

GOLF COURSE NEWS

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INSIDE

1999 Management Co. List

The much-anticipated listing of management firms and their courses 51

New Chemistry Abounds

An in-depth look at several of the new chemical products from this year's big show 61



GARL ADDS MCFARLANE TO DESIGN FIRM
Architect Ron Garl (right) has added Scotsman Steven McFarlane to his design team. McFarlane is expected to bring additional expertise to Garl's growing portfolio of international and domestic projects. See story on page 44.

COURSE MAINTENANCE

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Pre-opening sparks fly at Roaring Fork

By MARK LESLIE

ASPEN, Colo. — The Roaring Fork Club is opening July 1, but the spotlight may already have been stolen by a criminal court case in which the project manager for the development will stand trial on three counts of felony theft and one of failure to appear.

Michael Bolton is charged with allegedly stealing \$230,000 in cash from the Roaring Fork Club during three separate six-month periods.

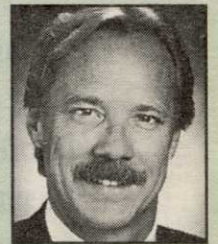
Each is a Class 3 felony punishable by up to 24 years in jail, according to Pitkin County Assistant

Continued on page 6

CMAA faces 'image' issue

By PETER BLAIS

SAN FRANCISCO — Enhancing the club manager's image and the election of a new slate of officers, including the organization's first female officer, were the foci of the Club Manager's Association of America's (CMAA) recent annual meeting here.



New CMAA President Paul Skelton

Like the Golf Course Superintendents Association of America, which has made enhancement of the superintendent's image a major organizational mission, the private club managers association is also seeking to improve the perception of club managers and general managers in the communities in which they work.

"Everybody wants to be identified as a professional," said CMAA Executive Vice President James Singerling. "Identifying themselves not just to the choir [themselves] but to the rest of the congregation [club members and community] as well is probably something they [club managers]

Continued on page 60



NORMAN TO OPEN FIRST COURSE IN SOUTH CAROLINA

MYRTLE BEACH, S.C. — Above is a view of The Reserve Golf Club's No. 5, a mid-length par-4. Waste bunkers at the Greg Norman-designed Reserve are filled with native red sand and provide a strong contrast to the Feldspar sand traps. It marks Norman's first course in the Carolinas and is expected to open officially in late April.

Eco-Soil inks innovative deal with Chubb

By M. LEVANS

SAN DIEGO — On the heels of its EPA approval for the use and distribution of its biopesticide,

Spot-Less, though the BioJect biological distribution system (GCN, March '99), Eco-Soil has inked a deal with Chubb Insurance that offers comprehensive coverage at a reduced rate for users of the company's system.

Under the guidelines of the deal, Eco-Soil customers using Chubb insurance will be provided expanded liability, environmental liability and expanded prop-

erty coverage. In short, Chubb has identified courses using biologicals as a lower financial risk and will, in turn, protect the club, its owners, officers and directors from environmental claims.

"As we bring this technology to superintendents we want to demonstrate to them that biologicals are the way to go," said John Doyle, vice president,

DEVELOPMENT

Flat pipe revisited

Out with the thin, in with the new

By MARK LESLIE

COLUMBUS, Ohio — Out with the thin-slitted flat pipe; in with the regular-slitted style. That is the determination of the manufacturer as well as superintendents at golf courses that have used the flat AdvanEDGE Pipe made here by Advanced Drainage Systems, Inc. (ADS).

"We decided not to use the sand-slot [as if slit by a razor] pipe in the golf market because of the soil mixtures people are using," said Kevin Rapp, ADS' marketing manager for golf courses. "We are recommending the regular-slotted pipe, whose perforations are much bigger, with the sock on it."



By "sock," Rapp was describing a geotextile fabric that fits over the pipe like the outer skin of a snake and prevents sand or soil from plugging the slits. A Maine golf course that had used the flat pipe in its practice green reported problems with it, which Rapp attributed to a sludge-type subsoil. A couple of other courses

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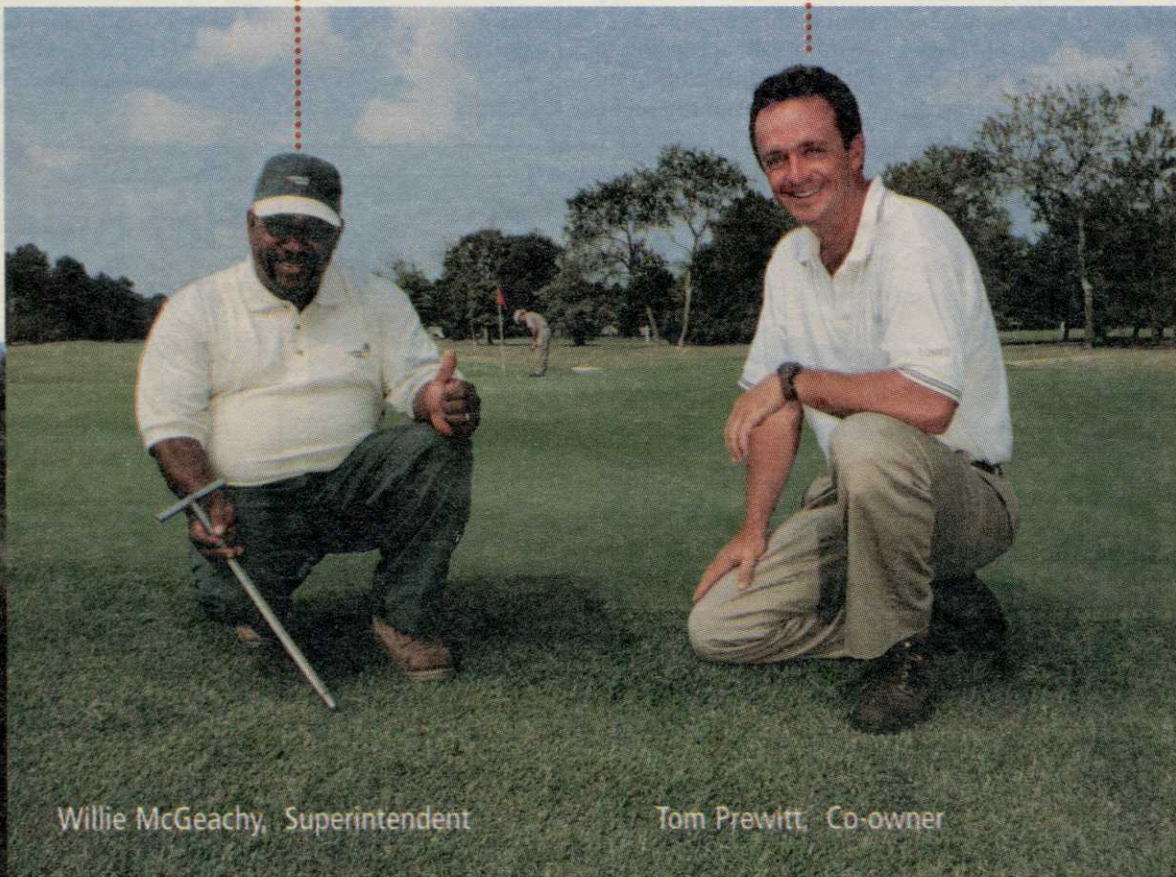
Continued on page 48

Penn A-4 creeping bentgrass succeeds at Cypress Lakes

"We just couldn't keep grass on this green before. I'd worry about keeping the players happy, but now I sleep better at night with Penn A-4 bentgrass."

"We planted Penn A-4 in the fall of 1994, '95 and '96. We faced very poor grow-in conditions, including two hurricanes, and were still able to open for play eight weeks after seeding all three years. Willie and I have a very limited budget to work with, and have heard the hype about increased expense and labor involved with managing newer bent varieties. With Penn A-4, we've found this simply isn't true. The exceptional putting surface we have obtained here at Cypress Lakes more than outweighs any addi-

tional effort on our part. It's a relief to know we have superior heat tolerance working for us in the south, and on this green in particular where nothing seemed to grow next to our namesake cypress lake. We maintain a 0.125" cut throughout the summer, which makes for a truly consistent year-round putting surface with no adverse affect on plant health. We believe that Penn A-4 will continue to perform for our 18 greens here at Cypress Lakes, and we thank the team at Tee-2-Green for introducing it to us."



Willie McGeachy, Superintendent

Tom Prewitt, Co-owner

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Study identifies 'over'- and 'under'-supplied areas in the United States

By ANDREW OVERBECK

MADISON, Wis. — Several Michigan cities have too many golf courses while Anchorage, Alaska, leads a group of smaller cities in need of more golf facilities, according to Stephen Malpezzi, a real-estate professor at the University of Wisconsin, who has created a statistical model that predicts the overall market for golf course development in 290 metropolitan statistical areas in the United States.



Stephen Malpezzi

The model, explained in his paper, "The Market for Golf," identifies the most "over golfed" (too many courses) and "under golfed" metropolitan areas in the country.

According to Malpezzi's findings, the top 10 oversupplied cities are Ann Arbor, Mich.; Sarasota, Fla.; Kalamazoo, Mich.; Fayetteville, Ark.; Jackson, Mich.; New Bedford, Mass.; Fort Pierce, Fla.; Biloxi, Miss.; Grand Rapids, Mich.; and Grand Fork, N.D.

The top 10 undersupplied cities are Anchorage Alaska; Sherman, Texas; Wausau, Wis.; Waterbury, Conn.; Williamsport; Pa.; Decatur, Ill.; Medford, Ore.; Fort Lauderdale, Fla.; Texarkana, Texas; and Miami, Fla.

Malpezzi is quick to caution that the model should be accompanied by further research. "The model itself doesn't tell you everything that you need to know, but if you do some research you will find that there are some consistent stories to be told about what's

Continued on page 12

Top 10 under-supplied cities

METRO AREA	STATE	MODEL'S PREDICTION HOLES PER 1,000 POP. IN 1993 (A)	ACTUAL HOLES PER 1,000 POP. IN 1993 (B)	SHORTAGE OF HOLES PER 1,000 POP. IN 1993 (A-B)
Anchorage	AK	.8417	.1591	1.0008
Sherman	TX	.8362	.3789	1.2151
Wausau	WI	.6292	.5459	1.1751
Waterbury	CT	.6168	.5279	1.1447
Williamsport	PA	.6023	.4549	1.0572
Decatur	IL	.5880	.6143	1.2023
Medford	OR	.5795	.3689	.9484
Ft Lauderdale	FL	.5658	.7169	1.2827
Texarkana	TX	.5365	.4495	.9860
Miami	FL	.5212	.3392	.8604

Top 10 over-supplied cities

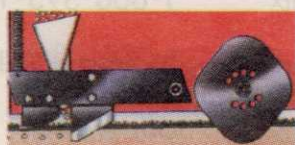
METRO AREA	STATE	ACTUAL HOLES PER 1,000 POP. IN 1993 (A)	MODEL'S PREDICTION HOLES PER 1,000 POP. IN 1993 (B)	OVERSUPPLY OF HOLES PER 1,000 POP. IN 1993 (A-B)
Ann Arbor	MI	1.7099	2.4811	.7712
Sarasota	FL	1.6594	3.6936	2.0342
Kalamazoo	MI	1.5707	2.4976	.9269
Fayetteville	AR	1.3681	2.1427	.7746
Jackson	MI	1.1318	2.1034	.9716
New Bedford	MA	1.1053	2.1009	.9956
Fort Pierce	FL	.9522	2.5451	1.5929
Biloxi	MS	.9060	1.6436	.7376
Grand Rapids	MI	.9048	1.7780	.8732
Grand Fork	ND	.8465	1.7826	.9361



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Roaring Forks

Continued from page 1

District Attorney Lawson Wills.

Bolton is being held in Pitkin County Jail on \$500,000 bail after having jumped bail late last year, Wills said. He said Bolton posted a \$75,000 bond last year, but did not appear for a Nov. 30 court date and was re-arrested on Dec. 4.

Bolton, a resident of Rifle about an hour and a half from this community, awaits a trial that Wills said is scheduled to begin May 25.

He had been directing construction for the developers — David Wilhelm, Jim Light and Jim Chaffin — of the Jack Nicklaus-designed golf course at the Roaring Fork Club. It is a high-profile, environmentally sensitive project that has entailed a cooperative effort with the non-

profit Roaring Fork Conservancy, the Colorado Division of Wildlife, the Army Corps of Engineers and the town of Basalt, 16 miles west of Aspen.

Wilhelm, who developed the well-known Cordillera Valley Club in Edwards, had joined Light and Chaffin in committing high-end dollars to this project, including numerous environmentally progressive measures such as \$300,000 to enhance

Roaring Fork River.

The District Attorney's Office alleges that Bolton absconded with \$230,000 of the developers' money.

Bolton reportedly worked for Paragon Construction at the nearby Aspen Glen facility before taking the Roaring Fork job.

Wadsworth Golf Construction Co. is the general contractor for the golf course, but has no connections with Bolton.

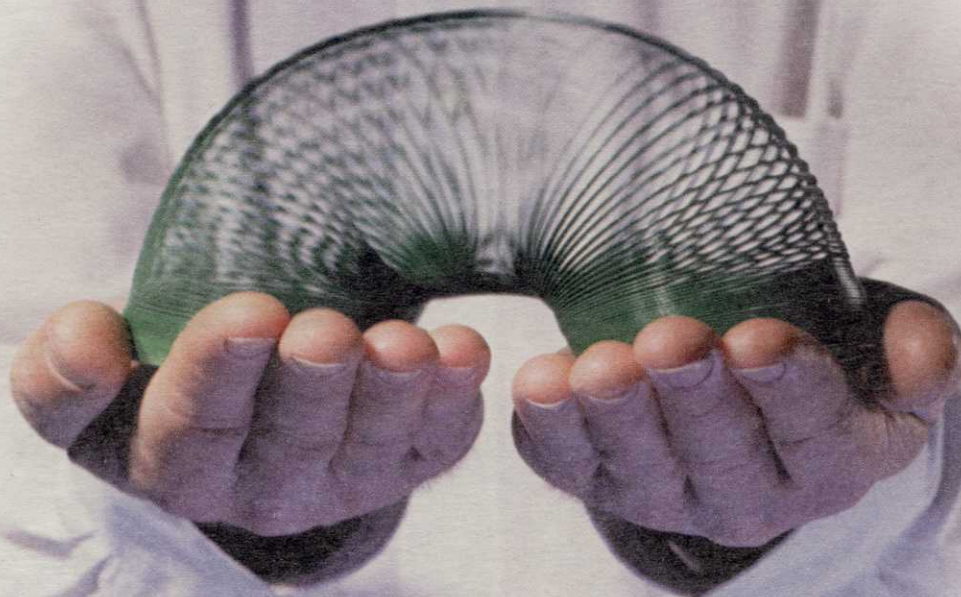
A succession of three golf course superintendents — Kevin Adams, Scott Todd and David Lauritson — worked with Bolton, but reportedly quickly left for other jobs. Bob Clarkson has since taken the position.

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Golfers prefer walking over riding in carts

JUPITER, Fla.—Judging by the number of golf cars roaming the nation's fairways, it may be hard to believe that the vast majority of today's golfers will tell you they'd rather walk than ride.

But that's one of the interesting facts that came out of the latest National Golf Foundation/USA TODAY Golf In America on-line survey. Of the 700 golfers who took the survey, more than 70 percent said they prefer to walk.

Why don't more golfers walk? It's not because the courses they play are mandating the use of golf cars. That idea was put to rest when 85 percent of the respondents said walking is an option at the courses they play most regularly.

It's also not because golf cars necessarily speed up play. Less than 40 percent of the respondents said they believed this to be so. Most survey respondents commented that the golf car's ability to speed up play is being negated by drivers who are naturally slow or unthinking. The other problem they cited is the much-maligned cart-paths-only rule.

What's the going average golf car rental fee? Among those who took this survey, it's about \$15 per person for 18 holes.

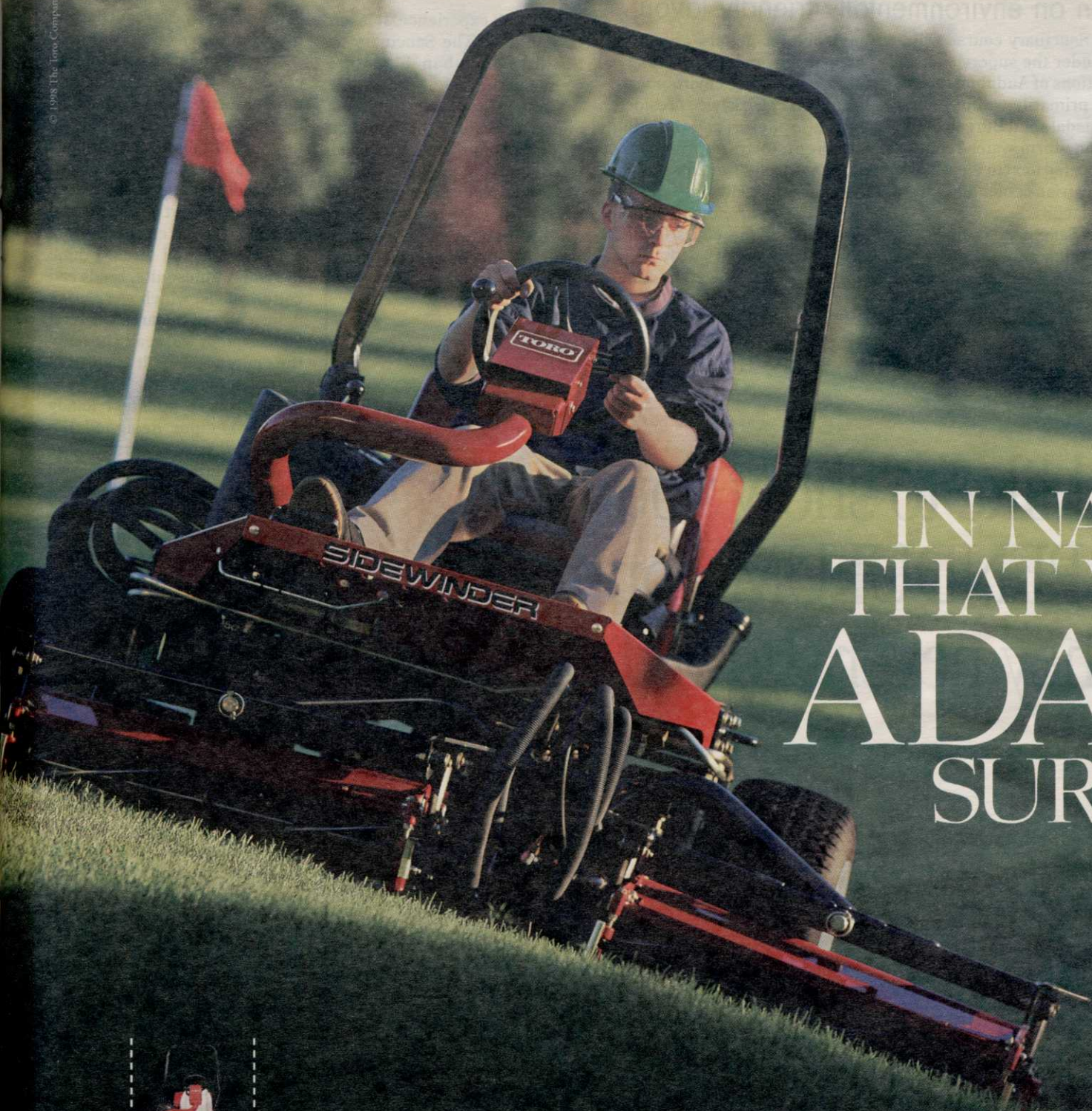
COYOTE CREEK WRAPS UP CONSTRUCTION

FT. LUPTON, Colo.—Big sky, waving wheat, and mountain vistas will soon greet guests of Coyote Creek, Ft. Lupton's new 18-hole course.

With construction on the clubhouse wrapping up, preparations are underway for the course's grand opening in May. Coyote Creek is located approximately 30 miles north of downtown Denver.

The golf course was designed by Architect Matt Eccles. Approximately 300 trees were added to the site, and water comes into play on many of the holes.

While city owned, Coyote Creek is managed by RBI Golf Management, a Littleton-based company.



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TORO REELMASTER

SunCor begins construction on environmentally friendly layout

SCOTTSDALE, Ariz. —SunCor Resort and Golf Management, along with Capital Realty Corp., has begun construction of The Sanctuary Golf Course at WestWorld.

The course will work closely with Audubon International to build the 18-hole championship facility, providing the area with a form of wildlife "sanctuary."

The Sanctuary course will be built under the supervision and regulations of Audubon International, primarily within the city of Scottsdale and Bureau of Reclamation storm water retention area, located next to WestWorld, an equestrian center and special events facility.

"The Sanctuary is dedicated to providing an exceptional ex-

perience for golfers as well as supporting and maintaining a healthy, thriving environment," said Tom Patrick, vice president of SunCor Resort and Golf Management. "By applying the Audubon requirements to The Sanctuary, it will not only improve the environment and the condition of the course, but it will provide golfers with a very

unique golf experience. It is our goal to have The Sanctuary be the first Audubon Signature course in the state."

