. The properties normally related to greens performance include drainage (soil permeability), aeration, water retention and factors that affect these, such as particle size and soil density (compaction).

Soil drainage is measured in the lab by determining how fast water moves through the soil under saturated conditions. Called the saturated hydraulic conductivity or infiltration rate, it's probably the property of which most people relate. If the infiltration rate is low in a lab test, chances are good drainage will be a problem in the green.

Soil bulk density is a property routinely measured that has a profound affect on other physical properties. The density is the dry weight per unit volume of soil and is an indicator of soil compaction. The higher the num-



Soil physical properties include the relationship of solid, liquid and gaseous phases in the soil.



Photo: Scott Bauer

Soil physical test results can provide information needed to convince memberships or owners to take more drastic measures to improve greens.



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Soil properties – three case studies

Case study	Sample depth (In.)	SOIL SEPARATE			PHYSICAL PROPERTIES			Organic matter (%)
		Sand (%)	Silt (%)	Clay (%)	Infiltration rate (in./hr.)	Aeration porosity (%)	Capillary porosity (%)	
1. Native soil green	0-3"	92.5	4.2	3.0	5.6	27.5	25.6	3.74
	4-7"	27.4	36.2	35.0	0.0	8.2	29.9	1.92
2. Sand based green	0-3"	96.5	1.4	1.6	3.7	8.8	35.6	2.09
	4-7"	97.3	0.9	0.9	13.7	22.9	19.7	0.56
3. Old USGA green	0-3"	85.2	7.1	5.1	0.3	5.0	51.9	10.03
	4-7"	85.7	5.9	4.9	2.5	4.6	27.4	0.91

ber, the more compacted the soil will be and the less favorable the other physical properties are likely to be. Greens can be built with the perfect topsoil or sand-based mix, but they will perform poorly if compacted.

Related to bulk density is the total porosity, which is the total void space that exists

lectively, the capillary porosity.

When soils or sand-based mixes from greens are tested, it's important that the distribution of air and water filled pores are determined because they also relate to soil health.

Sampling

If a new green was built, a loose sample of mix would be sent to the lab, where the mix would be evaluated on laboratory-compacted samples. One shouldn't send loose samples from existing greens to labs to assess soil physical properties such as infiltration rate and porosity. Doing so won't provide any pertinent information about the greens because the sample won't be tested at the density it exists in the green. A good assessment of soils from existing greens should be done on undisturbed samples.

Using special sampling equipment or techniques, samples are removed from greens as cores that are shipped to the lab intact. This enables the lab to test the samples with the soil or mix as it exists in the field, providing a better evaluation of the physical properties.

While there's special equipment available for pulling undisturbed soil samples, these generally aren't cost effective for superintendents to purchase and involve some technique to pull a good sample. Instead, there's been good experience having samples pulled with PVC pipe, which should be beveled on the forward edge so that soil is displaced to the outside as the pipe is driven into the ground. Drilling holes in the top to insert a metal rod assists in pulling the sample out.

Once in the lab, the pipes are cut into sections. Then the soil properties are evaluated in one to several depths in the profile.

Why soil properties change

Throughout the life of a green, soil physical properties will change because of several factors. Nature brings about changes: freeze-thaw cycles, micro and macroorganisms, and the dead and decaying turfgrass plants. Management practices such as topdressing,

aerification and watering have a profound impact on soil physical properties as well.

The following three cases show how soil physical properties change, the problems created and possible solutions to the problems.

Case study 1: Native soil green with topdressing cap

This case is a common scenario seen in older, native soil greens. The green was originally constructed with a fine textured soil. A sandy layer about 3-inches thick has accumulated from years of topdressing applications. (See the top-left photo on page 63.) From 3-inches to about 6-inches deep, the soil was a fine textured soil that was determined to be a clay loam. Below six inches was a lighter-colored subsoil.

Selected data from this case are included in the table above. Looking at the infiltration rate, one can notice how good it is three inches in the surface. The results on the aeration and capillary porosity are good as well. The benefits of years of topdressing are well documented by this data.