To attain the coveted Audubon Signature Status, the Audubon requirements must be incorporated into the earliest design phases of the course development to manage issues such as wildlife habitat enhancement, water quality management and

conservation, waste reduction and management and pest control.

"It's a wonderful idea for golf courses to work with the natural environment instead of against it," said Dave Harris, adjunct faculty for Audubon International. "Some of the species The Sanctuary course hopes to reintroduce and support on and around its course are an entire family of native plants and birds. I think the willow, mesquite, reeds and cottonwoods, which were originally a part of the area's natural landscaping, will really beautify the course and set it apart from others in the area."

Golf course architect Randy Heckenkemper designed the 6,900-yard, par-71 course to have an ecosensitive layout which will take advantage of the land's natural terrain and vegetation. When complete, the course will feature 80 acres of turf, 55 sand bunkers and one large water feature complete with two multi-tiered waterfalls.

Chang, Hoffman among new NGF directors

JUPITER, Fla.— Dominic Chang, chairman of the board and chief executive officer (CEO) of Family Golf Center, Inc., and Michael Hoffman, vice president and general manager of The Toro Company's commercial division, have been elected to the National Golf Foundation's board of directors.

The action came at the board's January 30 meeting in Orlando.

The remaining NGF board of directors for 1999 are:

- Robert L. Maxon, NGF Chairman and Senior Vice President/Group Publisher, Golf Digest—The Golf Company.
- Joe Barrow, NGF Vice Chairman and President and Chief Operating Officer (COO), Izzo Systems, Inc.
- Cindy Davis, NGF Secretary/Treasurer and President & CEO, The Arnold Palmer Golf Co.
- Joseph F. Beditz, NGF President and CEO.
- Ed Abrain, Executive Vice President of Sales and Marketing, Titleist and FootJoy Worldwide.
- Scott Creelman, Executive Vice President, Spalding Sports Worldwide
- George Peper, Editor-in-Chief, GOLF Magazine.
- Bob Rief, Assistant to the President, Callaway Golf Co.
- James Ritts, Commissioner, LPGA.
- Allan Solheim, Executive Vice President, Karsten Manufacturing Corp.
- Grant Spaeth, Vice President, CBS SportsLine.
- Edwin Watts, President, Edwin Watts Golf Shops, Inc.

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Ronstar ^d	○	■	NR	○	○	NR	NR	NR
Surflan ^c	■	■	■	○	▲	○	■	■

Level of control ○ Medium ▲ Medium-High ■ High NR Not registered

^aNovartis ^bRohm and Haas Co. ^cDow AgroSciences ^dRhône-Poulenc



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Washington entrepreneur acquires Plateau G&CC

BELLEVUE, Wash.—Plateau Golf, LLC and Oki Developments, Inc. have purchased Plateau Golf & Country Club, a private 18-hole course on the Sammamish Plateau near Redmond. Terms of the transaction were not disclosed.

The Plateau course, which opened in 1998, becomes the fourth Puget Sound area golf property in Oki Developments' holdings. The other facilities include

Echo Falls Country Club, a daily-fee public course in Snohomish, Indian Summer Golf & Country Club, a private course in Olympia (acquired in November 1997) and The Golf Club at Newcastle, a public golf complex (with limited joining options) that will open in phases starting in May.

Plateau Golf & Country Club, a

7,200-yard championship course on 220 acres, is part of a new residential community. The golf portion of the project is a development of Taiyo Golf Development of Issaquah whose parent company, Taiyo Company, LTD, is the fifth-largest golf course developer and management firm in Japan. The course design is a collaboration between Taiyo

Company's Masatugu Saito, who is considered one of Japan's foremost golf course architects, and Dye Designs International, Inc. of Denver.

In addition to the golf facilities, a 30,000-plus-square-foot clubhouse is under construction, with completion expected this summer. Plans also call for outdoor swimming pool and tennis courts.

Oki Developments, Inc. is an investment company with di-

verse interests. In addition to golf course development and management, it is involved in real estate, restaurants, a professional soccer team and early-to-development-stage information technology companies.

Prior to founding Oki Developments, Oki served in a variety of executive positions at Microsoft Corporation, retiring in 1992 at age 43.

Calif. city may help build first public course

PALMDALE, Calif. — The Palmdale City Council is considering providing \$2.5 million in bond revenue to help develop the city's first public, 18-hole course.

According to the *Palmdale Daily News*, the money would assist Rancho Vista Development Co. build the \$8 million course on the city's west side. The bond money would finance construction of water and sewer lines, street paving, and storm drains.

The course was first approved as part of the 1988 specific plan for the 1,307-acre Rancho Vista housing development. Course construction was delayed by recession in the early 1990s.

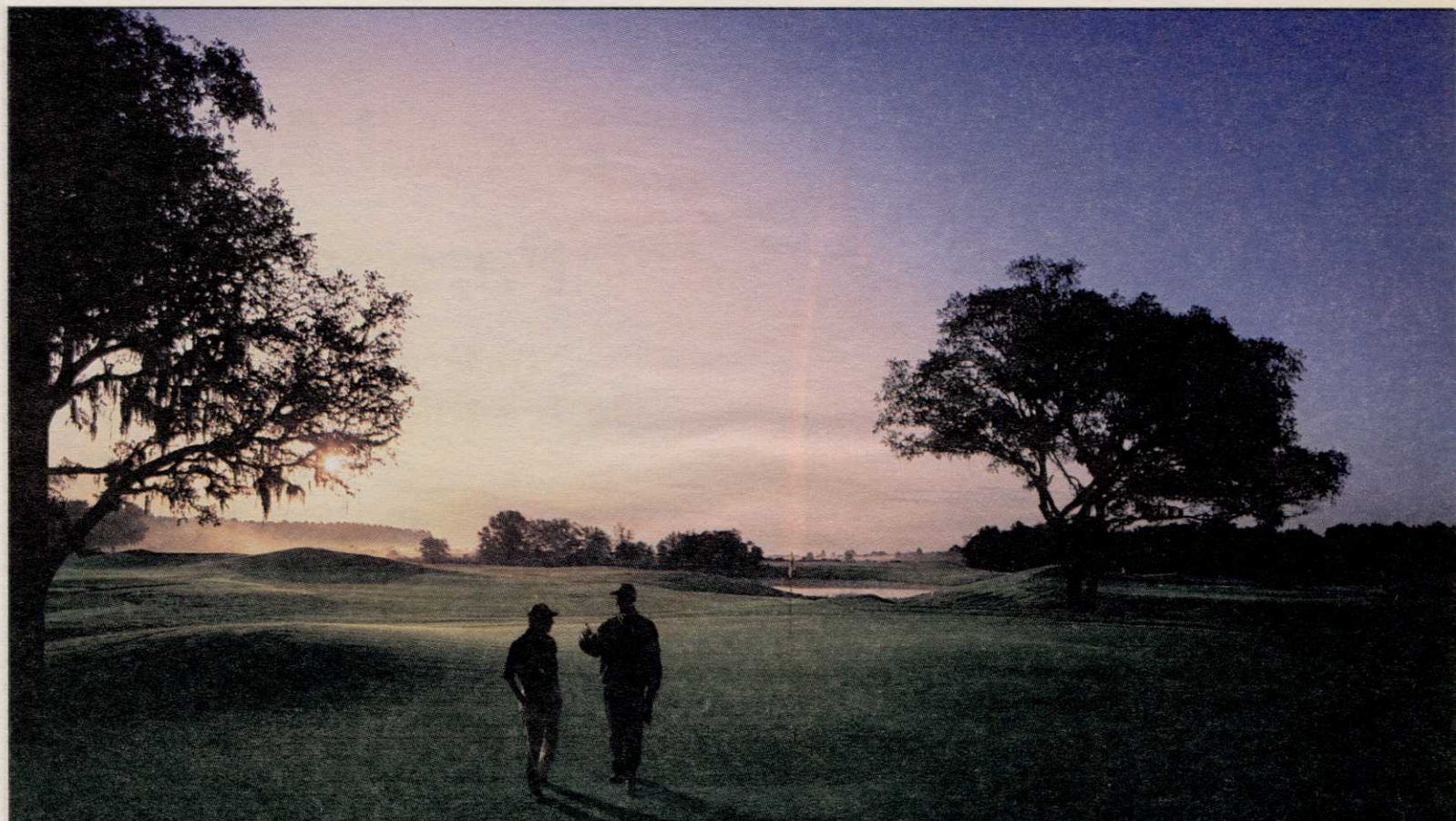
Under the bond financing proposal, the average annual bond payments of \$230,000 would be paid through the tax increment, the increase in city property tax revenue resulting from new construction in the area. Rancho Vista would be required to complete the course by 2002 or pay damages of \$230,000 annually.

ClubLink buys Glen Abbey GC

KING CITY, Ontario—ClubLink Corporation has completed its \$40 million (Cdn) purchase of Glen Abbey Golf Club, the top-ranked public course in Canada and site of the 1999 Bell Canadian Open.

ClubLink will continue to operate the Jack Nicklaus-designed, 18-hole course as a daily-fee golf course.

As part of the agreement, ClubLink will host the Bell Canadian Open at Glen Abbey a minimum of four times through 2009. The Open will be held a minimum of one time between 2010 and 2014, and a minimum of one time between 2015 and 2019. ClubLink will lease Glen Abbey to the Royal Canadian Golf Association (RCGA), at market rates, for the Open.



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IRRIGATION

Supers, pros, managers expand joint retirement plan

ALEXANDRIA, Va.—In a cooperative effort, the Club Managers Association of America (CMAA), PGA of America, and the Golf Course Superintendents Association of America (GCSAA) jointly announced the expansion of Golf Retirement Plus to allow employers to contribute to their members' accounts. As a result,

golf employers now will be able to offer Golf Retirement Plus to members employed at the more than 9,400 CMAA-, PGA- and GCSAA-staffed facilities nationwide.

Golf Retirement Plus is a supplemental retirement program that allows employers to use a single program and reward

key professionals who are CMAA, PGA and GCSAA members. With Golf Retirement Plus, employers can offer many of the benefits associated with 401(k) or other retirement plans, but with reduced tax, administrative and investment burdens.

Respective CMAA, PGA and GCSAA members control their

own accounts and make all investment decisions. Employers can make tax-deductible contributions directly into the employees' annuity accounts on a monthly, quarterly, semi-annual or annual basis. Contributions made by the employer are taxable to the employee.

"This kind of cooperation with the PGA and the GCSAA is the foundation for working for the

common good for our members," said CMAA President Bill Kendall, CCM. "We are excited to be part of a retirement program which will benefit our members in their future years."

"CMAA, PGA and GCSAA are pleased to offer Golf Retirement Plus to our respective members and their employers," said PGA President Will Mann. "This venture shows the cooperative spirit that our allied associations share to provide excellent retirement options."

"We are thrilled to participate in Golf Retirement Plus," said GCSAA President George Renault III, CGCS. "The ability to provide our members and their employers with a simple and low-cost retirement program is an excellent example of what our associations can do together."

Club managers, PGA professionals, PGA assistant professionals and golf course superintendents can open an annuity account by calling 1-877-RET-PLUS (1-877-738-7578).

Expanded Mass. facility to open

REHOBOTH, Mass.—Hillside Country Club will open its fully expanded, 18-hole golf course this spring.

A nine-hole enterprise since 1975, Hillside has been owned and managed since 1989 by George Cardono, who immediately launched a program to revamp and redesign the course to become the 18-hole venue it is today. Cardono has a lengthy background in design and golf and is a member of the National Golf Course Owner's Association (NGCOA), the Golf Course Superintendents Association of America (GCSAA) and the Rehoboth Business Association (RBA).

Said Cardono: "Thanks to our grounds superintendent, Serafim Costa, our 18-hole course will be a treat for knowledgeable golfers who appreciate the hard work that goes into maintaining a golf course on a daily basis." Costa, who has been superintendent at Hillside since 1985, has 25-years experience in golf course maintenance. Costa is also a European Golf Champion, winning the TAP Portuguese Open in 1979.

"My dream is about to come true," says Cardono of his 10 years at the drawing board, at the controls of heavy equipment, or at the end of a shovel or a rake. "It's a great feeling to see your vision become a tangible entity, to know that people will enjoy, probably curse from time to time, but in the end, admire what we're doing."

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1. Michigan State University 1989, 2. Iowa State University 1993, 3. Rutgers University 1997

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Piedmont DC picks site for new Atlanta course

ATLANTA — This city's Piedmont Driving Club has selected 538 acres in south Fulton County to build its new golf course, according to the *Atlanta Journal and Constitution*.

Bob Glenn, president of the Piedmont Driving Club, said the site's beauty, price and proximity to major freeways led to the decision to purchase the heavily treed site.

The 18-hole course is scheduled for comple-

tion in November. When finished, the property also have a nine-hole, par-3 course, clubhouse and a boathouse.

The Piedmont Driving Club bought the property for \$8 million last April. It hired Rees Jones to design the facility. At one time, the property was owned by developer Jim Cowart, who hoped to build single-family homes, condominiums, conference center and golf course on the site.

LandCare takes over Indiana's ServiScape

MICHIGAN CITY, Ind.— ServiScape Inc., a 16-year-old golf course contract maintenance management company, has been acquired by Houston-based LandCare, USA, a national provider of landscape and tree services to the commercial and institutional markets.

According to Peter Sinnott, ServiScape's president, "becom-

ing part of the country's leading landscape company will enhance our ability to grow more rapidly into other regions of the country. It will also benefit our current golf course customers through a broader range of available services and expertise and increased purchasing power for materials, supplies and maintenance equipment."

Abacoa locates new buyer for Florida layout

JUPITER, Fla. — Abacoa Development Co. has found a buyer for its public golf course under construction at Abacoa, according to the *Palm Beach Post*.

The buyer is Golf First — a partnership whose principals are PGA golf professional Jerry Kamis of Jupiter, amateur golfers Robert Dew and Carl Sawyer of Atlanta, and Sawyer's son, Brannon Sawyer. The group has agreed to buy the 130-acre course and build a clubhouse. The sale will close May 1.

Joe and Frank Jemsek, a father-son team who operate Cog Hill and Pine Meadows courses near Chicago, were the original developers, but backed out about two years ago.

Unable to find another buyer, Abacoa hired Joe Lee to design the course and Tifton-Turf of Tifton, Ga., to begin building it last December.

Abacoa is a 2,055-acre development that eventually will have 6,000 homes, a university and town center. Roger Dean Stadium, where baseball's St. Louis Cardinals and Montreal Expos train, opened last spring.

The course is expected to open Oct. 1. Work should begin shortly on a 20,000-square-foot clubhouse.

GNGC purchases Minn. golf course

STACY, Minn. — The Great Northern Golf Company (GNGC) has purchased the Falcon Ridge Golf Course here. Falcon Ridge is a public, daily-fee course with an 18-hole regulation course and a 9-hole executive layout. Stacy is 40 minutes north of downtown Minneapolis.

Other facilities owned by GNGC included The Pines at Lake Isabella in Weidman, Mich., and The Bridger Creek Golf Course in Bozeman, Mont.

Principals of the GNGC include PGA professionals Joe Schumer (Michigan Section) and Mark Holiday (Rocky Mountain Section), and GCSAA member Dane Gamble (Peaks and Prairies chapter).

1972

1974

1977

1979

1982

1985

1989

1993

1996

1999

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It's about productivity

Golf study

Continued from page 3

been happening in these areas," he said.

The model suggests which markets need more golf by predicting the number of holes per capita that would be required given the area's demographic make-up, climate and size. Malpezzi compared the model's prediction to the actual number of holes per 1,000 population in each metropolitan area. The areas that have fewer holes than the model predicts are considered "under-supplied" and worthy of investigation for future development. The areas that have more golf than the model predicts are considered "over-supplied" (see Top 10 "over" and "under" supplied cities chart).

However, since the model used 1993 National Golf Foundation (NGF) statistics on the number of holes of golf in each metropolitan area, the door is open, as Malpezzi recommends, for further research.

Armed with 1997 statistics from the NGF on the numbers of golf holes in the top 10 "over" and "under" supplied areas, *Golf Course News* created an updated table that measures the relative success of Malpezzi's model by charting the growth of golf in each metropolitan area and comparing it with what his model predicted (See Growth in Development in "Under" and "Over" Supplied Cities). While this comparison fails to update the other statistics in the model (given population shifts Waterbury, Conn. and New Bedford, Mass., had to be thrown out), it does offer some interesting perspectives on its usefulness.

All the under supplied areas experienced growth in the number of golf holes built between 1993 and 1997 and some actually came close to achieving the amount of golf holes predicted by Malpezzi's model. Medford, Ore. tops the list, coming within four holes of the model; Sherman, Texas came within seven holes; and Decatur, Ill. and Wausau, Wis. came within 15 and 19 holes, respectively.

The Medford area not only came closest to matching the model, it also experienced a development boom, growing from 54 holes in 1993 to 135 holes in 1997. According to Jim Cochran, general manager at Stoneridge Golf Club, which opened in 1995, the Medford area has become quite competitive and might be reaching its saturation point.

"I would say we have at least one 18-hole course more than we should," said Cochran. "Anyone else thinking about coming in and putting another course in here will certainly struggle in the long term."

Dan Coughlin, general man-

Continued on next page

Growth in golf development in under-supplied cities

METRO AREA	STATE	ACTUAL HOLES	ACTUAL HOLES	MODEL'S IDEAL NO.	SHORTAGE OF
		1993 (A)	1997 (B)	OF HOLES (C)	HOLES (C-B)
Anchorage	AK	36	72	191	119
Sherman	TX	36	72	79	7
Wausau	WI	63	117	136	19
Williamsport	PA	54	72	125	53
Decatur	IL	72	126	141	15
Medford	OR	54	135	139	4
Fort Lauderdale	FL	900	1,251	1,610	359
Texarkana	TX	54	72	118	46
Miami	FL	657	684	1,667	983

Why

more greens will be doing a 180 th

Official
Golf Course
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Growth in golf development in over-supplied cities

METRO AREA	STATE	ACTUAL HOLES		MODEL'S IDEAL NO.	SURPLUS OF HOLES (B-C)
		1993 (A)	1997 (B)	OF HOLES (C)	
Ann Arbor	MI	702	981	218	763
Sarasota	FL	1,026	1,332	565	767
Kalamazoo	MI	558	693	207	486
Fayetteville	AR	243	333	88	245
Jackson	MI	315	360	145	215
Fort Pierce	FL	639	981	400	581
Biloxi	MS	324	360	145	215
Grand Rapids	MI	1,224	1,566	601	965
Grand Fork	ND	126	162	66	96

Golf study

Continued from previous page

ager at Stuart Meadows Golf Course, which opened in 1994, agrees. "For our population, we have quite a bit of golf courses in town."

While Malpezzi's model seems to have touched on a valuable trend in Medford, one has to dig a little deeper to figure out why the number of golf holes in the so-called "over-supplied" areas continues to grow (see Table 3).

All of the "over-golfed" areas experienced incredible growth between 1993 and 1997 and further distanced themselves from the model's predictions. Ann Arbor, Mich. grew by 279 holes and Fort Pierce, Fla. and Grand Rapids, Mich. each grew by 342 holes. What is happening here?

According to Dave Richards, head of Golf Marketing Services in Bloomfield Hills, Mich., certain sectors of the golf market in Michigan are hurting. "Michigan opened 35 courses last year and, while the new high-end public courses are doing well, the mid-level public courses are getting squeezed out of the market," said Richards.

He predicts in the next couple years, many of the public golf facilities in Michigan will be bought by management companies. "The small courses on their own are not doing as well, they have a hard time competing. Already there are some courses for sale for less than it cost to build them," said Richards.

Jim Scott, president of Gull Lake View Golf Club and former president of the Michigan Golf Course Owners Association, owns five courses in the Grand Rapids/Kalamazoo corridor and has also noticed an increase in competition.

"While Michigan has a very high participation rate, we have introduced a lot more golf courses in the last four years and haven't grown the population of golfers that much," said Scott. All of this has led to greater competition for the same amount of golfers. "By the end of the year, you miss tee times that you normally fill because everyone is competing for golfers," said Scott.

Malpezzi is not surprised the model has identified interesting trends and relates the continued growth in Michigan to a phenomenon he studied in the 1980s in the office space market. "Over building continued for awhile after it was clear that the saturation level had been reached, mostly due to the lag time involved in the development process from planning stages to getting the project started," said Malpezzi. The same thing could be happening in the Michigan golf market.

However, industry experts point out some flaws in Malpezzi's model.

Continued on page 71

April 1999 13

5 year.



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April is so cruel, and other random notes

When you live up north this is the cruellest time of year. We're on the shoulder up here, taking a long walk on a 50-degree Sunday then fighting to keep your car on the road on a blustery Monday. The snow is just about gone and a brownish covering is becoming visible through the trees at my local 18. You peer through the maze in hopes of seeing the superintendent's utility vehicle making the rounds. Nothing.

On Saturdays and Sundays they're feeding us third and final round coverage of the fresh PGA Tour season. Knowing that we're at least three weeks away from dropping a ball in the queue makes the Tour, at this stage in the game, almost unwatchable. I turn the channel to hockey. April is too cruel.

I wish I could go on about Fairways '99 in Munich last month, but to be perfectly honest, there wasn't much breaking news rattling around the halls this year. Last year, of course, all the chatter focused on the Asian market and its inevitable halt. Most projects remain on hold while a precious few get underway. *GCN* will have a full Asian report ready to go next month.

In the meantime, the European market appears to be cruising along at a steady pace. It's funny how the top European issue continues to parallel one of the hottest issues in the U.S. — affordable, accessible golf. While Europe has nothing in place like The First Tee program just yet, talk was banded about on how to establish such an industrywide initiative. Perhaps we'll drop a couple First Tee stories in our next international edition to push them along.

Golf has an identity problem in Europe, but that could be changed if the industry begins to reach for a broad market outside of the tourist and existing wealthy.

Toro has been doing it for close to five years, now John Deere has launched its JD ProConditioned line of golf and turf products, the company's first formal program to help put turf equipment rolling out of a lease back on the golf course (page 61). It seems the perfect time to get on the used equipment bandwagon, especially with the increasing number of additions under construction.

A program like this, however, demands full distributor cooperation, according to Toro's Jim Heinz, the company's aftermarket business manager. "Our business opportunity has been through distribution, whether it's refurbishing or repair," he said. "We're spending resources to help our distribution channel improve their offering to the end user."

If distribution is the key, I can't imagine that Deere will have much trouble getting the new program off the ground.

Managing Editor Mark Leslie isn't too keen on his new photo (cast your eyes to the right). I think it captures Mark perfectly. Let him know what you think about our new venture into realism.



Michael Levans,
editor

A heapin' helpin' of Canadian hospitality

So you haven't tasted Canadian camaraderie and hospitality, eh? Haven't sampled that country's version of turfgrass conference, networking and banqueting, eh?

American superintendents, especially those along the Northern tier of The States, might want to check out future Canadian International Turfgrass Conference and Shows.

Much smaller and briefer than the Golf Course Superintendents Association of America's 17,000-attendee event, the Canadian show nonetheless packs a lot of information into three days of sessions. And when attendees aren't learning, they're having fun with one another — and life in general.

Thanking my hosts, particularly Canadian Golf Superintendents Association (CGSA) Executive Director Vince Gillis, I brought back a brief sampling from Toronto:

- Superintendent of the Year Bob Heron on the difference between golf course maintenance in Canada and the United States:

"Southern superintendents like to tease us about working six months a year. We tease them that it's a tough job to kill Bermudagrass."

Any comparison, he said, must be budget-related. "Compare private to private course and public to public and there is not a lot of difference. The grasses are different. But in terms of grooming, the good courses are all groomed properly."

While Southerners have "their set of problems with insects and mole crickets and high humidity," he said, "we start preparing for winter back in May — aerification, fertility, draining the irrigation system, starting from scratch every spring."

- Toronto Board of Trade superintendent Gordon Witteveen on his longtime friend, Heron: "Bob and I have one thing in common: For awhile we both had hairpieces..."

"He seems to have overcome an affliction which he had early in his career — which is to throw golf clubs."

- Superintendent Bert McFadden of Chateau Whistler Golf Course in British Columbia: "In BC grass can grow anywhere. You can grow it on the side of your car."

- Superintendent and former GCSAA President Gary Grigg on courtesy: "A number of superintendents have lost their jobs because of how a crew member treated a member or guest... Courteously respond quickly to requests from guests, members and others."

- Dean Piller, new president of the CGSA, from Cordova Bay in Victoria, B.C., on priorities: "We tend to make the golf course our top priority. But, the most important thing we manage is people."

- Serious science was also shared, such as the report from Dr. Tom Hsiang of Guelph University that the biological agent *Typhula phacouhiza* effectively controls snow mold. From last year through 2001, he said, \$300,000 more will be spent on work to register *Tp* as a biological control through the Pesticide Management Registration Agency.

Hsiang also predicted that in the next year or two fungicides effective against snow mold will be released by Zeneca (*Azoxystrobin*) and Rohm and Haas (*Myclobutanol*).

I hope this encourages readers to attend the first conference of the new millennium, in Ottawa, next year. Eh?

...

A dream from the fertile mind of Audubon International President Ron Dodson: A biodegradable golf ball implanted with a native seed, so that when a golfer loses it, out of that spot will spring, say, a saguaro cactus, or a pine tree.



Mark Leslie,
managing editor

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SPOTLIGHT ON ASIA • PUBLIC GOLF MAKING A DIFFERENCE

Seri Selangor swings toward teaching success

By ANDREW OVERBECK

SELANGOR, Malaysia — There was a time when the golf industry claimed that public golf would not work in Asia. Since August 1998, the Seri Selangor Public Golf Course outside of Kuala Lumpur has been working to prove the pundits wrong.

The playing public has so far embraced the public golf concept and Seri Selangor has met with success both on and off the course in its first several months of operation. The level of play has been strong and the junior development programs and the

golfers career college have been well attended.

From August to December 1998, Seri Selangor did 18,286 rounds of golf and was often operating at full capacity. "The queue and the turning away of golfers became the talk of the town," said general manager, A.S. Khamis. Additionally, the first session of the 'homeless' golfer program trained 150 golfers and beginners who were without a club and handicap. The program opens to new participants every two months.

Khamis' junior development

program at Seri Selangor has been extremely well attended. Khamis closes the course every Sunday from 3-7 p.m. and opens it to juniors between the ages of 6-20 who receive instruction from six professionally qualified in-



Youngsters warm up before a class at Seri Selangor Public Golf Course.

structors and players from the Malaysian National Team. At present there are 400 registered juniors and around 150 come each Sunday.

"We intend to continue this program as a contribution to the national golf industry. Who knows, we could get a Malaysian 'Tiger' out of the program," said Khamis.

Point/Counterpoint: \$1 million versus \$10 million golf courses

POINT • DR. MICHAEL HURDZAN:

Dana, I want you to listen to why it is important to build cost-effective golf courses. We need to build low-cost golf courses and these are the reasons why:

First, why do people play the game of golf? The reason they play is not necessarily because of celebrities, or tournaments, or magazines. The reasons have more to do with the spiritual refreshment, the ethereal surroundings, the intrinsic pleasure, mental relaxation and the elusive pursuit of a game.

To find the answer to that question, we need to look at a definition written by David R. Forgan:

"Golf is a science, the study of a lifetime, in which you may exhaust yourself but never your subject. It is a contest, a dual, or a melee calling for courage, skill, strategy and self-control. It is a test of temper, a trial of honor, a revealer of character. It affords the chance to play the man, and act the gentleman. It means going into God's out-of-doors, getting close to nature, fresh air, exercise, a sweeping away of mental cobwebs, genuine recreation of the tired tissues. It is a cure for care, an antidote to worry. It includes companionship with friends, social intercourse, opportunity for courtesy, kindness and generosity to an opponent. It promotes not only physical health but moral force."

The reason I bring that up is because it says the most important part of golf is the spirit of the game, the idea of being out with your friends and being able to play the game. And, although I grant you that the prettier the surroundings the more pleasurable the experience, it isn't absolutely necessary. The most important thing is being out with your friends and being able to enjoy the game.

Nowhere in this definition does it say anything about Stimpmeters, slope ratings, golf cars, top 100 courses, or Tiger Woods. It doesn't say golf must be played on fast greens, groomed fairways and roughs, or have manicured hazards. It doesn't even say golf must be played on green grass.

If we could arrange golf courses into a pyramid based on quality, at the very top

Continued on page 66



They share an office, but not opinions: Michael Hurdzan (far left), Dana Fry (far right). Looking on are PGA Tour Pro John Cook and his sister, Cathy.

COUNTERPOINT • DANA FRY:

If a \$1 million golf course is so great, how come all the slides you show are of \$5 million and \$10 million golf courses?

There is a golf course in South Africa, obviously built by locals, that fits all the criteria of a Mike Hurdzan golf course. Number one, it's cheap. It beats Mike's budget by several hundred thousand dollars. Number two, it has dry and fast playing conditions. Number three, and this is very important if you know Mike: There are no USGA greens. Number four, it is a buzz word for Mike: It is environmentally friendly.

Seriously, although I agree with what you are saying, I don't know if it is possible to build a course for \$1 million. Because of the constraints — either physically, by the land, or by outside agencies — often it is impossible to do that.

Often on the projects we work on, we spend \$1 million on earthwork, \$1 million on irrigation, \$1 million on sod, and perhaps another \$1 million on landscaping.

I've often heard you say that what makes golf special is the environment it's played in. Most people would rather play on lush, green, visually exciting golf courses instead of a military parade field. You said yourself, there is nothing special about a million-dollar golf course.

Golf course architecture is an art form. The more beautiful the golf course, the more spiritually refreshing it becomes, and people are willing to pay for that experience.

Sometimes golf courses can be placed on such great sites that a reasonable-cost golf course can be built there and you'll find it at the top of your pyramid. Sites such as Cypress Point, Shinnecock Hills, or the Sand Hills are examples.

However, in the absence of such great topography, soil conditions and wonderful off-site views, golf courses must be made beautiful through construction and maintenance. And that takes big bucks. Let me show you what I mean.

Continued on page 70

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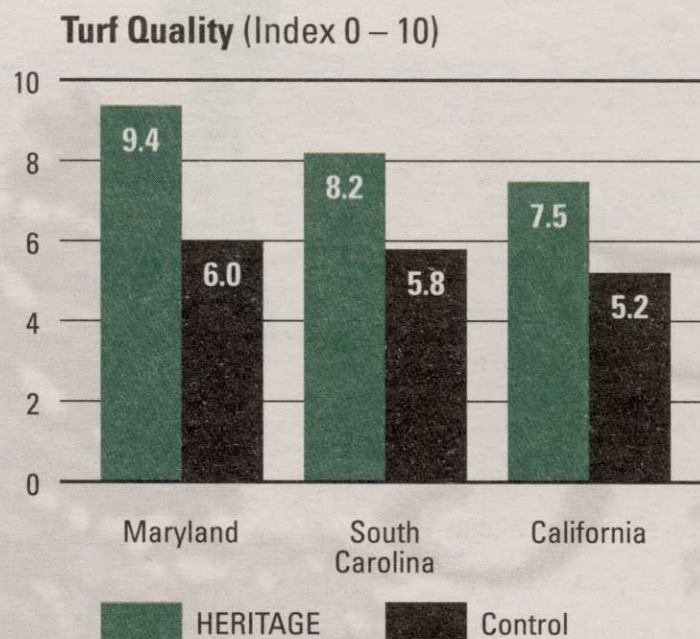
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Oh, Canada!

COVERAGE OF THE 50TH CANADIAN INTERNATIONAL TURFGRASS CONFERENCE & TRADE SHOW CONTINUES ON PAGES 20-25.

Super of the Year: Stay enthusiastic

By MARK LESLIE

BRAMPTON, Ontario, Canada — Ask Bob Heron about his accomplishments and he first points away from himself, to his many assistants who have gone on to take head superintendent jobs from North America to Loch Lomond, Scotland. Ask about his family and he embellishes about 29-year-old son Scott “whose resume is better than mine.” But ask colleagues of Canada’s 1998 Superintendent of the Year and they remark about a man who has greatly impacted this career field.

“Bob Heron has a good relationship with his members and he produces a pretty fine golf club,” Gordon Witteveen of The Board of Trade Country Club in Woodbridge said about the man who is now head superintendent at Beacon Hall Golf Club here. “He’s an upbeat guy and always has a positive personality, which makes him fun to be around.”

“R. Tee’s contributions to the game of golf locally, nationally and internationally have been many and continue to be ongoing,” said golfing pal Paul Dermott



Above is Beacon Hall Golf Club’s 2nd hole, which keeps Bob Heron, below, and his crew busy in Brampton, Ontario.

of Oakdale Golf & Country Club in Downsview, who nominated Heron on behalf of the Ontario Golf Course Superintendents Association. “He’s a good player and always turns out a playable and well-maintained course for his membership. He’s always been a real proponent of bentgrass, and he was one of the first ones up here to experiment with some chemicals to eradicate poa annua.”

Indeed, several innovations in golf course maintenance have been pio-

Continued on page 20



Bubble Cover wins converts in Quebec

By MARK LESLIE

TORONTO — Be it laser shooting, Global Positioning Satellite technology or soil sensors, some of the greatest advances in the world of golf have been borrowed from other industries. Enter the latest: Bubble Covers, originally designed to lay over swimming pools to keep them warm.

Quebec superintendents have been experimenting with Bubble Covers to protect their greens from winter injury, and, according to Serge Gauthier, they have found success while saving money.

Speaking at the Canadian International Turfgrass Conference here, the superintendent at Islesmere Golf and Country Club in Laval, Quebec, said his experience with Bubble Cover over the last three winters has been extraordinary in terms of effectiveness, ease of installation and removal, and cost compared to using straw.

Traditionally, Gauthier had protected his greens during winters by laying down a strong netting, spreading a layer of straw over that and then covering both with a greens cover.

Continued on page 25

BRIEFS



PTC AWARDS \$175,000 FOR RESEARCH

The Pennsylvania Turfgrass Council has announced allocation of funds to Penn State for the 1998-99 fiscal year. The \$175,000 research grant brings to almost \$2.5 million what the council has donated to Penn State over the years. The funds will support research projects in the departments of agronomy, entomology, and plant pathology. It will also support eight scholarships and awards granted to undergraduate and graduate students.

IGCSA ANNOUNCES NEW DIRECTORS

DES MOINES, Iowa — The following superintendents were elected to serve on the board of directors for the Iowa Golf Course Superintendents Association at the Iowa Turfgrass Conference here. President Dennis Watters, of the Fort Dodge Country Club in Fort Dodge, Iowa, will be assisted by new directors Ron Stephan, Joyce Hamilton, John Ausen and Tom Verrips.

Pooch sniffs out golf course’s elusive PVC

By PETER BLAIS

BRUTUS, Mich. — Think dogs are just good for chasing geese off golf courses? Well, Steve Sump, superintendent at Hidden River Golf & Casting Club here has a PVC-seeking missile of a Labrador Retriever that can find clogged drainage caps through the deepest, murkiest standing water allowing Sump to get the flooded parts of his course back in play in two shakes of a dog’s tail.

Buddy is an 18-month-old, 80-pound yellow lab who has lived in the Sump household since he was six weeks old. Buddy began accompanying Sump to work almost immediately, riding on the superintendent’s cart and quickly developing into a top-flight goose deterrent.

“I originally brought him out here to chase the geese,” Sump said. “We don’t have any geese now. We’ve got more turkeys than anything, and a few ducks. I got him to understand not to chase the turkeys or the ducks.”

Being a retriever, Buddy loved to pick things up and bring

Continued on page 27



Buddy and partner Steve Sump quite a team at Hidden River Golf & Casting Club.

Headhunters are the new niche in job placement

By TERRY BUCHEN

WILLIAMSBURG, Va. — While networking with fellow course officials and investigating local and national job-referral services have long been used to discover superintendents’ jobs, search firms, or “headhunters,” are gaining credence with clubs and general managers.

“We are sensing there is a growing need for using search firms such as ours in the recruiting of superintendents and

directors of golf maintenance operations,” said Richard Farrell, a partner with Golf Search Personnel in Clemont, Fla. “We found we can be a neutral source for private clubs, ensuring no favoritism is involved as there can be in club politics. Also, using a search firm brings the confidentiality that needs to be involved in a search.”

Headhunters follow a similar format, though each has their own unique style.

Dick Kopplin of Kopplin Search, Inc. in LaQuinta, Calif., has been in the golf business for 28 years, many of those as a well-connected club general manager.

“We provide a specialty service to clubs where the general manager or president will contact me to help them find a qualified superintendent,” Kopplin said. “After sending them a packet of information about my company, with references, I

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Heron: Innovator, teacher

Continued from page 19

neered by the 56-year-old Heron, a Guelph native, 1964 graduate of Penn State University and 1979 president of the Canadian Golf Superintendents Association.

- Heron performed "some of the early work" with Roundup on eradicating annual bluegrass in fairways.

- In 1981 he was ahead of his time in experimenting with winter covers.

- His club in 1989 was "the forerunner in leasing golf course equipment," although he takes no credit since it was in the program when he arrived.

- Last year he undertook his latest experiment, incorporating Georgia pine straw into the Beacon Hall property — a move he feels will reduce maintenance costs over the long term.

Winter covers, Heron reported, "are not a panacea for growing turf. But if everything else is equal and your management program is adequate, they will prevent some problems. I personally prefer perforated versus solid covers.

"Whether the green is in shade or the open makes a big difference to how fast frost comes out of the ground and how fast the turf greens up. But the real trick is when you take them off."

Leasing equipment, he said, has become "a good way to stay current. And it keeps your maintenance costs down because you're not repairing old equipment all the time."

Heron replaces his equipment every four years, or has an option of re-leasing it, or buying it from the lease company and selling it to other golf courses.

"Once the lease is established, we have the freedom of negotiating new equipment deals without having to go to the board of directors or general manager all the time for approvals," he said. "Once we select equipment, we like to shop around and get the best deal from a lease company."

In Beacon Hall's case, it was a new golf course with a very limited membership, "so there wasn't the capital to buy \$500,000 to \$700,000 in new equipment," Heron said.

The Georgia pine straw is another story — Heron's dream child after a number of visits to the Carolinas, Georgia and Florida.

"We brought in three loads last year just to spread around in our pine tree areas," he said. "The reason was, our red pine trees don't produce the same quantity as the loblolly pines down there. So, to enhance the walk, improve the aesthetics and playability, we have spread it in the woods. It makes it easier to find your ball. Maintenance costs are reduced because you don't

have to trim grass around trees. And it improves the health of the trees because of less competition."

Though the initial cost was high in Canadian dollars, Heron said he thinks it will save money over the long term, even with a minimal replacement cost each year.

In the midst of this innovation, Heron's crews began an

overseeding program last summer to convert the PennLinks bentgrass greens to G6.

"The new G varieties allow you to start off the season with a little tighter height of cut," he said. "I believe it's best suited to our climatic conditions. We think it will give us a much tighter turf and allow us to get down tighter earlier in the season. That's important with our short season, especially at a good golf course

because people like the ball to roll at 10 every day."

Heron expects to oversee two or three times a year for the next three years to accomplish his goal.

Increasingly, he said, business rather than cultural practices command most of his time.

"When I was in school it [the job] was the science, the art and the business," Heron said. "The business was probably 20 percent, the art, 50 percent, and the

science, 30 percent. I think now it's turned around to the point where business — people management — has become 50 percent of our job; and science and art are maybe 25 percent each.

"It has become a big business, and we have to be fiscally responsible because we're dealing with a lot of money at private golf clubs. That separates the good superintendents from the

Continued on next page

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Bob Heron

Continued from previous page

not-so-good superintendents.”

Another key ingredient setting superintendents apart is enthusiasm, Heron said.

“The ones who have done the best are those who have had the enthusiasm. If you don’t have the enthusiasm in this business, you don’t have a chance,” he said.

“A lot of us will make a com-

fortable living looking after golf courses, but never will be millionaires. It’s a labor of love, really. I look forward to it every day, even in the wintertime. That becomes more difficult as you get older, but if you can do it...”

Heron has tried to instill that enthusiasm in his assistants and employees as well.

“Enthusiasm and motivation are two very important words in my vocabulary,” he said. “We’re

‘Enthusiasm and motivation are two very important words in my vocabulary,’ he said. ‘We’re only as good as our worst employee. Motivating and dealing with the various types of employees is crucial.’

only as good as our worst employee. Motivating and dealing with the various types of employees is crucial. Turf students, who have an interest in the business, make it easier. But it’s im-

portant to keep the high school students, or retired people enthused, motivated and focused about what we are trying to do.

“Positive reinforcement is good. We try to catch them doing some-

thing right and make sure they’re aware of it. In the golf business we’re not blessed with being able to pay what other industries do. So it’s important to make it enjoyable and also have them understand what is expected.”

The assistant superintendents Heron is known for grooming are special to him.

“I’ve given them as much responsibility as I could, whether delegating on a day-to-day basis, budgeting, overall planning, or purchasing equipment,” he said. “In other words, keep them informed about everything required to do the job.”

He suggests that young people aspiring to work in the field enter a university turfgrass program and “be prepared to put in their innings — spend a lot of time working on a golf course. It is becoming more difficult because we have done a good job of providing a good environment for a lot of those types of people.

“And it’s no secret that the market at the moment is saturated with good quality young people. The good ones, the cream, will still come to the top, but it’s becoming more difficult to get a job, even withstanding the fact that more courses are opening. Some want to run before they walk, but it does take a long time to learn all there is to learn about the business.”

Will it pay off for them? For Heron, who started working on a course at the age of 15, it did.