Unfortunately, below three inches, the soil is impermeable. Hopefully, this green was designed with good surface drainage. Back when the green was built, the fact that the soil was slowly permeable might not have been a concern. Excess water from rainfall and snow melt would simply run off. Now the top three inches has been modified and is quite permeable, so water will move through it. Unfortunately, without internal drainage the water has no where to go. Common symptoms of this scenario are wet greens surfaces and shallow rooting, especially during wet years.

There are a number of options to improve this. Considering how impermeable the subsoil is, an intervention like a drill and fill or deep-tine aerification wouldn't be of much help.

The most definitive option would be to reconstruct the green to contemporary standards, such as USGA greens. Short of re-



Photo: Hummel & Co.

Loose soil samples from existing greens aren't useful to assess soil physical properties such as infiltration rate and porosity.

between sand and soil particles. It's directly influenced by the soil density. The higher the density, the lower the total porosity. Organic matter content also will influence the total porosity – increasing with increasing organic matter in the soil.

The pores or voids that exist in the soil vary in size. Larger diameter pores tend to conduct water downward under saturated conditions. When they're drained, they tend to be occupied with air, providing the plant roots with needed oxygen. These pores are called macropores or collectively, the aeration porosity. The smaller diameter pores tend to retain water against the force of gravity because of stronger capillary forces. A portion of this water will be available for plant use. These pores are micropores or col-



Photo: Hummel & Co.

Special equipment can be used to pull undisturbed soil samples from greens.

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OCTOBER 2004

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 - B-Green Chairman
 - C-Director of Golf/Head Pro
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 - F-Golf Course Owner
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 - H-Architect/Engineer
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 - K-Assistant Superintendent
 - L-Golf Course Management Company Executive
 - Z-Others (please describe)

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- A-9 Holes
- B-18 Holes
- C-27 Holes
- D-36 Holes
- E-Other

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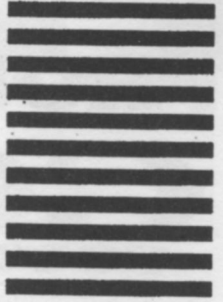
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construction, a bypass drainage system can and should be installed. A bypass system is a series of narrow vertical trenches installed in a green on 6-foot to 10-foot centers. Small diameter pipe is installed, and the trenches are backfilled to the surface with a rich, well-drained sand based mix. Some installers will use straight sand to backfill the trenches, but the drain lines often are visible when sand is used. Bypass drainage systems have been installed on hundreds of greens with good to excellent results.

Case study 2: Sand based green with organic fouled surface

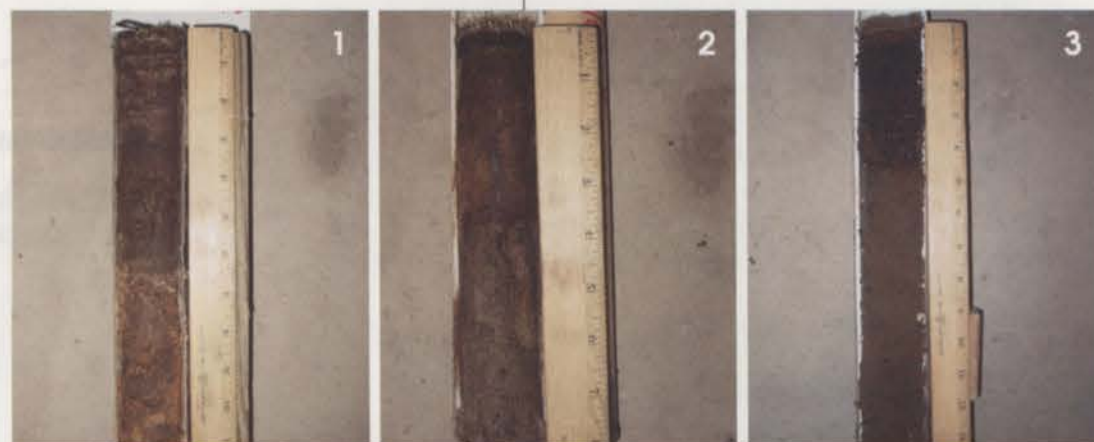
One of the most common problems seen with sand-based greens is the excessive accumulation of organic matter. When in excess, organic layers can decrease drainage and increase capillary porosity at the expense of aeration porosity. Gas exchange across the surface is likely compromised as well. Symptoms of excess surface organic matter include shallow rooting, wet surfaces, and in some cases, black layer. (See the top-middle photo above.)