“I don’t think there is anything I would prefer to do than look after a golf course,” he said.

In fact, he laughed, sometimes wife Carolyn, a certified financial planner, says that “if she were to do it all over again she would like to be a superintendent.”

Though daughter Cory Whiting is studying for a master’s degree at the University of Guelph, son Scott has taken after his father — in a big way. A Penn State alumnus like his father, he has worked at Pebble Beach Golf Links in California, Devil’s Pulpit in Caledonia, East Sussex National in England and Capilano Golf and Country Club in Vancouver. He just got his first head superintendent position, building a Doug Carrick-designed course on Bigwin Island in Huntsville.

For father, son and all superintendents, Heron said, the job is a challenge.

“It’s a real challenge dealing with adversity,” he said. “It’s a challenge sometimes dealing with members and their idiosyncrasies. Being a bit of a competitor is important, too, because you’re always competing within yourself and other golf courses.

“I think it’s important to be competitive in this game. There’s not a golf course anywhere, in my opinion, that could not be made better. I think you have to have that philosophy.”

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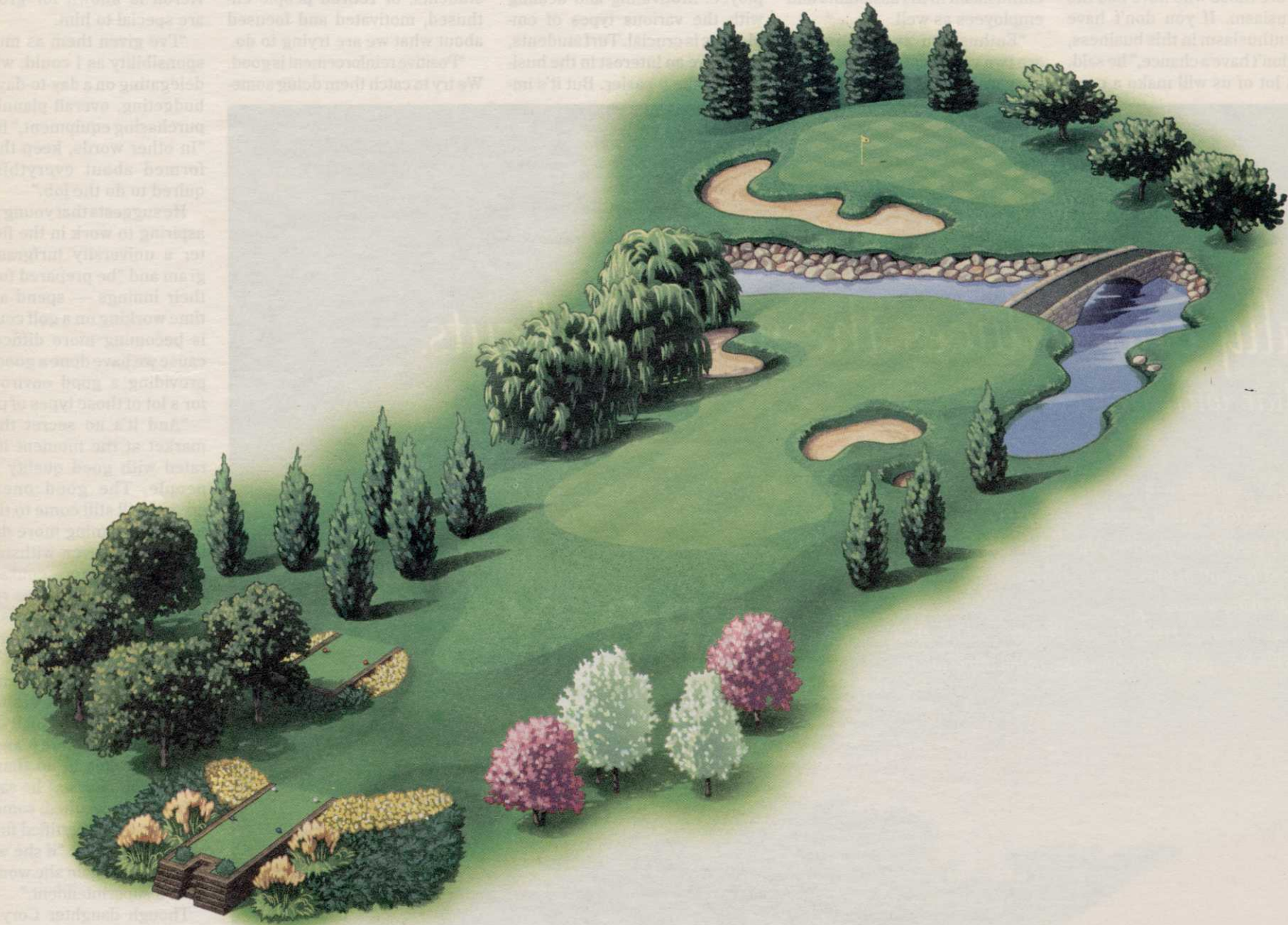
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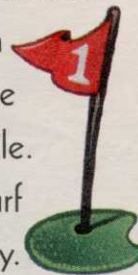
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Rossi redefines some beliefs about *poa annua*'s winter hardiness

By MARK LESLIE

TORONTO — One of annual bluegrass's dominant characteristics, its extraordinary photosynthesis rate, is more crucial than are external influences to its struggle against winter injury, according to Dr. Frank Rossi.

Speaking at the Canadian International Turfgrass Conference here, the Cornell University scientist said the cause of winter injury to annual bluegrass, or *poa annua*, "is rarely ice, and it's rarely many of the things we worry about. More often, it's that the plant is growing quickly in the spring."

Too quickly, that is, when fluctuations in temperatures cause *poa annua* to break out of dormancy with a spurt of new growth, only to be hit by a sudden freeze that kills the plant.

Explaining that "our thinking has changed quite a bit about this topic [winter hardiness of *poa annua*]," Rossi said it is a complex issue simply because *poa annua* is "a true winter annual; it germinates in the fall; it prefers to over-summer as a seed; and it prefers to go dormant in the summer when people are playing golf."

Rossi told superintendents that winter injury is "a complex of actions" and "rarely is it caused by a single thing, which makes it difficult for a researcher to study and for you to control."

Factors that can contribute to winter injury are poor drainage, excessive late-fall nitrogen applications, excessive late-fall irrigation, lack of thatch control, close cutting height, and inadequate potassium levels, although there are no tests showing more potassium enhances *poa annua*'s winter hardiness.

But because of the impact of quick growth, Cornell researchers have centered their efforts on delaying *poa annua*'s breaking from dormancy; and increasing the storehouse of carbohydrates, or energy, in the plant so that when a freeze occurs the plant can better survive it.

"Research indicates a relationship between disease incidence and energy levels," Rossi said. "We wondered if there was a way we could get the energy levels in the cell enhanced so that the cell doesn't dehydrate?"

Also, some research indicates that plant growth regulators (PGRs) increase energy levels in plants because carbohydrates are stored rather than used for growth.

"One of the things we learned," Rossi said, "is that PGRs aren't far from herbicides and you can cause damage with them."

But, on the positive side, using an extremely low rate of

the PGR Primo (*Trinexapac*), researchers were able to accumulate carbohydrates much above that in a normal plant, he said.

He cited the Canadian Prairie Turfgrass Research Center's finding that just a 24- or 48-hour warming period substantially reduces winter hardiness of *poa*

annua, taking 8 to 10 degrees Centigrade off its normal hardiness levels. "That's a significant finding because it is an indication of how quickly annual bluegrass breaks its dormancy," he said.

"We've had some dramatic results with Primo," he added. "When we had five days of freez-

ing, thawing, freezing, thawing, we substantially enhanced annual bluegrass survival."

For Canadians, who cannot buy Primo, Rossi said: "Even though you might not be able to use Primo, your focus should be on maximizing hardiness going into the winter: applying late-fall fertilizers, raising the mowing heights, mini-

mizing traffic and other actions that injure the plants late in the season."

"Things that might compromise those energy levels are going to impact the plant's ability to survive the winter," he said.



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Honorees cite challenge

TORONTO — Saying "it's been a great run," Canadian 1998 Superintendent of the Year Bob Heron told an audience here, "I still look forward to each day."

Speaking at the 50th Canadian International Turfgrass Conference & Trade Show, Heron said "there's still plenty of challenge" at Beacon Hall Golf Club, where he has

been superintendent since it opened in 1989.

He credited several people in his past, especially Penn State University professor Dr. Joe Duich and Jim Wyllie, whom Heron started working with in 1968.

Meanwhile, receiving the John B. Steele Award during the annual banquet of the Canadian Golf Superintendents Association (CGSA), Gordon Witteveen recalled his good friend Steele as a man who enjoyed life to its fullest. Steele and Witteveen were instrumental in founding the CGSA, and Witteveen said Steele would be "very happy and very proud" of Witteveen's selection for the award.

Eyeing retirement, Witteveen recalls '40 years of mistakes'

By MARK LESLIE

TORONTO — Toronto Board of Trade golf course superintendent Gordon Witteveen may be retiring Sept. 1, but he took the opportunity at the Canadian International Turfgrass Conference here to look back on his career with a frolicking talk called "Forty Years of Mistakes."

Good-naturedly poking fun at himself, Witteveen told his audience: "I hope you can learn from my mistakes because I did not. I did not learn from my mistakes. One thing I did learn is that no matter how bad the mistake, the passing of time would soften the blow. A month, a year later, I would find myself laughing at it, and what once had been a serious matter [would bring] an amount of glee."

Golfers at his 36-hole facility, he said, "have become less tolerant of my mistakes with the passing of time. Earlier in my career, I could get away with almost anything. Now there are many watching over my shoulder like vultures, ready to pounce when I do something wrong. I suppose it may have something to do with the fact that I keep a rather high profile, and when you do that, there is always someone waiting to knock you off your pedestal."

Enumerating his mistakes, Witteveen mentioned:

- The 12th green which he rebuilt while working at Highlands Golf Club in London, Ontario. "I built it with a back-to-front slope that made it quite easy to putt into the front bunker."
- The green he rebuilt which was used for the first time one Saturday. ("The greens committee held an emergency meeting that night. That new green was an eyesore on the golf course for many years.")
- The tee box he built with a retaining wall. ("Golfers were petrified about falling off it.")
- The new irrigation system he built using his own crew. ("That was a mistake. There was no one to blame and no one to sue.")

After years of these experiences, Witteveen said, "I looked to get actively busy, so I'd make fewer mistakes. That's when the Board of Trade job came along."

Witteveen related some suggestions for what superintendents should do. First among them was to take many pictures of their work at their courses.

"Sometimes we don't lose our jobs for agronomic reasons," he said. "It's because we do not smile."

"Do not make the same mistake more than three times," Witteveen said. "And when it is unavoidable, even admit to your mistake."

After his retirement party on July 26 and actual retirement on Sept. 1, Witteveen will remain busy. The co-author of the popular new book "Practical Golf Course Maintenance — The Magic of Greenkeeping," he has been asked by the CGSA to write a history of greenkeeping in Canada.

He and Michael Bavier, a friend and co-author of the greenkeeping book, plan to continue their global travels giving their Magic of Greenkeeping seminars from which the book was drawn.

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Bubble Covers bring extraordinary results

Continued from page 19

"This was effective in most cases, but was time-consuming, and removal was also very time-consuming," he said. "But the main problem is, it's a living material... Also, in a mild winter, the greens did not come out so well."

Gauthier and his colleagues in the Northern regions considered that a perfect method of winter greens protection would include:

- control of water;
- isolation, such as an inorganic temperature buffer;
- ease of installation.

When a Bubble Cover salesman knocked on his door in late 1995, Gauthier jumped on the idea. "I knew it would be perfect," he recalled.

The product is sold from 4- to 28-foot widths, and Gauthier spent \$26,400 at 11 cents per square foot. He figures the Bubble Covers, which should be usable for at least six years, will save \$5,336 or more per year.

Using straw cost \$7,000 per year for the straw and \$4,560 in labor and disposal costs. The Bubble Cover costs only \$1,824 in labor, and the \$26,400 spread over six years equals \$4,400.

Gauthier spelled out the process of covering his greens with the bubble material, which is so strong the bubbles do not pop even when jumped upon.

First, the plastic netting is laid over the green. Mouse repellent is sprayed over the green. The Bubble Cover is spread out over the netting and is clamped down with long, fluorescent-pink staples so they can be easily found come spring. All this is held down by a permeable greens cover.

"This top cover," he said, "is very important and we have to pull it all the way back from the green. If not clamped down well, wind will tear it out."

In his experiments Gauthier placed household heat monitors inside the greens, with a sensor near the middle of the green and the monitor in a Ziploc bag at the edge of the green.



Crew member Daniel Fassina nails down the cover over one of the greens at Islesmere Golf & Country Club.

'The method is not perfect. Sometimes water infiltrates under the cover. But we are fine-tuning it. We are pulling the top cover even more taut. And some results are incredible.'

— Serge Gauthier

The temperature never dipped below 5 or 6 degrees Celsius (32 to 34 Fahrenheit), which *poa annua* can survive, he said.

A bonus of the Bubble Covers is that they are fairly translucent which helps kick-start the grass in the spring when the top cover is removed.

Since each cover is tailor-fit to a specific green, it is labeled for use the next year.

"The method is not perfect. Sometimes water infiltrates under the cover," Gauthier said. "But we are fine-tuning it. We are pulling the top cover even more taut. And some results are incredible."



Tough plastic netting, left, is the first layer placed on the green before winter strikes. It allows the turf to breathe and also serves to easily pick up whatever is on top of it. On top of the netting, crews lay down the translucent Bubble Cover, right, which insulates in the winter time and allows radiant heat when spring arrives. Both the netting and Bubble Cover are anchored down by a permeable cover.



BIGGA chairman calls on supers to 'uphold golf's heritage'

By MARK LESLIE

TORONTO — Golf course superintendents have a duty to the game and must uphold its heritage, something that maintaining "unnatural conditions" does not accomplish this, according to Gordon Child.

Child, a retired superintendent and chairman of British & International Golf Greenkeepers Association (BIGGA), said golf course caretakers should agree to certain basic principles of maintenance.

"One thing that does irritate me greatly is golfers telling us how we should achieve what they want," Child told his colleagues in a session at the 50th Canadian International Turfgrass Conference & Trade Show held here in March.

Saying that his "basic principles" are based on golf's traditions and not necessarily for every superintendent, who may face environmental conditions that require other maintenance measures, Child spelled them out.

"First, we don't realize how little fertilizer grass needs," he said. "I believe we only need to use limited phosphates. In the UK [United Kingdom], some of the best

golf courses you see are on very low phosphate readings and some of the worst are on high-phosphate readings...

"The Old Course at St. Andrews uses very little phosphate, yet the course stands up to a lot of play."

St. Andrews, he said, also "encourages the fine grasses to dominate, and they do."

Child added that applying nitrogen more is far less expensive than phosphate and is more consistent and reliable.

Another element Child cites is "free drainage."

"Irrigation is far too readily used," he said, even though grass will not live without it.

He suggested that superintendents keep their courses dry, "but never ever to the point of burning the turf itself."

Referring to the many schools of thought about top dressing, Child said, "We should think of top dressing in relation to the root zone."

Saying that a "pure sand green" builds up humus and therefore is not pure sand for long, he said that changes the way of dealing with the question of top dressing.

"I think we should add some sort of humus into the root zone," he said.

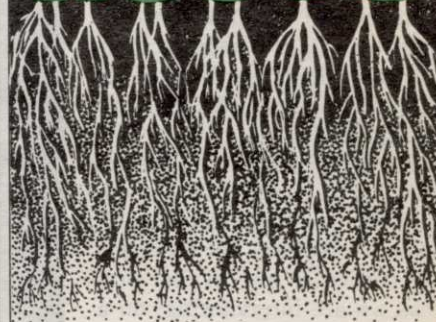


"This is really taking off in Quebec," said Fern Maille of Charm Services Inc. in Bellefeuille, Quebec, who sells Bubble Cover. Although Bubble Cover is being shipped across North America for swimming pools, it is sold only in the Province of Quebec for golf courses, he said. "I believe this year we will be selling it in Nova Scotia and New Brunswick, and looking for distributors in the U.S."

"It's just a question of having enough testimony to convince the guys to at least use it on one or two greens."

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Headhunters

Continued from page 19

will meet in person with the search committee and mutually draw up a position description."

Kopplin feels there are three critical factors for finding the right superintendent: competence, integrity and compatibility.

"We advertise the position whereas the best candidates usually have a position with a similar type environment at an existing club," he said. "I talk with and recruit all of the candidates, perform reference and due-diligence checks, clarify everything and bring in three good, quality candidates. I telephone interview each candidate and meet with them in person, at their respective clubs, before they become eligible as one of the three final candidates."

"One of the key qualities," said Farrell, "is someone who is hands-on already; who has a very good, detailed knowledge of the industry; and who, from the technical aspect, is computer literate. Our clients are looking for people with successful business backgrounds."

The headhunter's job, Farrell said, "is to identify for our clients the most qualified candidates we feel are out there for the particular job. In that process we are interviewing, on a preliminary basis, all candidates. Before our client sees them, we will have interviewed them, toured their golf facilities and thoroughly checked their references."

Jerry Faubel, a partner with Bruce Williams in the firm Executive Golf Search, Inc., said: "We go to each club and interview them to find their needs for a superintendent, make suggestions as to the type of superintendent they want and need, look at the golf course and then begin a search in our large database with the club's job specifications in mind."

Faubel and Williams, both former presidents of the Golf Course Superintendents Association of America, then perform in-depth interviews and personality tests for each club's specific needs, narrow down the candidates to between three and five, perform a background check with the superintendents' permission and then send the club the resumes and Faubel's and Williams' assessments.

Once candidates are presented to the search committee, according to Kopplin the panel usually interviews them, allowing them to showcase their talents in a relaxed atmosphere.

"We ask each candidate to go step by step through each job they have had," Kopplin said, "to discuss their management abilities. Then the committee asks questions; the candidate asks

questions, all in a one-hour time limit and then the candidate receives a complete tour of the facility," Kopplin said. "We do not do any personality or psychological testing unless a club specifically asks for it, then we use professional companies that specialize in it."

"The quality of the superintendent candidates that I deal with is so good, and their work ethic is very strong," Kopplin said.

'One of the key qualities is someone who is hands-on already; who has a very good, detailed knowledge of the industry; and who, from the technical aspect, is computer literate.'

— Richard Farrell

Executive Golf Search, Faubel said, recommends candidates who

can grow grass, have communication skills and a personality that best fits a particular club.

Faubel and Williams do not get involved in the salary, fringe benefits (unless asked) and negotiations, but will offer sample contracts if desirable, he added.

All these search firms have golf backgrounds—from Faubel and Williams' years as certified golf course superintendents who are close to a variety of industry

leaders, to Golf Search Personnel, whose three partners have many years background in finance and recruiting (Steven Lieberman), agronomy (Mark Miller, who worked with IMG and Arnold Palmer Golf Management), and course management (Farrell).

Their payments vary.

Kopplin Search clients—about 80 percent of whom are equity

Continued on next page

PREVENT
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OR MAKE SURE
IT'S NOT EVEN
AN ISSUE.

Sod producers donate \$62,000 for research projects

ROLLING MEADOWS, Ill. — Eight turfgrass sod research projects will receive a record-setting \$62,436 in grant money for 1998-99 from the 5-year-old International Turf Producers Foundation (ITPF). The not-for-profit foundation's previous one-year grant award record was \$20,500, set in 1995-96.

Specific grant recipients cannot be announced, pending formalization of each project's goals and objectives. However,

general areas of study to be undertaken include extension of sod's post-harvest "shelf-life," shaded turf management and various projects related to water and nutrient management. ITPF is now in the process of notifying the recipients.

This year's eight recipients were selected by ITPF's Research Committee from among 20 projects, seeking a total of over \$220,000. ITPF, created as a stand-alone foundation

in 1994 by Turfgrass Producers International, has established a long-range endowment goal of \$2 million which it is beginning to accumulate through contributions from annual campaigns and a silent auction conducted in conjunction with TPI's summer convention. Each year, a portion of the newly raised funds and direct support from TPI is used to support research projects directed at questions of specific interest to turfgrass sod producers.

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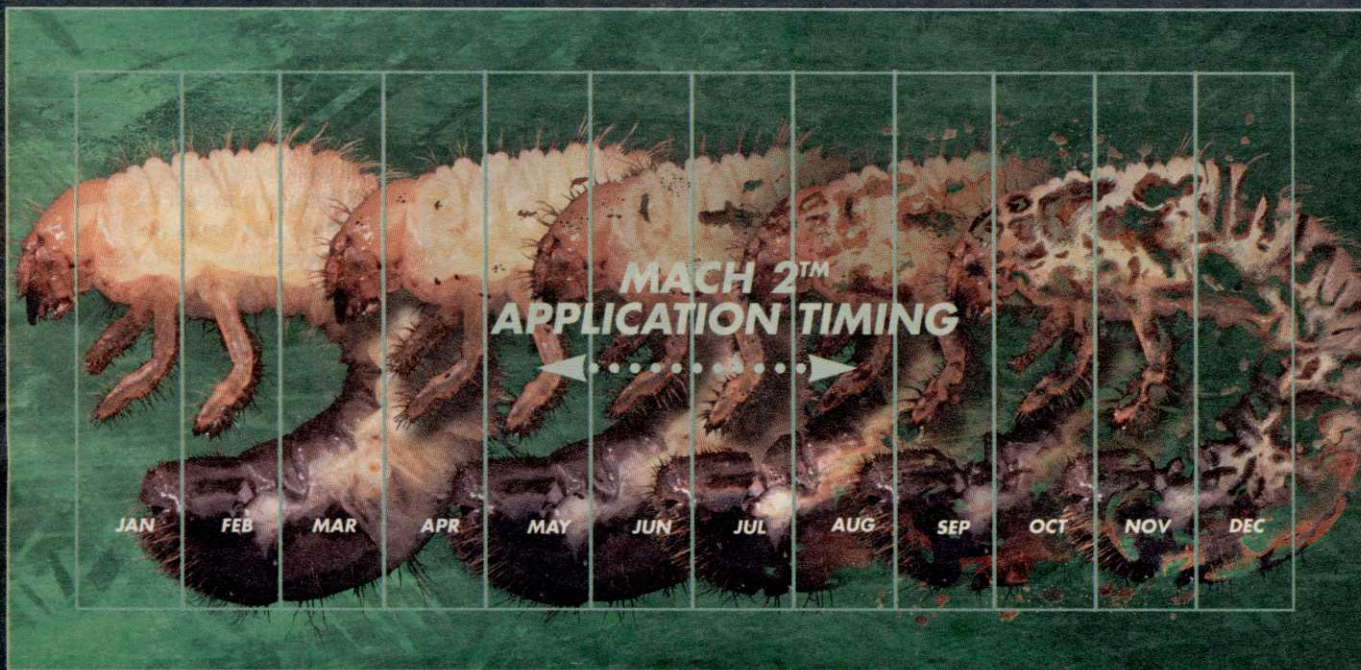
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CIRCLE #107

Headhunters

Continued from previous page
private clubs and 20 percent are management companies, resorts and other public-access venues — pay a fee, usually 15 to 25 percent of the superintendent's first-year base salary.

"We have contact for one year after the successful candidate is hired, to offer complete and total service," Faubel said. "Our fees are on a percentage sliding scale of between \$5,000 and \$12,000, based on the superintendent's first-year salary."

Kopplin uses a database of more than 3,000 resumes. Twelve to 24 resumes come into his office daily. The last three years, 25 percent of its business has come from superintendents, 25 percent from golf professionals and 50 percent from general managers.

"We are in business to help superintendents, to strengthen their professional careers," Faubel said, "and we do headhunting only for superintendents. Seventy-five percent of our business is with private clubs and 25 percent with public-access courses, and we place from six to 12 superintendents each year."

OTF donates \$197,000, elects directors

COLUMBUS, Ohio — The Ohio Turfgrass Foundation (OTF) has donated \$197,000 to turfgrass research and education, and elected three trustees to its board of directors.

The \$197,000 went to OTF's 10-member Technical Advisory Committee of researchers from Ohio State University and \$20,000 for scholarships presented to students of Ohio's turfgrass programs.

Glen Pottenger, elected to his first term on the board, is a certified golf course superintendent at Sugar Valley Country Club in Bellbrook. A 1974 graduate of Agricultural Technical Institute (ATI), Pottenger has been a superintendent for 28 years.

Re-elected to the board of directors were Hank Chafin and Dr. Chuck Darrah. Hank Chafin has been a board member since

1986, and is its past president. He has been golf course superintendent at Community Golf Course, Madden Golf Course and Kittyhawk Golf Course in Dayton.

Darrah has been actively involved in the turfgrass industry since 1969. While an assistant professor of agronomy and Extension turf specialist at the University of Maryland, he served as executive secretary for the Maryland Turfgrass Association. He owns CLC LABS, which specializes in providing laboratory and consulting services to the green industry.

PVC pooch

Continued from page 19

them to Sump. One of the items Buddy would frequently carry back was an extra 4-inch, green drainage cap that fit over a drain tile. The cap quickly became one of his favorite toys.

Following a particularly heavy rain last June, parts of the Hidden River course flooded when the drainage caps scattered around the course clogged with debris and clippings. Sump removed his shoes, rolled up his pant legs and started poking around through the water and clippings trying to find the caps. Meanwhile, Buddy splashed in the dark green liquid.

"For some reason I said 'Bud find your *drain*,' the name we'd given his cap toy," Sump said. "All of a sudden he starts looking around, paws under the water and pops out one of the drain caps."

"I thought maybe it was a fluke, that he'd just happened to step on it. So we went to another area and I said 'Hey Bud, go find a drain.' He starts sniffing around and sniffing around, paws under the water again, lifts out another drain cap and the water starts draining down the hole. He must have found 10 caps that day."

Sump knew there were other caps he'd been unable to find that had grown over with grass. "I'd take him out in dry conditions and say 'Find a cap.' He'd begin sniffing and then go from cap to cap to cap, pulling them out, something it would have taken me hours to do. On other courses, I'd sent guys out for hours at a time with a pitch fork and shovel looking for those things. Now I have a dog that can go out and find them."

To keep his PVC senses honed, Sump occasionally sends Buddy off in search of a cap, whether he needs to find one or not.

"Last week [late February] we got 15 inches of snow," Sump said. "I went out on my snowshoes and I started wondering if Buddy could find a cap through the snow. Sure enough, in 30 seconds he had his head down in a snow bank and out pops a drainage cap... If he sees one sometimes he'll go and pop it out on his own. That's the only down side. He'll bring it to you and sit there, waiting for his treat."

Last fall while blowing out his irrigation lines, Buddy helped find numerous lost quick couplers, locating the brass sprinkler heads by the scent of their small, PVC tops.

"Basically we trained Buddy by just playing with him when he was a puppy here in the shop," Sump said. "He'd be bored, I'd hide his drainage cap somewhere here in the shop and give him his treat when he located it and brought it back to me."

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Preserving our natural heritage

By JEAN MACKAY

Where on Earth are plants most at risk of endangerment?

If you guessed the rain forests of South America or Asia, or the broad savannas and forested lands of Africa, or plants of Eastern Europe's blighted landscape, you'd be wrong. In fact, the United States is ranked first in the world, by far, among nations in total number of plants at risk.

According to the first comprehensive worldwide assessment of plant endangerment, conducted by the World Conservation Union, 4,669 species are judged to be threatened in the United States. That's 29 percent of the country's 16,108 plants species.

Scientists generally cite two main reasons why plants become endangered:

- destruction of large swatches of wild countryside by agriculture, logging, or
- development, and invasions of plants from one part of the world that run riot and crowd out native species in another part.

The World Conservation Union's findings, released last spring, required more than 20 years of work by botanists and conservationists around the world. The report's results raise many questions and have profound implications. Since plants form the basis of the food chain and are the primary producers of food for wildlife, what secondary impacts result from the loss of plant species? What mutually beneficial relationships are lost when

Continued on page 30

Jean Mackay is education director for Audubon International, headquartered in Selkirk, N.Y.



Superintendent Darren Moore has plenty of help from schoolchildren planting trees at Manila Southwoods.

Manila Southwoods works toward certification

By ANDREW OVERBECK

CARMONA, CAVITE, The Philippines — Under the leadership of golf course superintendent Darren Moore, Manila Southwoods Golf and Country Club is marching towards becoming the first golf course in the Asia/Pacific region to achieve recognition as a Certified Audubon Cooperative Sanctuary.

Manila Southwoods, a 36-hole, Jack Nicklaus-designed course, was developed and is owned by Philippine real-estate giant Fil-Estate. Moore has worked with the Fil-Estate environmental affairs division in order to achieve certification in environmental planning, wildlife and habitat management and water conservation.

Having already developed programs to address the remaining certification requirements, Southwoods is well on its way to full certification. "We are in the home straight now," said Moore. "We

I expect the Integrated Pest Management certification to be interesting. On one hand, they don't use a lot of herbicides because they have workers that pick out the weeds, but on the other hand they have workers who eat endangered species.

— Audubon biologist Joellen Zeh

aim to have all of the components completed before we host the Philippine Open on May 27."

Moore has been hard at work to make sure that happens.

In preparation for the outreach and education certification, Moore has been holding monthly "eco-field trips" for local school children. During the field trips, youngsters learn about wildlife

Continued on page 31

2nd Birdwatching Open scheduled

Birdies will be the order of the day on May 8 when Audubon International sponsors a special birdwatching competition on golf courses.

The second annual North American Golf Course Birdwatching Open presents an ecological twist to golf's traditional U.S. Open tournament. The event will take place on Certified Audubon Cooperative Sanctuaries and Audubon Signature Sanctuaries on Saturday, May 8, to coincide with International Migratory Bird Day. Birdwatching teams will record bird species during a 24-hour period to record data on migratory birds on golf courses.

The North American Golf Course Birdwatching Open is a light-hearted competition to raise awareness about the importance of golf courses for birds, especially migratory species that breed in North America and spend the winter in Central and South America. Many of these species stop at golf courses to rest and "re-fuel" during their long-distance flights, but others stay to breed and raise their young in a variety of non-play habitats, such as woods, prairie, or wetlands on golf course properties.

Last year's North American Birdwatching Open gathered valuable data about the great diversity of birds on golf courses that are managed with wildlife and the environment in mind. Thirty-six certified Audubon courses competed for the greatest number and diversity of bird species and when the results were tallied, we recorded a total of 273 species on golf courses. This included many common species and a few unusual sightings

Continued on page 30

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CIRCLE #157

Preserving our heritage

Continued from page 29

plant populations decline or become extinct? How few are too few — at what point have we simply lost too many individuals for a species to recover? What are the long-term impacts of plant endangerment on people, wildlife and natural systems in general?

Protecting native plants is directly dependent upon preserving and managing native habitats throughout North America.

For golf course superintendents, owners and developers, making a commitment to preserve, nurture and showcase native plants in the landscape is a significant step toward hold-

ing the line on increased loss of our native flora.

But landscaping with native plants has economic as well as environmental benefits. Reduced water, fertilizer and pesticide use are among the most tangible results. Decreased equipment wear and tear and labor savings can also be sig-

nificant when highly maintained areas are replaced with more natural habitat and native plants.

Native plants can be used in almost any landscape design to highlight the uniqueness and natural beauty of the property.

By making a commitment to good environmental stewardship, we can all play a part in preserving our diverse and beautiful natural heritage.

Pine Valley fully certified

PINE VALLEY, N.J. — Pine Valley Golf Club has achieved designation as a certified audubon cooperative sanctuary by the Audubon Cooperative Sanctuary System (ACSS), the educational division of Audubon International, endorsed by the United States Golf Association. Pine Valley Golf Club is the 7th

in New Jersey and the 167th course in the world to receive the honor.

"We are very excited about our certification status," said head superintendent Richard Christian. "This past year we have devoted many hours towards becoming certified. The entire

Continued on next page

Birdwatching Open planned

Continued from page 29

including a common murre, a great grey owl, and an American avocet. During 1998's event, 10 courses spotted osprey, eight saw loggerhead shrike, 12 saw eastern meadowlarks, and four counted bald eagles.

Though the information gathered highlights the type of species occurring repeatedly on golf courses across the continent, it also indicates the potential value of golf course for bird conservation. While scientifically credible inferences are difficult to draw from such a one-day birdwatching event, the data clearly show that courses that are actively managed to provide quality wildlife habitat do in fact achieve that goal. It also stands to reason that a greater number of golf courses participating in conservation activities would have a significant positive impact on wildlife and the environment.

In addition to data collection, an added plume of the North American Birdwatching Open is that it fosters communication between golf courses and local naturalist and environmental groups. Community outreach through the event is not only non-threatening, it's fun and educational. Bird watchers are constantly on the lookout for new places to explore, and the local golf course usually isn't on their list of birding hot spots.

The North American Birdwatching Open is an invitation for birdwatchers to see just how valuable golf courses can be for birds, and subsequently, to spread the good news to others in the environmental community.

The results of the 1999 North American Birdwatching Open will be available from Audubon International in late June.



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First certified Philippine course

Continued from page 29
and habitat enhancement, water recycling and conservation, solid waste management and other environmentally friendly practices on the golf course. They also participate in planting trees and building bird houses for the 50 species of bird life that have been identi-

fied on the golf course property.

Moore has also been very successful in generating interest among Southwoods' members and getting them involved in the certification process.

"The club has really matured over the last few years and members have been very

supportive in creating wildlife habitats within the premises as urban and commercial development increases in the area," said Moore.

Not only have members been strong participants in the adopt-a-tree program, they have also helped to identify new species of bird life by filling out bird record cards that are placed strategically around the course.

With this help and support,

Moore has identified more than 150 diverse plant species ranging from native grasses to indigenous fruit and hardwood trees.

So far, Joellen Zeh, staff ecologist for the New York-based Audubon Cooperative Sanctuary System, has been very impressed with Fil-Estate's and Moore's efforts and innovations. "Not only have they gone further than any other golf club in Asia, their

presentations for each category have been immaculately prepared," said Zeh.

However, Zeh has come to expect some surprises in the certification process for Southwoods. "I expect the Integrated Pest Management certification to be interesting," said Zeh.

"On one hand, they don't use a lot of herbicides because they have workers that pick out the weeds, but on the other hand they have workers who eat endangered species."

Cultural differences aside, Zeh was particularly pleased with Moore's work on the water conservation certification.

Noting the trash and debris that was entering the Southwoods property through public waterways, Moore and the Fil-Estate environmental affairs division worked with residents in the community and educated them about solid waste disposal and then helped them set up a trash removal system.

"This demonstrates that a golf course can be very beneficial to local communities," said Zeh. "In developing countries like the Philippines that is more true, because golf courses have resources that the community doesn't have."

Moore and Fil-Estate's environmental affairs division couldn't agree more and they continue to strive towards full certification and proving that well-managed golf courses can provide substantial benefits to the environment and the community.

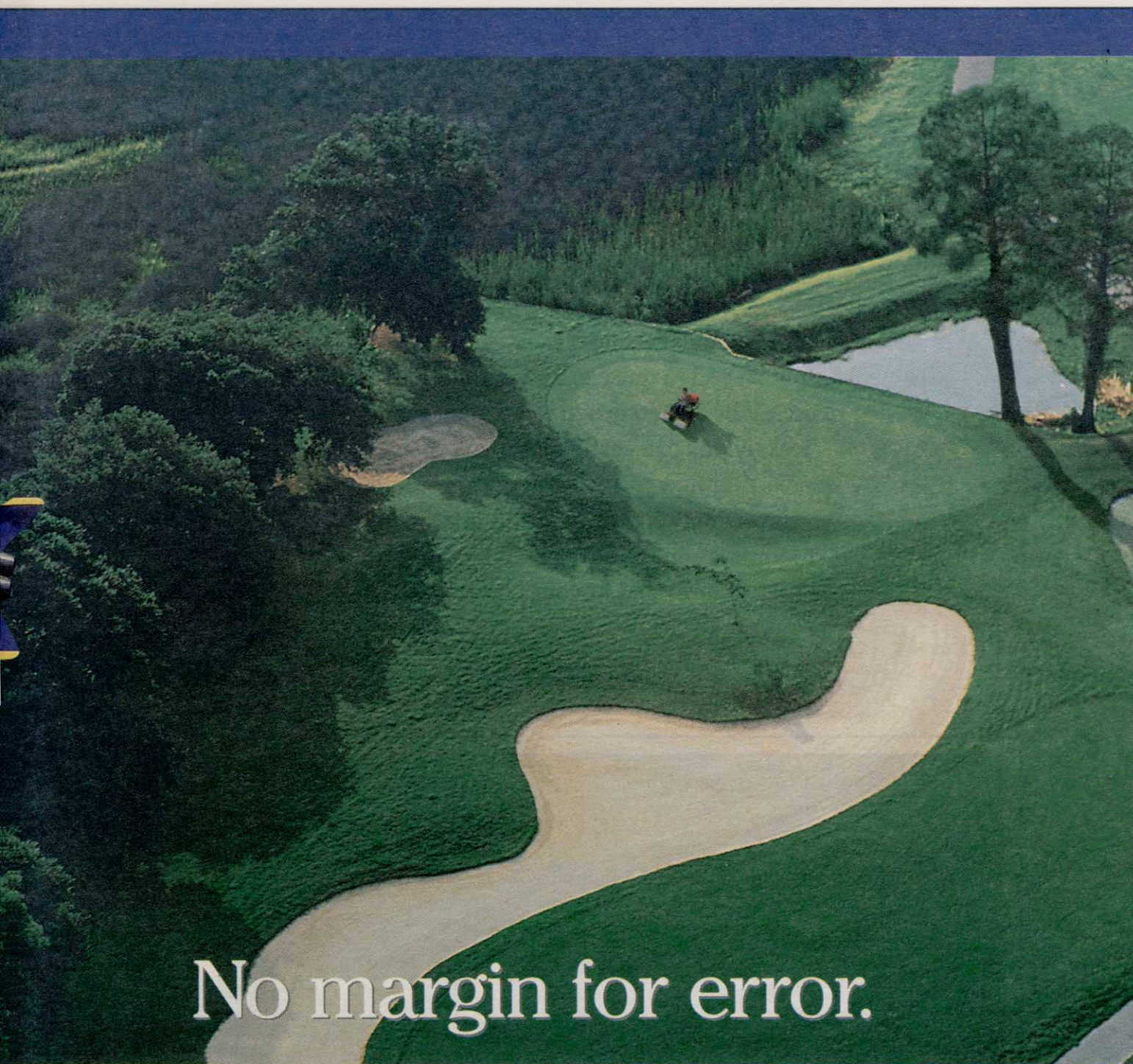
Pine Valley

Continued from previous page

process has been very enjoyable for our members and employees, as well as the Pine Valley community. Audubon has made us more aware of protecting and enhancing the wildlife and natural resources on Pine Valley's 620 acres."

"Pine Valley Golf Club has shown a strong commitment to its environmental program. They are to be commended for their efforts to provide a sanctuary for wildlife on the golf course property," said Joellen Zeh, staff ecologist for the ACSS.

"To reach certification, a course must demonstrate that they are maintaining a high degree of environmental quality in a number of areas," explained Zeh. These categories include: Environmental Planning, Wildlife & Habitat Management, Outreach and Education, Integrated Pest management, Water Conservation, and Water Quality Management. Golf courses from the United States, Canada, and Europe have also achieved certification in the program.



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International superintendents report progress and challenges

By PETER BLAIS

ORLANDO, Florida, USA — Representatives from around the globe presented updates on their associations and the state of golf in their countries during the Golf Course Superintendents Association of America's International Summit at the recent International Conference and Show.

Following is a summary of their comments:

• **Indonesia** — The Indonesian superintendents association (ASPGI) was established roughly three years ago, according to Garry Crothers. The association lists more than 100 members and meets every two months. The Pacific Rim economic crisis has basically halted new course construction in the country. One, part-time person is involved in turfgrass research in Indonesia. But Indonesian superintendents are still seeking educational opportunities abroad while developing their own educational programs.

• **Sweden** — The Swedish Greenkeepers Association is committed to environmental programs, said Stig Persson. The group's environmental efforts are chronicled at the ecologyunit.com web site. The association also recently moved its office to Skytteholm, Ekero S-17890; telephone 46 823336.

• **Britain** — Even though more than 100 new courses will open throughout Continental Europe in 1999, new golf course development has slowed, according to Howard Swan of the British Institute of Golf Course Architects. Still, certain areas, particularly Central Europe, have huge development potential.

There are three main European architects' associations located in France, Germany and Britain. The British Institute has 60 members, with half in Britain and half scattered throughout Europe.

The British Institute offers a post-graduate program in golf course architecture at a university in Surrey. The program lists 21 students from nine different countries.

• **Ireland** — The number of courses in Ireland has doubled in the past 10 years, according to Joseph Bedford a member of the Golf Course Superintendents Association of Ireland. The 2005 Ryder Cup will be held south of Dublin.

There is a growing demand for improved playing conditions and most superintendents are hungry for the knowledge needed to provide those conditions. The Irish association has its own conference, trade show and magazine. British architect

Howard Swan and U.S. professor Paul Rieke will speak at the group's 5th annual conference.

Insuring job security is a major priority for Irish greenkeepers, who are working with members of the Irish Golf Course Owners Association to improve the situation.

Northern Ireland has its own

greenkeepers' association. Plans are to eventually merge the two Irish associations.

Because of its small size, the Irish association will continue to depend on and need to communicate with the Ecology Unit and other European associations.

• **South African GCSA** — The government has challenged

the golf industry to help correct some of the societal problems of the past, according to Nigel Butler of the South African superintendents association. Some superintendents are conducting training and literacy classes that extend beyond the workforce and into the employees' families. The government sees sports, like

golf, as an instrument of bringing peace to the country.