This case involves a golf course built in the early 1990s with United States Golf Association greens. Throughout time, a layer of organic matter had accumulated to the point where the physical properties in the surface were compromised. The results in the data table (page 60) show that the infiltration rate in the surface three inches was low. The aeration porosity was low, and the capillary porosity was high – classic data where surface organic matter is high.

Taking a look at the data from samples taken from 4- to 7-inches deep, one can see that all of the physical properties are favorable. Therefore, the problems on this green appear to be limited to the surface. Reconstruction isn't necessary unless there are other issues with the green, such as excess slope, small size or inadequate cupping space.

There are two options to improve this situation. The more common approach would be for the superintendent to embark on an aggressive aerification and topdressing program. While disruptive to playing conditions, this can reduce the organic matter at the surface and improve the surface growing environment throughout time. There are times, however, when the amount and/or depth of organic matter might be too much to remove by these conventional means.

Another approach, which was taken in this case, is to remove the surface organic layer. New mix is brought in to bring the surface of the green to grade. The new mix is lightly tilled into the surface of the existing mix to prevent



1. The soil sample on the left shows a sandy layer that has accumulated from years of topdressing.
2. The one in the middle has excess surface organic matter that causes shallow rooting.
3. The one on the right has a root zone comprised of coarse sand, topsoil and peat.

Photos: Hummel & Co.

an interface. After the green surface is floated out, the green is seeded, sprigged or sodded. Aside from giving the green a fresh start, this option offers the opportunity to introduce newer turf cultivars.

Case study 3: Old USGA greens

The USGA specifications for greens construction have been used in the industry since the early 1960s. Many changes have been made since the original specs. It's likely that a USGA green built in 1960 is much different than one built nowadays.

In this case, a USGA green was built in the early 1960s, and the root zone was composed of a mix of coarse sand, topsoil and a small amount of peat. Throughout the years, a sand-based topdressing heavily modified with peat humus had been used to the point that a 3- to 4-inch layer existed at the surface of the green. (See the top-right photo above.)

The results in the data table (page 60) show that the top three inches of the green had a high organic matter content. As a result, the infiltration rate was low, the aeration porosity was low, and the capillary porosity was high. Unlike the first case study, the topdressing used on this green did little to improve the physical properties in the green. Rooting in this green was shallow.

The physical properties in the subsurface layer also were poor, despite the mix being about 85 percent sand. While not shown in the table, the density on the mix was extremely high, about 1.8 g/cc. The mix was compacted severely, and as a result, had a low infiltration rate. Compacted soils will have a low total porosity, with most of the pores being small capillary pores. The results on the aeration and capillary porosity reflect this.

Speculation only can be made about the history of this green, but it looks like this has always been a problem green. The composition of the original mix is such that it

would be prone to compaction, and compacted it is. When new, the green surface probably was hard and wouldn't hold a shot. To correct this, a topdressing program was initiated and carried out for several years using the high organic topdressing material. The green is likely soft now.

While a program of aerification and topdressing might be helpful, the surface and subsurface conditions of this green warrant nothing short of reconstruction.

Problems with greens can be caused by many factors, poor soil physical properties only being one. These three cases are examples of where soil physical testing identified a problem and offered guidance for corrective action. GCN

Dr. Norman Hummel is president of Trumansburg, N.Y.-based Hummel & Co. He can be reached at 607/387-5694.



When soils are tested, it's important that the distribution of air and water filled pores are determined because they relate to soil health.

Photo: Hummel & Co.