• **International Greenkeepers Association (Germany)** — Last year the 700-member IGA signed an agreement with the German Golf Association to share a new office in the golf association's building in

Continued on next page

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GCSAA adding staff for 1st Tee

LAWRENCE, Kansas —The Golf Course Superintendents Association of America plans to hire a full-time staffer to oversee the national organization's efforts with The First Tee program and other junior golf programs nationwide.

GCSAA spokesman Jeff Bollig said GCSAA hopes to hire someone for the position by April

1. The new hire would likely work in the career development office where he or she would assume responsibility for GCSAA's initiatives with The First Tee, various junior golf initiatives, GCSAA student chapters and other youth-oriented programs. Those responsibilities are currently spread among existing board and staff members.

"GCSAA's decision to become more involved in The First Tee program and the importance of the superintendent in maintaining these new facilities led to the decision to create this new position," Bollig said.

Int'l supers

Continued from previous page
Wiesbaden, according to a German representative. The IGA has established a new certification program for greenkeepers, which is required by German law to make greenkeeping a profession. The IGA is growing by approximately 40 new members every year.

• Italian Golf Federation —

U.S. turfgrass specialist Jim Beard started working with IGF 12 years ago. Three Italian agronomists traveled to Texas (USA) A&M University where they studied under Beard. Upon returning to Italy, they developed a training program that has been in place for 10 years. The IGF has also initiated funding for putting green and fairway research. Five Italian universities now have their own turfgrass programs. And despite serious economic problems, the government has allocated \$2 million for turfgrass research in Italy. Beard said the progress in Italy can be traced back to the initial seed money invested in sending those three Italian agronomists abroad to study.

• Canadian Golf Superintendents Association — The CGSA recently released its new environmental resource, the results of nearly four years' work. Copies are available for \$300, although one free copy is available to national GCSA chapters, said Executive Director Vince Gillis. CGSA has a strong board with all votes during Gillis' 10-year tenure being unanimous.

The association launched its national occupational standards program last year, calling on the entire golf industry's input.

A compensation and benefits package survey received 63 percent response from CGSA members. The association also surveyed members on what they wanted on the CGSA's new web site, which will be launched later this year.

• GCSAA — Public relations and membership standards are the GCSAA's major foci heading into the millennium.

The association has hired a Boston public relations firm to help upgrade the superintendent's image and showcase the profession's importance in the minds of the American golfer. The April issue of *GOLF Magazine*, will feature an eight-page insert describing the superintendent's job. The goal is also to educate the course owner employer influential golfer in the hope these groups will better understand the difficulty of the superintendent's job resulting in improved job security. The insert will include a sweepstakes card that will entitle the winner to accompany the superintendent during the U.S. Open at Pinehurst in North Carolina.

The association is also working on a set of membership standards that will clarify to the golfing public exactly what is required to become a Class A GCSAA superintendent. Plans are to have a proposal to present for a full membership vote by the 2001 Conference and Show.

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New vaccine helps people prevent lyme disease

By CHARLES LAFFERTY

Recently SmithKline Beecham Pharmaceuticals held a seminar at Chelsea Pier, N.Y., to introduce a new vaccine (Lymerix) to combat lyme disease. Anyone who enjoys the outdoors, from the weekend gardener to the avid golfer and fisherman, is at risk of being in-

fectured by Lyme disease.

Former PGA Tour player Tim Simpson spoke of how Lyme disease abruptly ended his career in 1991. The symptoms vary from individual to individual — from flu-like symptoms to bells palsey — and some people are even killed by this disabling disease.

Lyme disease is transmitted to humans via a deer tick bite. The deer tick is found on either the deer or field mice. The deer tick is small and difficult to detect. In fact, some people are unaware of even being bitten by the tick.

Ticks are mainly found in tall grassy wooded areas and are present from spring to late fall. This puts golfers especially at risk when searching for errant shots. Chances are good that the tick carrying lyme disease are present anywhere deer and field mice are found.

Simpson contracted the disease while hunting in Georgia. He awoke at 1 a.m. scratching, only to find more than 300 ticks all over his body. He suffered with varying symptoms for more than one year before doctors diagnosed his condition as lyme disease. This difficulty to diagnose lyme disease is what makes the new vaccination instrumental in the fight against it.

The disease is transmitted when a tick bites the host human and begins to feed on the blood stream.

The tick secretes juices to aid in the digestion process, and this transmits the bacteria *Borrelia burgdorferi*. The bacteria enters the body and can affect the person immediately, or lay dormant for years before symptoms are experienced.

With the vaccine, the bacteria is actually killed inside the tick before entering the body. Interestingly enough, the tick is then free from the bacteria and can no longer spread lyme disease.

The vaccine is genetically engineered from the outer surface protein of the causative lyme disease bacterium.

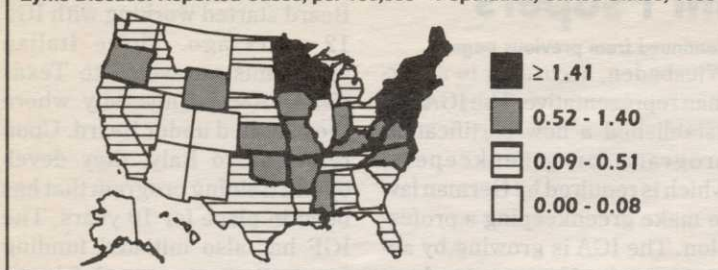
Clinical trials prove the vaccine to be 85 percent effective against lyme disease. This is impressive, considering that flu shots only carry 62-percent effectiveness.

With the Lymerix vaccine, all who enjoy the outdoors should consider the vaccine another tool in the fight against lyme disease. Lymerix is covered by most health-care providers and is given in three visits over a one-year span.

The initial shot is followed by another one month later and the last which is given 12 months from the original shot. It is still not known if any further shots are required due to the recent advent of the vaccination. For any further information, people should contact their physician.

Charles Lafferty is assistant superintendent at Wykagyl Country Club in New Rochelle, N.Y.

Lyme Disease: Reported Cases, per 100,000 — Population, United States, 1996



The extensive existence of deer ticks may be surprising to many people. This map shows the range in which lyme disease cases have been reported.



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ON THE MOVE

Garrett takes on Clemson challenge

CLEMSON, S.C. — The president of the Carolinas Golf Course Superintendents Association has been named superintendent of



Donald Garrett Jr.

Clemson University's Walker Golf Course. Donald C. Garrett Jr. has taken the Clemson post after nine

years as director of golf and landscape maintenance at Dataw Island Club in Beaufort. Originally from Six Mile, Garrett began his career at Pickens Country Club. He worked as an intern at Greenville Country Club and participated in bentgrass research while earning a bachelor's degree in horticulture from Clemson.

After graduating in 1985, he held positions as either assistant superintendent or superintendent at three Charleston-area courses — Osprey Point, Turtle Point and Marsh Point — before joining Dataw Island Club in 1990

TARZANA, Calif. — Braemar Country Club has hired **Glenn Quirk** as its new golf course superintendent, according to General Manager Mark Murphy.

The superintendent at Stoneridge Country Club in

Poway (San Diego) since 1994, Quirk has 18 years of golf course experience. A graduate of Rhode Island University's Horticulture, Turfgrass and Grounds Management degree program, Quirk has worked at numerous clubs on both coasts, including Coto de Caza, where he was instrumental in building the course and

remained there for six years.

Quirk's strategy to integrate best management practices to take Braemar's courses to the next level. He believes in using chemicals judiciously, and plans to use more preventive maintenance.

•••

HARSHAW, Wis. — Expan-

sion plans at Pinewood Country Club here include the appointment of **Tod Cantrall** as golf course superintendent. Cantrall spent 11 years as superintendent at Inshalla Country Club in Tomahawk, and his experience while there will prove valuable in helping to transform Pinewood into a first-rate resort-type golf course for the Northwoods area.

Ludwig & Associates, Ltd., a landscape architectural/golf de-

sign firm located in Farmington Hills, Mich., is designing new features and greens at Pinewood. Phase I of the re-design began last fall with the reshaping of the greens by employing contemporary contour-mowing techniques. Phase II includes continuing the contour mowing along the fairways to enhance shot value and aesthetics. This spring begins the upgrading and improving of the irrigation system.

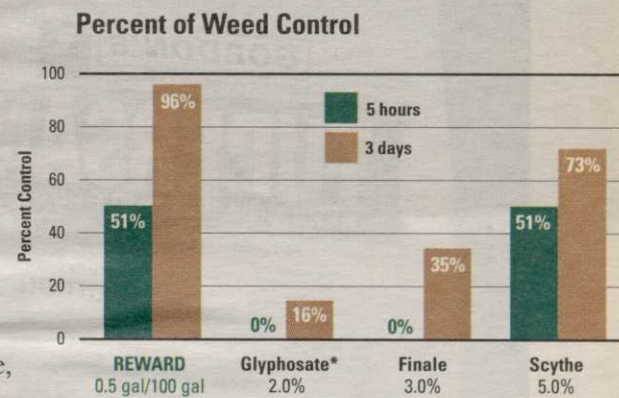
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CIRCLE #150

Bitterman defends Mow Down title

HARRISBURG, Pa. — Al Bitterman of Lake Zurich, Ill., defended his lawn mower racing title at the 1999 STA-BIL Motorama Mow Down here Feb. 19.

Bitterman, a turf equipment technician at Westmoreland Country Club in Wilmette, Ill., raced his 1978 Montgomery Ward mower to victory at the 21st annual Motorama Indoor Races and Speed Show, one of the largest indoor speed shows in the nation. Bitterman bested a field of eight racers with a top average speed of 30 mph during the 15-lap mow down on the 1/8-mile clay track.

"It felt good out there," said Bitterman in front of 3,000 Motorama spectators. "I spent the winter making adjustments to the engine and transmission and it really paid off."

Bitterman finished second in the 1998 Prepared BP Class Points Race in the 1998 STA-BIL National Lawn Mower Racing Series.

The Motorama event is one of several pre-season mow downs leading up to the STA-BIL National Lawn Mower Racing Series, which kicks off May 2 in Decatur, Ala.

OSHA SOFTWARE HELPS COURSES IDENTIFY HAZARDS

The Occupational Safety and Health Administration (OSHA) has developed a free software program that will help identify and understand health hazards in the work place. All that is necessary is downloading the software from the OSHA web page, following installation instructions and answering a few questions. The result is a report that identifies areas that probably need to be worked on and provides the OSHA standards that apply. The web page address is: www.osha.gov/oshasoft. OSHA says the only difficult question when running the software is figuring which standard industry code (SIC) applies to golf courses. Fitting golf courses and maintenance facilities the best is the Services Industry category and Museums, Art Galleries, Botanical and Zoological Gardens subcategory (code 84).

New England supers elect Osgood president

NEEDHAM, Mass. — The Golf Course Superintendents Association of New England has elected Kevin F. Osgood of Newton Commonwealth Golf Course as its president, heading a new slate of officers.

Joining Osgood are Vice President Robert Ruzala of Hickory Ridge Country Club; Secretary James R. Fitzroy of Presidents Golf Club; Treasurer Michael Iacono of Pine Brook Country Club; Finance Chairman Daniel Higgins of Winchester Country Club; Golf Chairman

Michael J. Hermanson of Gardner Municipal Golf Course; Education Chairman Ronald Dobos of Cedar Hill Golf Course; and Newsletter Chairman Russell Heller. Robert DiRico of Brae Burn Country Club is past president

Elected as trustees were Arthur Silva of Belmont Country Club, David Comee of The Winchendon School Country Club and Wayne LaCroix of the Andover Country Club.

This year is the 75th anniversary of the New England association.

Jackson named to Florida Ag Institute

TAMPA, Fla. — Joel Jackson, director of communications for the Florida Golf Course Superintendents Association, has been elected to the board on directors of the Agriculture Institute of Florida during the Institute's annual retreat and planning session here on March 5.

Jackson retired as a certified golf course superintendent after 20 years at Walt Disney World. He has been the editor of the FGCSA's magazine The Florida Green for the past five years. The FGCSA created the director of communications position in January 1998 to assist the organization with public relations and government relations issues.

The Agriculture Institute of Florida is an organization made up of communications professionals employed by the various agriculture commodity associations and the Institute for Food and Agricultural Sciences at the University of Florida.

The role of the Ag Institute is to help the agricultural community in Florida educate the general public with facts on issues ranging from food safety and production, crop protection, environmental impacts and government regulations.

Jackson's presence on the board provides a voice for Florida's turfgrass industry in these discussions and education efforts.

MIDWEST EXPO BACKS RESEARCH

INDIANAPOLIS — At the Midwest Turf Expo here, the Midwest Regional Turf Foundation (MRTF), whose mission is to support turfgrass research and education at Purdue University, presented a check to the Purdue Department of Agronomy for \$146,000 for annual support of the turfgrass program, and an additional check for \$100,000 to help complete the W.H. Daniel Turfgrass Research and Diagnostic Center. Steve Frazier of the Links Group was given the 1999 Distinguished Service Award, the highest honor given by the Midwest Regional Turf Foundation. The award is presented to an individual who has gone above and beyond the call of duty for the turf industry of Indiana.

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T036/0398
Revised

Computers and vinyl: Organizing equipment

By KEVIN J. ROSS

EDWARDS, Colo. — Many superintendents have used labels and lettering as an effective way of organization. I first started using vinyl labels to code our golf course equipment. I can remember years ago, buying those packets of vinyl adhesive lettering at the local K-Mart. The problem with those packets was that the most popular letters and numbers were used quickly and you were stuck with many packets of non-useful ones.

Enter the 1990s and the computer age, and this problem has been solved. Many sign companies have the capability today to produce adhesive vinyl letters, numbers, logos, etc. to your own specifications. At these sign companies, a large sheet of adhesive vinyl is fed into a machine and stamped out according to the design work done on a computer.

We work with a local sign company and use our own specifications, which include sizing, colors, fonts and logo designs.

So now that these letters and numbers are easier to get, what can they be used for? Our main goal at the Country Club of the Rockies is to simplify things as much as possible, to take the guesswork away from the staff. A few of the more important uses we have found are:

- Equipment coding: All our equipment is coded to track hours, gas usage, repair costs, etc.
- Fuel requirements: All our equipment fuel tanks are labeled with a G (signifying gas), D (diesel), or M (mixed). These are also color-coded and match our fuel pumps which are labeled.
- Job boards: We customize our assignment boards.
- Safety areas and items: Items such as eye wash and first-

Section #1 - Holes #1,4,7,10,13,14,15,16,17,18,19,20,21,22,23,24,25	Section #2 - Holes #2,5,8,11,12,15,16,17,18,19,20,21,22,23,24,25	Section #3 - Holes #3,6,9,12,15,16,17,18,19,20,21,22,23,24,25	Weekend Schedule
Section #1	Section #2	Section #3	Non-Section Duties
Job 1	Job 2	Job 3	Staff
1	2	3	4
5	6	7	8
9	10	11	12
13	14	15	16
17	18	19	20
21	22	23	24
25			



Whether listing staff chores, above, or coding equipment for such things as gas versus diesel, these vinyl letters and numbers keep the maintenance operation organized.



aid stations, and chemical storage facilities.

These are just a few examples where these vinyl letters and numbers can increase organization. I'm sure many superintendents can think of additional uses which can fit their operation.

The cost of having these made is minimal. The efficiency and organization they provide can be very high. They have been very helpful to our operation. Give these a try and I think you'll feel the same.

HEART OF AMERICA HONORS FEARIS

The Heart of America Golf Course Superintendents Association's Chester H. Mendenhall Award has been presented to Dave Fearis of Blue Hills Country Club, president of the Golf Course Superintendents Association. Fearis has been an active member of the Heart of America GCSA for many years and is currently a member of the board of directors as a special director. He has held every office from director to president of both the Heart of America GCSA and the Golf Course Superintendents Association of America. "Dave has always made himself available to aid and assist fellow superintendents whenever possible and with Heart of America GCSA affairs as needed."

NAUDET NAMED SUPER OF THE YEAR

The Heart of America GCSA's Superintendent of the Year Award was bestowed upon its president, Jim Naudet of Leawood South Country Club in Leawood, Kan. In addition to his duties as vice president of the HAGCSA in 1998, Naudet was a member of the Conference and Public Relations committees. Naudet and Leawood South CC served as host of the first annual HAGCSA Media Day in August. He has been an active member of the Heart of America GCSA for many years, getting elected president last November.

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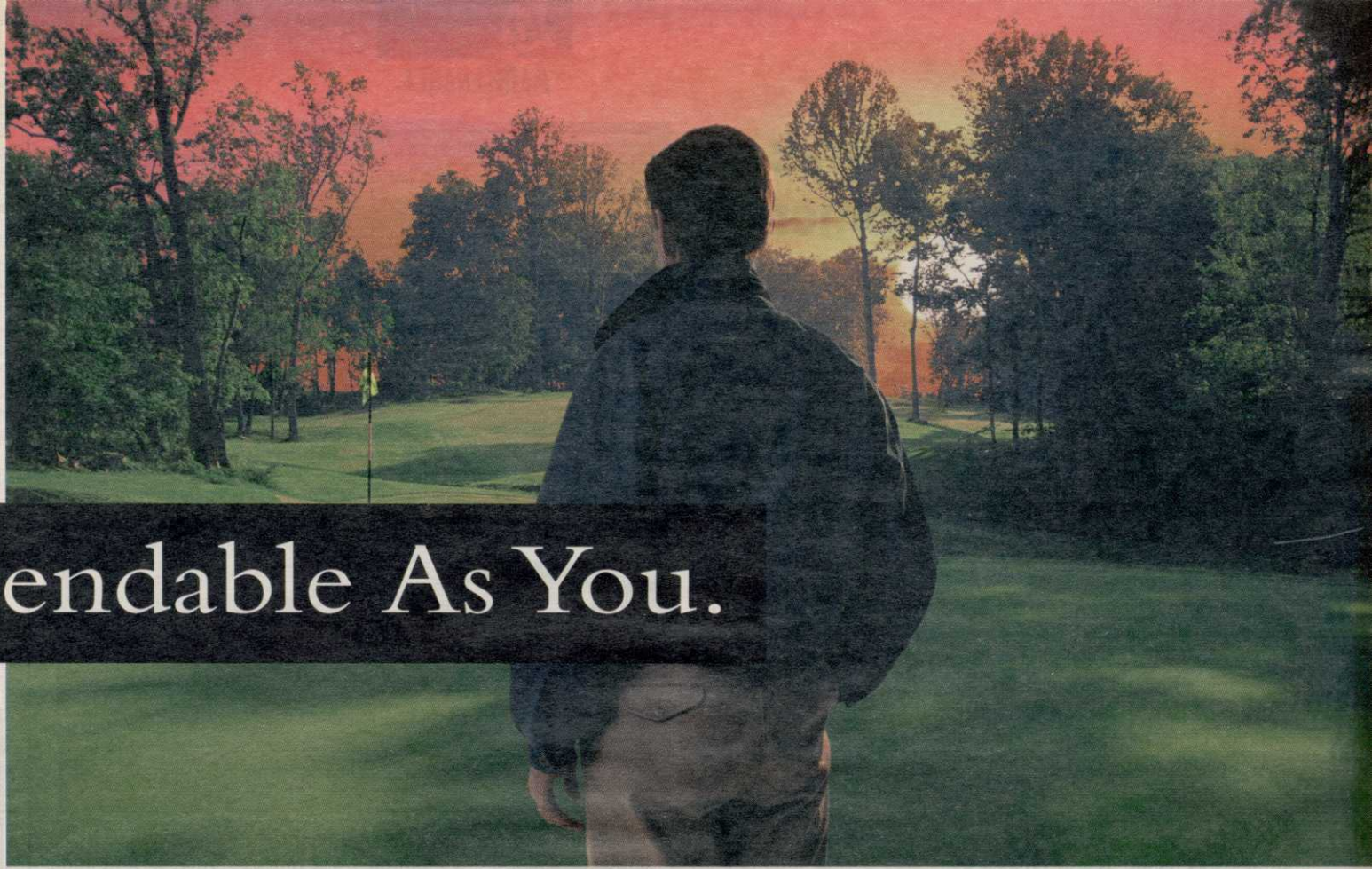
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CIRCLE #115

ZPP-DAC-009

BRIEFS



JOHNSTON DESIGNING ATLANTA TRACK

ATLANTA — Clyde Johnston has been retained to design an 18-hole upscale, daily-fee course at Hampton Creek, a 514-acre planned community located just north of metro-Atlanta. The dominant natural design feature on the course is a set of four creeks that meander through the property and create both forced-carry and lateral hazards. Additionally, an 18-acre manmade lake that dates back to the 1940s will frame the 18th hole and retain water for irrigation uses. Johnston will work in concert with Landscape Unlimited of Lincoln, Neb., on the construction of the course.