Prodiamine herbicide

- Cavalcade 65WDG pre-emergence herbicide
- Contains active ingredient prodiamine
- Offers long-residual pre-emergence control
- Can be applied in fall for weed prevention the following season
- Prevents grassy and broadleaf weeds such as crabgrass, goosegrass, *Poa annua*, spurge, purslane and knotweed
- Bontrol in warm- and cool-season turfgrasses and ornamentals

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Circle 200 on reader service form

Two-way extended range radio

- Talkabout T7400 sports series
- Seven-mile range; 2-watt power
- Eight National Oceanic and Atmospheric Administration weather channels
- 22 frequencies and 99 interface eliminator codes
- Equipped with earbuds and voice activation for hands-free communication

Motorola

Circle 201 on reader service form

Bulk pneumatic blower

- BB200 Bark Blower model
- Can be transported as a skid mounted unit or towed on its optional trailer
- Delivers more than 8 cubic yards of bulk material per hour
- 6.5-cubic foot capacity hopper with hydraulic functions complete with reversing capabilities,
- Dual feed rolls for consistent material deliver
- 100 feet of 3-inch hose

Finn Corp.

Circle 202 on reader service form

Edger and cable-laying unit

- Common platform and interchangeable blades and shields allow for an easy transition between the BedBug landscape edger and cable layer
- Each unit is powered by a 5.5-hp Honda engine with a centrifugal clutch
- Adjustable 2- to 4-inch cutting depth
- Carbide tipped blades provide consistent cutting

BlueBird

Circle 203 on reader service form

Pozzolan soil amendment

- Lassenite-I formula
- Reduces the frequency of watering and necessity of fertilizers
- Allows soil to absorb and hold water
- Promotes deeper roots and increases the number of fine root hairs

Western Pozzolan

Circle 204 on reader service form

Tree insecticide

- Pointer II formula
- Works with an injection system to treat trees' active layer without drilling
- Provides season-long control of numerous tree pests including adelgids, borers, beetles, aphids and lacebugs
- Doesn't require temperature-regulated storage

ArborSystems

Circle 205 on reader service form



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KingStone signs and markers

- KingStone material creates the natural look of stone
- All shapes, sizes and thicknesses available
- Seven standard colors with ability to match custom color
- Little maintenance necessary
- Ideal for tee signs, entrance signs, custom directionals and markers

Landmark Golf Course Products

Circle 206 on reader service form

Directional signs

- Sand-cast, 6-inch-by-10-inch arrows and 4.5-inch-by-10-inch informational signs with raised polished letters
- Available in bronze or aluminum
- Messages printed in raised, polished letters with protective coating
- Popular messages available

From Tee To Green

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BE ASKED TO LEAVE

One-piece polyethylene signs

- DuraCarve product line of cart, tee and directional signs and markers
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Four Season Signs

Circle 208 on reader service form

Tee posts

- Made of sandstone to compliment the natural landscape
- Custom messages and designs offered
- Available in a variety of sizes, shapes and colors

G.G. Markers

Circle 209 on reader service form



Fairway signs

- Available in five standard sizes, three standard color combinations and 20 standard messages
- Custom designs are available
- Messages are engraved in ironwood, a dense, South American hardwood that resists rotting, warping and will survive insect infestation for several years
- Never needs painting

Great Lakes Golf Course Products

Circle 210 on reader service form



Stainless-steel signs and accessories

- Stainless-steel design to withstand harsh environments
- Won't corrode, pit, patina or rust
- Custom shapes available

Designer Golf Co.

Circle 211 on reader service form

IV

Golf course signage

- Available in redwood, bronze and natural stone
- Ability to customize
- Almost every size and color available

National Golf Graphics

Circle 212 on reader service form



Retractable range board

- Cast metal distance marker
- Can be adjusted easily from a hidden, in-ground position to an upright position in seconds
- Offers patrons an accurate and readable distance to their targets from almost anywhere they're positioned on the range

OnCourse Media

Circle 213 on reader service form



Dura-Flex signs

- Easy-to-read signs designed to flex and withstand all golf course conditions
- Three-dimensional letters are molded into the sign so printing won't scratch off
- Corrosion-resistant spikes are formed by a single "U" shape, stainless-steel rod and are molded into the resin for maximum strength
- Available in three color schemes: white with green letters, green with white letters and yellow with black letters

Par Aide

Circle 214 on reader service form



Customizable signage

- Customizable signage by size and shape
- Can choose from a colored logo and detailed graphic, or just hole number and par
- Signs are durable and maintenance free

Shot Selector

Circle 215 on reader service form



TurfStone staff and memorial signs

- Photo-quality, laser-engraved images available on 9-inch-by-12-inch TurfStone signs
- Can be used to showcase course superintendents, golf professionals, club presidents, board members or to honor benefactors or mark memorial plantings
- Granite-like appearance; molded from thermoset polyester that won't crack or fade
- Horizontal and vertical formats are available with or without frames
- As many as three colors can be used for laser-engraving text and logos on a finish of gray granite, green granite or terra cotta

Standard Golf

Circle 216 on reader service form



Sprinkler-head yardage tags

- Custom-made tags available for all sprinkler brands and types
- Made with 1/8-inch-thick, scratch-resistant material
- Highest available UV rating
- Highly visible, but mounted flush with top of sprinkler head for protection from turf equipment

Top Dog Golf

Circle 217 on reader service form





Air- and liquid-cooled engines

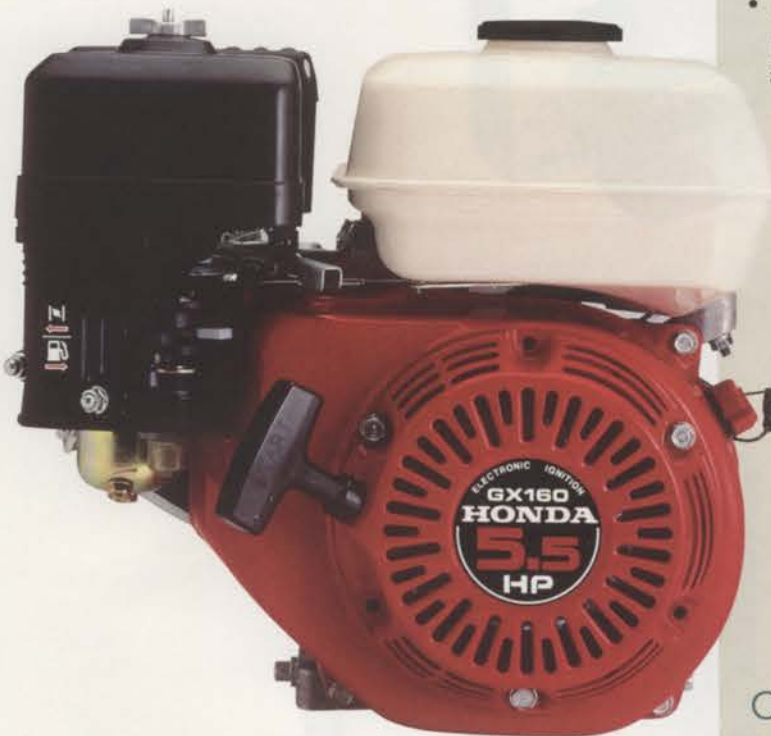
- Vanguard V-twin Big Block models available in 25-, 27-, 29-, 31-, 33- and 35-hp engines
- An advanced debris management system allows engines to run cooler and cleaner
 - Steel-backed aluminum bearings contribute to increased load capacity and reduced engine noise
 - Lightweight aluminum block increases power-to-weight ratio by reducing equipment weight
 - A centrifugal, multi-stage industrial air cleaner provides engine protection, especially under dirty, dusty conditions

Briggs & Stratton Commercial Power
 Circle 218 on reader service form

Small engines

- Three models available with high parts interchangeability among all models
- The DF972 is a three-cylinder, dual fuel engine with a 29.5-hp, liquefied petroleum gas version or a 31-hp gasoline version
- The D902-E three-cylinder engine is available in 20.6-hp or 23.5-hp models
- The Z602-E two-cylinder engine is available in 13.8-hp or 15.8-hp models
- Drilled cooling passages between cylinders provide cooler piston and piston ring temperatures for longer engine life and stronger reliability