GOLF RESOURCES CHANGES NAME

DALLAS — Golf course design firm Golf Resources Group has changed its name to D.A. Weibring/Golf Resources Group Inc. to capitalize on the national identity of 22-year- PGA professional golfer and company chairman, D.A. Weibring. The company has also announced the addition of Steve Wolfard to its design team. He formerly worked with Jack Nicklaus/Golden Bear International, Inc. and Gene Bates Design. Wolfard will oversee all Weibring/GRI design and renovation projects and the staff of Maury Miller, Jimmy Fechter and Mike Brown.

SHORT-GAME AREA HELPS PAR-3 TRACK

SAN DIEGO — The Four Points Hotel Sheraton San Diego has opened a short-game practice facility at its nine-hole par-3 course, according to General Manager Nabih Geha. Geha said the new facility, which features a large putting green, chipping area and sand bunker, is ideal for golfers to practice their short game with shots up to 40 yards away. Designed and built by Agoura Hills-based Golf Projects International, the 3 Par At Four Points golf course features a challenging golf experience for players of all abilities. The eight-acre course has nine holes ranging from 60 to 130 yards and includes sand bunkers, grass bunkers and two-tiered greens.

PALMER OFFICE OPENS IN MALAYSIA

KUALA LUMPUR, Malaysia — Palmer Course Design Inc. has opened an Asia-Pacific regional office here. J. John Hamilton is operating the office as regional vice president. Hamilton, a registered landscape architect, planner and golf course architect, has nearly 20 years of design experience and has worked six years in Asia.

A Tillinghast tour de Force

Ron Forse renews several designs by the master

By MARK LESLIE

NEWPORT, R.I. — The year 1998 was "The Year of Tillinghast" for golf course architect Ron Forse, and it is spilling over into 1999 with work on one of the great historic clubs in America: Newport Country Club.

"It's really a restoration 'tweak,'" said Forse of his work at Newport CC, which was one of the original five clubs that formed the United States Golf Association. "The course is so pure. The character is very strong and it's still there. The [A.W.] Tillinghast greens are magnificent."

"I'm really excited about this," he added. "They approved the master plan a couple years ago, and it's great to get started."

While awaiting the go-ahead here, Forse was busy restoring the Tillinghast mark elsewhere:

- Last fall he restored the bunkers on three holes at Sunnehanna Country Club in Johnstown, Pa., "a job done wonderfully by Frontier Construction,



The 18th hole at Golden Valley Country Club in Minnesota before reconstruction, left, and afterwards, above.

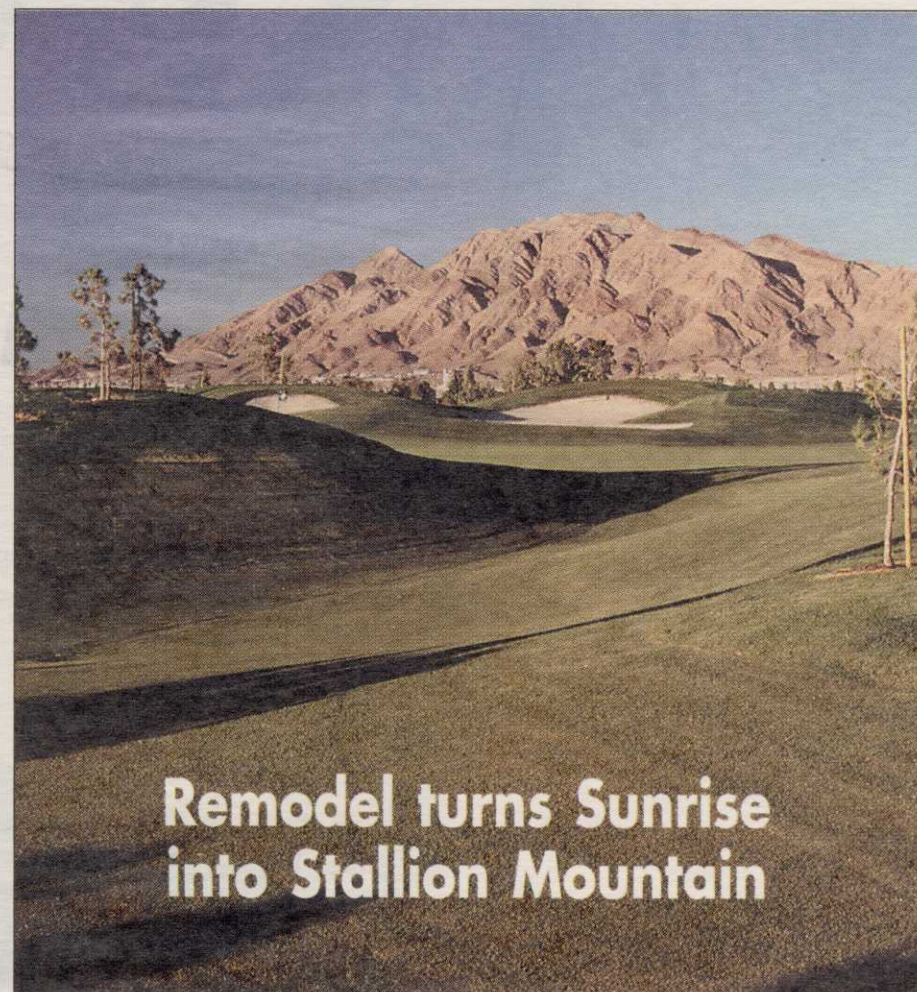
by the way."

- Last fall, working with Zona and Henderson Construction Co., he also restored half the bunkers at Valley Country Club near Hazleton, Pa., and

rebuilt three green sites because they were too steep for today's low-cut turf.

- He is in the process of "one of the best projects we've ever done," at

Continued on page 40



Remodel turns Sunrise into Stallion Mountain

LAS VEGAS — Several million dollars have been spent remodeling Sunrise Country Club since June 1977, when Southwest Golf bought the 640-acre property from a group of individual investors.

Now known as Stallion Mountain Country Club, the facility includes three 18-hole golf courses — Secretariat, Citation and Man O War, a 16-acre practice facility and an 18,000-square-foot clubhouse.

Southwest Golf has enhanced and refurbished Stallion Mountain and its clubhouse.

More than 500 pine trees and 2,000 shrubs were planted, and a number of colorful flower gardens were added. Irrigation systems have been upgraded to improve watering schedules and to prepare for the planting of a new hybrid Bermudagrass next summer.

RTJ II CHANGES

Charlton returns; Jones, Phillips ink an alliance

PALO ALTO, Calif. — Bruce Charlton, who in January left Robert Trent Jones II International to form a design firm with colleagues Don Knott and Gary Linn, has rejoined RTJ II as a senior designer.

Robert Trent Jones Jr. announced that Charlton and Ty Butler are his new senior designers.

"I spent 18 years of my career working with RTJ II and I'm excited about carrying forward Bobby's and Mr. Jones Sr.'s legacy of building the world's great golf courses," Charlton said. "I wish my good friends, Don Knott and Gary Linn, who I believe to be among the finest golf course architects anywhere, success in their new venture."

Charlton is a member of the American Society of Golf Course Architects and a graduate of the University of Arizona

Butler, a graduate of Kansas State University, has nine years of experience with RTJ II in all aspects of golf course design.

•••

Meanwhile, Jones also announced he has formed a strategic alliance with another former employee — Kyle Phillips.

Kyle Phillips Golf Course Design of Granite Bay will design a limited number of golf courses each year

Continued on page 44

Classic Newport CC returned to 'old self'

Continued from page 39

Golden Valley (Minn.) Country Club. Using old photos, Hartman Construction Co. is restoring bunkers. "Jeff Hartman is doing phenomenal work there," Forse said. He added that Golden Valley is a unique par-73 track with one extra par-3 and two extra par-5s — meaning six par-5s and five par-3s.

- He is in the midst of a master restoration plan for Brooklawn Country Club in Fairfield, Conn., site of the 1987 Senior Tour Open.

- He is wrapping up a master plan for Williamsport (Pa.) Country Club, preparing to restore many of the bunkers this fall.

Meanwhile, Forse is one-third through his work at Newport CC, which he described as "sort of a hidden gem. It's only a par-70, but you'd never know it was that short because it is routed so beautifully over the ground."

The course was originally designed by Donald Ross in 1915 and had hosted a couple of U.S. amateur competitions, including one in which C.B. Macdonald, one of the classic course designers, lost in the finals. Tillinghast was hired in 1924 to design seven new holes on property across the road and to rework the entire property of Ross's design.

Working with those 1924 plans, Forse is performing this "gentle renovation."

Already he has restored some of the key bunkers and intends to expand the greens to their original size.

"Generally," he said, "the greens are gaining three to five feet all the way around the edges. They have lost very interesting, and sometimes very difficult, intended perimeter cupping areas. So we're getting all that back, plus the ability to recover from greenside bunkers, so golf balls don't get caught up in the collar."

On the famous par-3, Redan-style 14th hole, the green is being extended at least 20 feet on the right-front corner.

The greens "may not be the wildest ones Tillinghast ever did because of the wind off the ocean there," Forse said. "But the raised spine protruding into the putting surface from the rear on many of the greens separates cupping areas and rewards good approach shots. It's a very interesting saucer-type configuration."

In fall and early winter, work was completed on key bunkers, including one on the 4th hole, where sand has been reintroduced to a grass bunker

that had become a big grassy hollow.

A huge horseshoe-shaped bunker on the 6th hole has been filled in on the right side of the green, while a long S-curving bunker on the 5th fairway was also returned to its unique flavor.

While keeping true to the

drawings on most of the course, Forse did take some liberties on the short, uphill straightaway par-5 17th hole.

"We added a Tillinghast trademark: a sea of mounds or grouping of bunkers all the way across the fairway, kind of a Sahara or Hell's Half Acre," he said. "We took the 250-yard

'What sets the place [Newport CC] apart is, it's so historic they don't water their fairways, not even for the U.S. Amateur.'

— Ron Forse

mark from the back tee as the center of this mound complex. We also added bunkers from left and right on the second landing area, so there are all

these strategic options. Tillinghast did this a lot at Ridgewood Country Club in Paramus, N.J., and they

Continued on next page

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INSIDE

Upfront Prep

Dr. William Torello has ideas on sparing turf the effects of harsh winters. Start in the fall 17

Sod Stock

High demand for sod stock 53

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ALL IN THE FAMILY
Robert Trent Jones Sr. (left) has teamed with elder son Bobby to form a new architectural entity, RTJ Golf Ventures. For story, see page 37.

COURSE MAINTENANCE

Sprinkler uniformity sought but not found 17
New Chemistry: biologicals & nematodes 20-21
Putting green research: Top 10 projects

PLAYERS SURVEYED ON SUPERSTROKE

Image enhanced but golfers insist on 'green' look

BY PETER BLAIS

ORLANDO, Fla. — Most golfers view superintendents as trained professionals and the person most responsible for course conditions — news course managers should find encouraging consideration efforts to elevate their image. Disturbingly, however, few golfers organized the Golf Course Superintendents' Association of America (GCSAA) a superintendents' national organization. Also troubling was the unwillingness of most golfers to accept poorer playing conditions in exchange for reduced chemical and water use on their courses. According to a recent survey of golfers conducted by the National Golf

STUDY SHOWS:

Name designers pull higher dues and green fees

BY PETER BLAIS
HARRISBURG, Pa. — Private courses designed by signature architects command higher initiation fees. Monthly dues for architecture facilities are climbing steadily.

MAKE THE
ALL I

MT. STERLING, Ky. — Graham Marsh, managing director of Graham Marsh Golf Design, and Bill Kubly, president of Landscapes Unlimited, are developing Old Silo, a daily-fee golf course here. The course will be the first design project in the United States for Graham Marsh Golf Design and the first golf course ownership project for Graham Marsh. It will also be the first course that Marsh and Landscapes Unlimited have teamed up to develop.

Marsh, Landscapes team up in Kentucky

Old Silo was chosen as the name because the property has been a farm for more than 100 years and there is an old silo on the property that will be restored and maintained as a landmark.

The course will be routed in and around Silver Creek, a real-estate development that is already underway.

Old Silo will feature multiple tees for players of all abilities and the course will

measure 7,000 yards from the back tees. It will feature holes that play along the ridges with vista views as well as holes that run along the creek bottom with many trees and other challenges. There will be a complete practice facility featuring a driving range, putting and chipping greens as well as practice bunkers. The clubhouse will have a fully staffed pro shop, bar and grill, and will offer players

all the amenities usually found in a country club setting.

Old Silo is expected to open in October. The ownership team of Marsh and Kubly will operate and manage the facility, which will promote junior golf, host golf leagues as well as tournaments, and encourage players of all abilities to enjoy the course.

Graham Marsh said: "The site for Old Silo is one that allows us to design and build a first class golf course that will challenge players of all levels."

Tour de Forse

Continued from previous page

needed something to toughen up this short par-5.

"Sometime in early spring we will continue," Forse said of the bunker work.

Another aesthetic renewal is the clearing of brush that had obstructed views of the ocean. Some has already been removed, and "we're evaluating whether more should be cleared to open up views," Forse said.

"What sets the place apart," he added, "is, it's so historic they don't water their fairways, not even for the U.S. Amateur. And they voted 8-1 on the committee to continue without watering them.

"It's a joy to work with the people there."

As historical the course is, so is the property itself, overlooking the Atlantic Ocean.

According to the club, the 10th fairway and green is the oldest in continuous use in the United States. And on that same

Tillinghast 'changed his style more than anybody. He was so versatile, he was hard to peg down.'

— Ron Forse

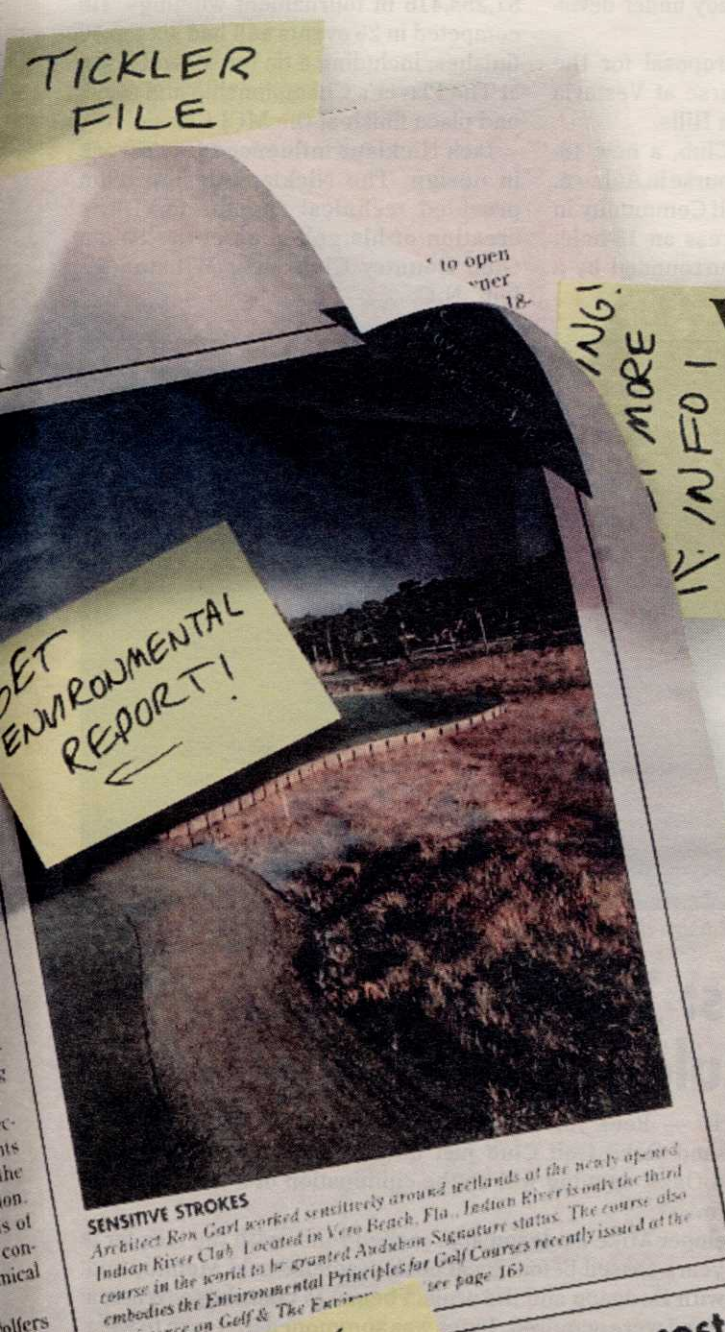
fairway Rochambeau and Lafayette camped their troops. Proof is found in the corrugated cardboard-looking ground itself. The earth was moved to build gentle ridges about 25 feet apart so the troops could set up their tents and rainwater would run between them.

...

Forse has found himself enamored with Tillinghast's work for a number of reasons.

He ranks with Ross and Seth Reynor in Forse's book because of "his strong strategy and versatility," Forse said. "He changed his style more than anybody. He was so versatile, he was hard to peg down.

"He was very strong and bold in his strategies and bunkering in creating risk-reward. And he would plateau his greens a lot. But you get to a place like Winged Foot and they are kind of plateaued, but there was so much rock he changed that, too."



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on course costs

By MARK LESLIE
Worried the cost of golf is starting to drive people from the game, the incoming and outgoing presidents of the American Society of Golf Course Architects have presented arguments that would lead developers to make harsh choices about their projects.
Picking sides in a point-counterpoint atmosphere, Past President Jeff Brauer of Golfscapes in Houston and new President Denis Griffiths of Braselton, Ga., agreed construction costs have escalated too high but disagreed over the cure.
"Ten years ago there were few upscale daily-fee projects," Griffiths said. "Everyone today is doing





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CIRCLE #118

Tour's Glen Day joins course designer Blalock in new company

BIRMINGHAM, Ala. — PGA Tour pro and golf designer Glen Day and Alabama golf course architect Alan Blalock have formed a golf course design firm called Glen Day Alan Blalock Golf Design.

The 33-year-old Day, who was born in Mobile and lives in Little Rock, Ark., with his wife and two young daughters, will continue his pursuits on the PGA Tour in addition to partnering with Blalock.

Day and Blalock will work together on three major projects already under development:

- The master plan proposal for the redesign of the golf course at Vestavia Country Club in Vestavia Hills.
- Moore's Mill Golf Club, a new 18-hole, 6,916-yard, par-71 course in Auburn.
- The Tartan Pines Golf Community in Enterprise, which features an 18-hole, 7,002-yard golf course surrounded by a residential community.

"Alan and I will create the kind of courses that will challenge a PGA Tour pro, yet provide the average player with a very enjoyable day of golf," said Day.

"We will create our courses the way a sculptor creates a find work of art," said Blalock. "At the same time, our courses will be completed on time and on budget."

Day had his best season ever last year. He finished 1998 as the 15th-ranked money leader on the PGA Tour with \$1,283,416 in tournament winnings. He competed in 26 events and had six top 10 finishes, including a tie for second place at The Player's Championship and a second place finish at the MCI Classic.

Jack Nicklaus influenced Day's work in design. The Nicklaus design team provided technical support for Day's creation of his golf course, the Salem Glen Country Club, near Winston-Salem, N.C.



Rees Jones' first Michigan golf design challenges around the green sites.

Rees Jones: Thousand Oaks 'a spectacular, natural site'

GRAND RAPIDS, Mich. — Rees Jones has finished construction on his first Michigan project, Thousand Oaks Golf Club just outside this city. Slated for a summer debut, Thousand Oaks' opening will be the culmination of a dream which began nearly a decade ago.

In the early 1990s, developer Mike Dodgson approached Jones with the idea for a course on the site. A few years passed before local businessmen David Mehney and Frank Southwell teamed with Dodgson and the project began to take shape. When a final few critical parcels of land were acquired, Jones was summoned to return to west Michigan to start his design.

Situated on 420 acres above the banks of the Grand River, the course has the earmarks of a prototypical Rees Jones design: wide, sweeping fairways and landing areas, subtle bunkering and classic, traditional greens complexes.

"Thousand Oaks possesses a spectacular, natural site we were able to optimize for the game of golf," said Jones. "I guess you might say there are a thousand reasons why you should play this golf course over and over again."

Said Dodgson: "We told Rees to build a great course, and to let us worry about real estate later."

Added Mehney: "Rees's attention to detail is amazing. His design is such that houses here won't impact the golf experience."

Built almost entirely on rich, sandy loam, Thousand Oaks cuts through acreage filled with oak, maple and ash trees. It will measure 7,100 yards from the championship tees, but will be decidedly user-friendly, thanks to generous landing areas and open approaches on most holes.

Thousand Oaks will be overseen by Director of Golf Operations Gary Smithson, who previously worked under Buddy Whitten as head golf professional at nearby Blythefield Country Club. Eventually, the course will be bordered by 125 single-home sites, with a proposed condominium development planned for the early 21st century.

Kay brings Scottish look to Jersey



Scotland Run Golf Club's 16th hole incorporates the look of the original quarry and presents a challenge to golfers: The tee is located on one side of the cliff while the green is on the other side.

WILLIAMSTOWN, N.J. — Stephen Kay Golf Course Architects is putting the finishing touches on Scotland Run Golf Club, a high-end public par-71, 6,900-yard course.