• Clean-air compliant
Kubota Engine America
 Circle 219 on reader service form



Overhead valve engines

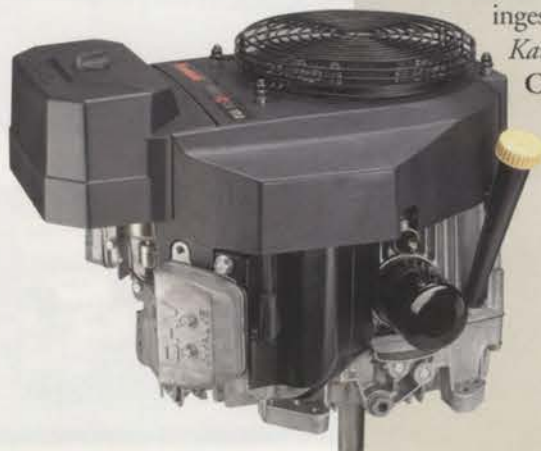
- GX series offers reliable, easy starting and fuel-efficient power for a variety of commercial applications
- 21 models available in GX series, ranging from 3 to 24 hp
- Available in horizontal or vertical shaft and in single-cylinder or V-twin versions

American Honda Motor Co.
 Circle 220 on reader service form

Commercial engine series

- FH KAI line includes four models ranging from 13 to 19 hp
- Internally vented carburetor design to ensure longer air filter maintenance intervals and easy filter installation
- Features small diameter passage holes to eliminate engine grass ingestions and grass plugging

Kawasaki Motor Corp.
 Circle 221 on reader service form



Spray repellent

- Ready-to-use, Tree Guard formula sprays on milky and dries clear
- Non-toxic to plants
- Used to protect all trees, shrubs and flowering ornamentals
- Unique latex polymer carries the active ingredient, Bitrex, and resists rain and won't wash off for as long as 100 days

Becker Underwood

Circle 222 on reader service form



Precast concrete buildings

- Manufactured by Carr Concrete
- Arrive ready to use, no on-site assembly required
- Engineered to resist heavy winds, snowfalls and ice loads
- Won't rust, rot or burn
- More than 50 standard models to choose from, including standard storage and restrooms
- Can be customized to meet specific needs

R. W. Sidley

Circle 223 on reader service form



Spotrete F Turf fungicide, animal repellent

- Contains the ingredient thiram, which renders treated plant parts distasteful to deer, rabbits and rodents
- Deters feeding and damage to turf, shrubs and ornamentals
- One application protects treated parts for about one to three months
- Can also be used for the prevention and control of common turf diseases such as brown patch and snow mold

Cleary Chemical

Circle 224 on reader service form



Goose repellent for turf

- Migrate repels geese from areas such as golf courses, lawns, parks, athletic fields, cemeteries or any other turf area where birds graze
- Makes treated turf unpalatable to geese forcing them to feed elsewhere
- Available in one-gallon containers

Gemplers

Circle 225 on reader service form



Roof and wall panels

- DuraRib is a 36-inch-wide roof panel with 1 1/8-inch-high ribs on 12-inch centers and a full sidelap configuration
- An increased number of fasteners is used along the eaves to combat moisture migration from ice and snow buildup
- StarMark wall panels have four major corrugations 1-inch high at 12-inches on center, with a 2 1/4-inch-by-1-inch deep depression between each major corrugation
- StarMark panels are roll formed at 26-gauge or 24-gauge, 50,000 psi minimum yield steel with a zinc or aluminum-zinc alloy coating

Star Building Systems

Circle 226 on reader service form



Deer and rabbit repellent

- All-natural, biodegradable repellent made from derivatives of tree sap, fatty acids, eggs and garlic
- Scent conditions animals to avoid treated areas prior to biting into and destroying plants
- Won't drive away butterflies, honeybees or birds
- Once dried, its odor is undetectable to humans
- Available in ready-to-use spray bottle or in concentrated formula

Liquid Fence Co.

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Volunteer efforts help kids, promote golf's rewards

The Sticks for Kids Foundation can leave an impression on a kid for the rest of his or her life, and members of the Golf Course Builders Association of America are behind efforts to do just that.

The GCBAA established the Sticks for Kids Foundation in 1996 to provide the tools and opportunities necessary to allow as many junior golfers – age eight to 18 – as possible to enjoy the game. The mission of the foundation is to provide as many children as possible with:

- A set of clubs to use while learning to play the game;
- A set of clubs to use as many times as they want while deciding to purchase their own set;
- A chance to experience a sport that teaches etiquette, discipline, integrity and honor on competitive courses; and
- A chance to earn a scholarship to further their education in the field of their choice.

Steve Shoemaker is the president of the Sticks for Kids Foundation and also executive vice president of Alliance Golf, a company that installs lakes, water features and hardscape on golf courses and an associate member of the GCBAA. Shoemaker has been president of the foundation since 2000 and is in his second three-year term. The president of the foundation serves two three-year terms.

"Course construction has been good to all GCBAA members, and all the members have an interest in golf,

so the builders were looking for ways to give back to the game," Shoemaker says.

"There is a segment of the population that doesn't have resources to play the game, so the builders decided to help those kids who are disadvantaged," he says.

"Golf has all the attributes that help create better people. It's something that anybody at any age can develop good characteristics from."

About 20 SFK programs exist throughout the country. There are four requirements to be a part of the program for participating golf courses. They are:

- Each participating golf course must have an active junior program, and the program may establish, enhance or replace a current program;
- Each golf course that receives new clubs or monetary support from the foundation must have the ability to store the clubs for use by junior golfers;
- Each course is expected to promote the program through the use of posters and displays; and
- Each course is expected to work

with local media and businesses to promote the SFK program.

"We wanted our members to be hands-on instead of just giving money or clubs to a program and sitting back and letting someone else run it," Shoemaker says. "The clubs don't go to an individual child, they can go to anyone who is signed up in the program."

The foundation provides 20 to 40 sets of clubs per program, and each one is different. For example, some are after-school programs and others are summer programs.

The program awards two to four scholarships a year – \$10,000 college scholarships given to those qualify kids who go through the program. They're nominated by a person who oversees the program of which they're participating.

Those that want to contribute to the program can in several ways:

- Donate funds that can be used to purchase junior sets of clubs;
- Donate time and energy to support established facilities;
- Donate equipment, merchandise and services that will



Clubs are provided for kids to use.



Kids in the program are rewarded for achievement.

enhance the programs; and

- Help find young kids who would like to experience the game.

Shoemaker says the program needs to be re-examined every once in a while to make sure it continues to head in the right direction.

"We'd like to see more programs operating that impact more kids' lives in more geographic areas," he says.

GCN



Participants listen to volunteers talk about golf's attributes, which can help them develop personal characteristics.

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Absolutely Otherwise IMPOSSIBLES MADE EASY by World #1 Plant Supply



BILLIONS-PROVEN EXTRA-LIFE-MAKER
WORLD'S FAIR **Gold Medal** **HORMS #4** TMs
SUPERthrive **50 IN ONE**



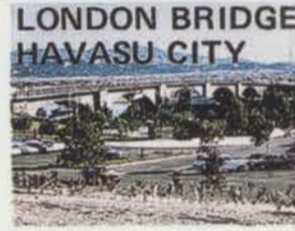
24 of typical worldwide massive "impossibilities"

1800 SALVAGED OLD TREES: "NONE SICK OR DEAD"

SUPERthrive™ unique **extra life**:—TRANSPLANTING, MAINTENANCE, SALVAGING. **"IMPOSSIBLES"** MADE EASY. 1,800 60 to 75 year-old trees dug from grounds of 20th Century Fox Studios, stock-piled in weather for 2 years, replanted along streets of Century City. Landscape architect and contractor reported "not one sick or dead tree at any time." **Only SUPERthrive™ could have done this—or even approached it.**



◀ **400 HUGE SPECIMEN TREES DUG IN HOT, DRY SOUTHERN CALIFORNIA SUMMER. ZERO LOSS.** Disneyland.® "Enabled opening a year earlier". *Disneyland and Disney World are registered trade marks of The Walt Disney Co.



◀ **17 DRUMS PRE-PLANTED A WHOLE DESERT CITY, ZERO LOSS, SPRING AND SUMMER, AFTER FAILURE IN WINTER.** Havasu City, Arizona.

- ZERO LOSS, 3,000-ACRES TRANSPLANTS FOR U.S.D.A., VERSUS 3% SURVIVAL, NEXT BEST. — A GREAT CALIFORNIA STATE RUN UNIVERSITY, SAN LUIS OBISPO.
- PLANTED 10,000 TREES, Seattle World's Fair, WITH ZERO LOSS.
- SAVED ALL OF HUGE SHIPMENT OF PALMS FROM FLORIDA TO 48 Taiwan GOLF COURSES. LOSE OVER HALF WITHOUT.
- 15 GAL. DRUM SAVED \$100,000 — ALL CONDEMNED TREES, U.S. CORPS OF ENGINEERS PENN. JOB — ALCA vice-president, Ohio.
- SAVED ALL GREAT SPECIMEN TREES TRANSPLANTED by U.S. Corps Of Engineers, FOR CAMOUFLAGE, WORLD WAR II.
- TWO WEEKS DIFFERENCE IN HYDROSEEDING GRASS STAND, ALONG FREEWAY BANKS FOR EROSION CONTROL. — Maryland State Highways.
- CELERY ALL TRANSPLANTED PERFECTLY IN 17 LARGE HOUSES, before and after one without, IN WHICH ALL LOST. — California
- 1200 TREES WITH 4" CALIPER TRUNKS BARE-ROOTED IN DESERT JUNE. NO LOSS. — Tucson, Arizona, City Parks Department.
- BIGGEST TRANSPORTATION OF LANDSCAPE MATERIALS, CALIFORNIA TO FLORIDA, TO PLANT Disney World.® NO LOSS.
- 1 GAL. PER 25 ACRES GRAPES, DRIP, 20% MORE YIELD, SWEETER, LARGER, WHILE NEIGHBORS LOST HALF CROP TO SHATTERING STORMS — Calif.
- ALL PALM SPRINGS DESERT GOLF BENT GREENS PERFECT WHILE EACH OTHER COURSE LOST 6 TO 14 BENT GREENS — California.
- BIGGEST TREE EVER MOVED, 100 YEARS OLD. GUINNESS BOOK OF RECORDS. MANY OTHER "BIGGESTS."
- WELL OVER MILLION EACH BARE-ROOT ROSES, ZERO LOSS AND STRONGER — California grower; New Mexico retailer, each..
- LARGE BLOCK ROOTED CUTTINGS TRANSPLANTED WITH SUPERthrive, 100% HEALTHY, WHILE LOSING ALL WITHOUT IT TO FUNGUS IN HEAVY RAINY SPRING.
- "BEST STUFF I EVER SAW" said lead landscape architect, Cal Trans (California State Highways Department).
- ON EVERY CONTINENT, WITHOUT SALESMEN, UNCHALLENGED GUARANTEES SINCE 1940. Just results. REFUSE BEING BURNED BY FALSE "AS GOODS".
- "SUPERthrive IS THE GREATEST PRODUCT IN THE WORLD! Hydroseed with it and get out of the way of the grass!" Possibly U.S. #1 landscape nurseryman-contractor, Washington, Baltimore.



▲ **100% ALIVE, BLOOMING 2,000** transplanted ornamental cherry trees, TYPICAL of over 60 years use by Los Angeles City Parks and L.A. Schools. Losses otherwise.



◀ **38 EXTRA INCHES PINES GROWTH ABOVE FERTILIZERS-ALONE. SEVEN MONTHLY USES** Tucson, Arizona, City Parks.



◀ **RECORD TREE-SAVING & BEAUTIFYING, 60+ YEARS,** California State Capitol, Cal Tech, University of Cal., Caltrans, many other State departments, grounds, campuses.



◀ **SAVING 50,000 CACTI, TREES** along Nevada's Mojave desert pipeline, at 120°, Reported planted ALL famous, and "world's biggest" Las Vegas hotels. Pushes back Africa desert.

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