Planned to open in early summer, Scotland Run is being built in and around an abandoned sand quarry, and will encompass more than 200 acres of land with elevation rises uncharacteristic to the southern flatlands of New Jersey.

In a rarely used procedure, golf course builder Fraser Golf Associates covered every tee, fairway, rough and green area with 2 feet of sand dredged from the quarry site.

Kay said that with 10 acres of water, breathtaking cliffs, and expansive waste areas, the course will offer three different looks — links, quarry and wooded. There are holes that will play in open areas, wooded areas, and beside cliffs that overlook the sand and gravel pits of the old quarry.

"When I first saw the quarry and cliffs, I envisioned the birth of a course with an enduring quality and possessing holes that were not only beautiful, but embodying a tremendous amount of strategic architectural value," said Kay. "There is a tremendous amount of variety. I think this course will also make the Top 100. It stands by itself."

Bergstol hopes for magic in barrens

JACKSON, N.J. — Located in the Pine Barrens region of Ocean County, Pine Barrens Golf Club will open this spring. Winding through 420 acres of protected natural terrain, the 18-hole daily-fee course features generous fairways edged by native pines, vast natural waste areas and huge undulating greens.

The vision and the financial backing for Pine Barrens Golf Club came from the course's architect, Eric Bergstol, who developed and assisted in the design of New Jersey National Golf Club in Basking Ridge, Minisceongo Golf Club in Pomona, N.Y., and Hudson National Golf Club in Croton-on-Hudson, N.Y.

With five sets of teeing areas on each hole ranging from 5,100 to 7,125 yards, and greens averaging more than 7,500 square feet, Pine Barrens will allow golfers to play the course suited to their ability and will test every level of skill.

Pine Barrens Golf Club boasts a double-ended practice facility with dual grass tees 120 yards wide and 45 yards deep. The landing area features target bunkers and greens at various lengths for optimal distance practice.



Designer Eric Bergstol attained Pine Valley look at Pine Barrens GC.



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McFarlane brings a bit of Scotland to America, and vice versa for Garl

By MARK LESLIE

LAKE MARY, Fla. — Citing the travel both ways “across the pond,” with Brits seeking golf course design jobs in The States and Americans taking on projects in the United Kingdom, American designer Ron Garl believes he has jumped out in front of the pack on both accounts.

Ending a search that began two years ago, Garl has hired Scotsman Steven McFarlane. On the one hand, McFarlane will bring “a touch of Scotland” to the Garl team’s designs in North America and elsewhere around the world. On the other hand, having the Scotsman in his stable should help land projects in the UK, Garl said.

A native of Troon, McFarlane graduated from the University of Glasgow with a degree in civil engineering and spent the last 12 years working with British architects Hawtree Golf Design.

“We worked on the renovation of a lot of the old courses in Britain, including Portmarnock and Royal Birkdale,” McFarlane said. “A lot of that rubs off. It’s going back to the traditional look in design. That style of golf suites me quite well.”

McFarlane has spent years playing the great courses of the UK.

Yet, having married a North Carolina lady, he has spent a lot of time on the East Coast, particularly the Carolinas, Georgia and the Boston area.

“I’ve been planning to come over [to work] for quite a few years,” McFarlane said. “It seems a great time to be working in The States. The golf industry is very bouyant now.”

At this point in time, he added, there is “a far greater scope of sites” in America than Great Britain.

“In England — and Scotland,

to a lesser extent — not many courses are being built,” McFarlane said. “Scotland only has five or six courses per year being built. Twenty to 30 in England. Planning and restrictions on decent land are so difficult now in England. You certainly can’t get any linksland, though in Ireland you can. In England

it’s very difficult to even get woodland, or parkland, or heathland either for environmental reasons or the ‘landscape character,’ where they call the land of Special Scientific Interest.

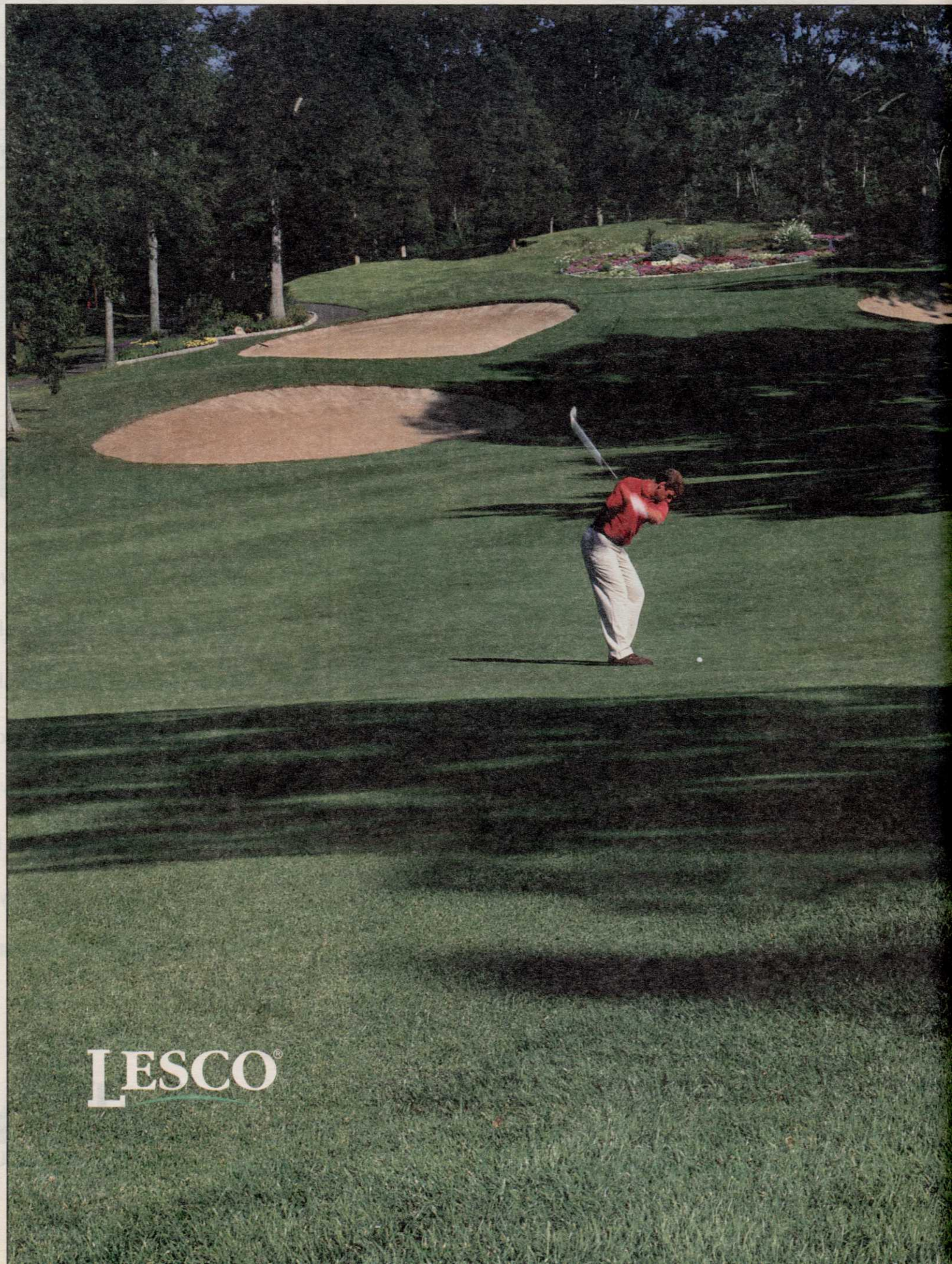
“On 90 percent of the courses where you can only get permission, it is really dull farmland.”

Working with long-time Garl designers Ricky and Ty Nix, McFarlane is especially excited to work on what Garl called “a true Irish-type links course” in Port St. Lucie, called Waterville; a seaside site in Puerto Rico called Cayo Largo, which has 2-1/2 miles of oceanfront; a property 30 miles south of Salt Lake

City, Utah; and a couple of courses in Costa Rica.

“I have worked on a lot of different types of land — different characters and different environments throughout Northern and Southern Europe, and on desert land,” McFarlane said. “I adapt what I’ve learned to each project

Continued on next page



RTJ II changes

Continued from page 39

with RTJ II, Jones said. The two are currently collaborating at the Golf Course De Lage Vuursche in The Nether lands, which is in the early stages of construction. They will also work together at Real Club Puerta de Hierro in Madrid, Spain.

Phillips, a lead designer with Robert Trent Jones II for 17 years, began his own company in 1997. His current work includes The Kingsbarns Golf Links 7 miles from the home of golf, St. Andrews, Scotland, which is scheduled to be completed in the spring; and Golf Eichenheim, in the Austrian Alps, due to be finished in the fall.

HILTON HEAD ISLAND, S.C. — The opening of Belfair's new East Course offers golfers the choice of putting on Crenshaw bentgrass or Bermudagrass.

The new Tom Fazio-designed East Course, a par-71 layout measuring 6,959 yards from the championship tees, features Crenshaw bentgrass putting surfaces. Although the course will be open for limited play through the spring, the East Course will be closed through the summer in preparation for a fall grand opening.

At Belfair, choose bent or Bermuda

"We still have some work to be done before the course is completely ready. But most of that work needs to be done during the summer growing season," said Belfair Director of Golf Keith Goodaker. "So in the meantime, we want to give our members a chance to test out the East Course."

Over the summer, the Bermudagrass that carpets tees, fairways and rough will

be grown in and native grasses, including Bahia, sweetgrass and spartina, will be planted. Ten holes on the East Course were open for limited play last summer, while construction was under way on the remaining eight holes. Therefore, for virtually half of the course, the coming summer will be the first growing season for the Bermuda-grass. This explains the planned summer closing and the fall grand opening.

The original West Course at Belfair, also a Fazio design but with Tifward Bermudagrass greens, opened in 1996.

In designing the East Course, Fazio created a traditional style course that encourages walking.

Describing it, Fazio said: "The style is a combination of looks, but the overall result is distinctive. There is some Pine Valley in it; there's some Wild Dunes in it. There's some Jupiter Hills in it, some Shinnecock, some old classic style. But when you put it all together, it really has its own style."

McFarlane and Garl

Continued from previous page

and site. You look at the constraints you have, what grows in that area, and what type of course fits that environment. It's a matter of absorbing all the information from all the sites and working your style onto that canvas."

Hiring McFarlane, Garl said, came as a response to developers.

"Constantly, clients keep talking about the Scottish influence," he said. "It looks simple, but to do it correctly is extremely difficult. If you do it right, it looks great. If you don't, it looks terrible, and there's a fine line between the two."

"A lot of people say they have a Scottish design," Garl added. "But, personally, I think they miss the visual impact. Most people think 'Scottish' just means no trees. So if they get a piece of fairly flat ground with no trees, they say, 'We've got a Scottish golf course.' But it's the subtle nuances and also the feeling you get while you're there."

Asked if he thought he could duplicate that feel, Garl said, "We think if you get the right look — and landscape it properly, which is often greatly overlooked — we can duplicate it."

Meanwhile, Garl intends to "bring something to the table that nobody else can find in Great Britain: an American firm that has Scottish and American architects."

Having an architect in the office who lived there, he said, "we feel we have the upper hand for somebody who wants to hire an American firm. We have someone who has worked over there for years, knows the contractors, knows the environmental responsibilities, understands the customs, knows who are the best local shapers and contractors."

"Everybody talks about design being our business. But there is another side of it that is extremely important, and that is picking the right people to build it and getting the job done properly and on time. Steven has done that. Americans have no experience in doing it over there. Everyone who goes over there is reinventing the wheel."

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CADD-E-Shack making computer course design available to everyone

By PETER BLAIS

MANHATTAN, Kansas — With an increasing number of municipal, residential and commercial mixed-use golf projects requiring computer-aided design (CAD) drawings, a year-old Manhattan company called CADD-E-Shack Golf is filling a niche by offering architects and others in

the golf industry outsourced CAD technology.

Company founder and President Dave Relford has architects send in their drawings, complete with coffee stains, bread crumbs and red pencil marks.



Dave Relford

He inputs that information onto the computer, sends the plot file via electronic mail to a local print shop, and can often return the completed blueprints to the architect the same day. The architects mark up the

blueprints and the process is repeated until the final CAD drawings are generated.

"The architects don't have to ink drawings or put sticky backs down. Their comment is often how much time it saves them and frees them up to do other things," he said.

"Many architects don't want

to spend the money on [CAD] hardware or software, and you always have to hire someone to run the equipment, because these guys don't want to learn at 40, 50, 60 years of age. Sometimes the younger guys don't even want to mess with learning how to draw a line on the computer. That's what I do.

"You don't need a computer to design a golf course. But when it's required [by others] it's nice to have, and you might as well do it right. It's a luxury to have me on the team taking care of the little issues, plus there is a golfing mind and steward of the game behind the work."

Among the architects Relford has worked with are Baxter, Dye, Spann of Houston and Don Sechrest of Kansas City. Architect Kyle Phillips of Granite Bay, Calif., said he has discussed outsourcing his CAD work to CADD-E-Shack. The idea, Phillips said, makes sense for a relatively small firm like his, which doesn't have the resources to purchase the latest equipment, keep someone trained in its use and employ both an extra worker and the CAD equipment on a full-time basis. It would be similar to the outsourcing of irrigation design that many architects employ, he added.

"The CAD drawings are particularly useful on residential golf projects when you are interfacing with other engineers, architects and planners," Phillips said. "It's also useful on a project where you do a lot of earthmoving, like in Asia. You can see beforehand how much earth you'll have to move and contour in order to achieve the balance you're looking for."

Relford grew up in Kansas City, Mo., where he was first exposed to golf at the city's Hodge Park Municipal Golf Course, working as a range boy and green fee collector. He began reading books on course design and eventually settled on golf course architecture as his career path.

He earned a landscape architecture degree from Kansas State University in 1995, completing an internship with a landscape developer at Arnold Palmer-designed Dakota Dunes in Sioux City, Iowa, and a maintenance internship at Loch Lloyd in Kansas City. After graduation, he worked with contractor Landscapes Unlimited, helping to build Quarry Oaks in Lincoln, Neb. The next stop was Arthur Hills, where he helped get the Toledo, Ohio-based design firm computerized.

"They had one computer collecting dust in the corner," he re-

Continued on next page

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Continued from previous page

membered. "In my three years we got up to a network of 11 computers. We went from a hand-drawing to an almost completely computer-based drawing system."

In April 1998, Relford decided it was time to return home to Manhattan and started CADD-E-Shack with the idea that: "Computers and golf design really don't mesh together too well. It [computer design] really isn't the preferred method. I'm a big believer that the best way to design is by hand, even though I'm the computer guy. But I saw a niche. As the industry has grown, CAD construction documents have become a requirement. A lot of the one-man and two-man design firms, and even some of the larger groups, don't have computers.

"It's expensive. I've heard horror stories of architects spending hundreds of thousands of dollars on software, but never getting any support from it. It's a hassle. There aren't too many guys [like Relford] out there with a landscape, architecture, golf course and computer background."

But that situation is likely to change, and Relford is prepared for it. "CADD-E-Shack won't be around forever. As the younger crop of designers come up who are more comfortable with computers, they'll do more of this work themselves. Hopefully, by that time, I'll be designing more courses," said Relford, 27, who has continued to do design work, his first love, for some area courses.

"I interpolate the architects' [hand] design work into the computer. I want my computer designs to look just like their hand drawings. There is a talent in putting their work into the computer and being able to get the quantity take-offs [earthmoving numbers]. You can't just take a guy out of Auto-CAD school and have him apply it to the design of golf courses...I usually do it for \$10,000-12,000 per project and set up my billing like an irrigation contractor."

CADD-E-Shack also offers a three-dimensional imaging service, which allows a developer or potential customer to see the course before it's built. The architect provides the two-dimensional plans, Relford downloads the information into the computer and the computer produces a three-dimensional view.

The 3-D drawing provides a view from various points on the course or even a bird's-eye view above the course.

"It's a real nice device for a renovation project," Relford said. "Dallas Country Club is doing a three-hole renovation using this. We did perspectives from the

landing areas, tee boxes and right in front of the green. We mounted them on 24-by-36-inch foam boards, the club put them on easels in the clubhouse and the members got to know what the design of the hole was going to be before they played it."

The perspectives are usually one-day projects and cost about \$1,000.

Relford is working on a third product with a company that

I'm a big believer that the best way to design is by hand, even though I'm the computer guy. But I saw a niche. As the industry has grown, CAD construction documents have become a requirement.'

— Dave Relford

makes computer golf games simulating existing golf courses. "What I thought," he said, "was

if they can make those games with existing information, why couldn't they make them with

proposed information. We're about ready to do the first one now. It allows you to play your golf course on a computer screen, view it with 18-hole flybys and that way market it before it's even built. It's gotten a lot of great feedback."

Relford is trying to get the price down to about \$25,000 and thinks it will be a valuable tool for developers looking to market their golf course before it is built.

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Flat pipe revisited: larger is better

Continued from page 1
reported problems when they did not use the sock.

But, according to Rapp, "The flat pipe was not the problem.

The greens at Westwood Plateau, left, are California method, so pure sand is dumped at the edge of the green and pushed over the tile. Notice the tile is flat, and all of the grade stakes used to control depth of sand.

It was the perforation and/or soil mix."

Rapp also suggested covering the pipe with crushed stone, which has proven effective on several courses.

Meanwhile, the superintendent at the course believed to have first used flat pipe in its greens construction is a solid believer in the product, which

was actually developed to be installed vertically as highway edge drains.

"I must say, I was skeptical to start with," said Bruce Thrasher at Westwood Plateau in suburban Vancouver, B.C. "But I can say now, after watching these greens for six years, we have had no problem with it."

Indeed, Thrasher, who used 12-inch flat pipe on a nine-hole executive course and three-hole learning facility, said they "unequivocally" drain better than his 18-hole course with standard 6-inch round tile.

Thrasher said he initially had trouble because he had removed the sock, fearing it would seal up. "But we put the sock back on and it has worked fine," he said.

Westwood Plateau averages 8-3/4 to 10 feet of rain per year. "We can get a 4- or 5-inch rainfall overnight and these greens will stand up easily to it," Thrasher said.

Meanwhile, golf course architect Michael Hurdzan, who first adopted the flat pipe to a golf course at Westwood Plateau, acknowledged some problems with the thin-slitted type.

"We had 10 greens with fine-slit tile on one of our Columbus courses, and we noticed they were staying too moist," he said. "We dug out that tile and put in wide-slit tile with the sweat sock material. Now it's fine.

"We did five courses with flat pipe last year. Four had no problem whatsoever; one had a problem."

Andy Mottel, superintendent at Fieldstone Golf Club in Greenville, Del., where the greens were built last July, said he has experienced no problems with the flat tile.

Sand analysis is the key, he said, adding that very fine material could clog the fine-slit pipe. In his case, "getting to a larger percentage of medium sand and putting gravel on top of the pipe prevented clogging," he said.

Thrasher said he has built greens with a sand-peat mix on top of flat tile, "and they've performed just as well" as with pure sand.

Plus both superintendents noted a savings with the flat pipe. "Normally, you use 4 to 6 inches of subgrade and 4 inches of stone over the whole green," Mottel said. "We laid tiles flat and covered them 3/4 inch. So instead of 4 to 6 inches of material we used about 1 inch."

At Westwood Plateau, Thrasher reported "a dramatic savings, depending on what your sub-base is made up of."

"Ours was pretty much rock," he said, and trenching was not an option. It had to be built using an excavator.

Thrasher warned, however, that the sub-base configuration of the green must exactly follow

Continued on next page

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CIRCLE #145

Frontier, Robinson collaborate on Costa Rican 18

SAN JOSE, Costa Rica — Frontier Construction Co. has broken ground on an 18-hole championship golf course here at Los Suenos Resort, an ambitious development that will include golf, resort housing, marina and a 300-room Marriott hotel facility. The golf course has been laid out by architect Ted Robinson. Marriott Golf will manage the golf operation. The hotel and course are scheduled to open in November.

"We expect to be finished with course construction in July," explained Nick Scigliano, president Frontier Construction Co., based in Jones Mills, Pa. "We will oversee the project through grow-in, though Marriott will manage the turf development program and ultimately manage the course."

Ground-breaking at Los Suenos follows hard on the November opening of another exotic Frontier project, Coamo Springs Golf & Tennis Club in Coamo. Designed by Ferdinand Garbin, Coamo Springs G&TC is the centerpiece of an upscale resort development focused around Banos de Coamo, a natural 105-degree spring which draws tourists and health-conscious bathers from all over the world.

Frontier turned its first spade of dirt in Coamo in February 1998. Ten months, two hurricanes and three rows of irrigation later, this 18-hole desert-style layout was accommodating resort play. "Seed

selection was one of the reasons this course grew in so quickly," Scigliano said. "Most folks would use 419 sprigs in a climate like Coamo's, but the folks at Jacklin Seed Co. convinced us to use their new seeded Bermudagrass, Jackpot, which came in incredibly fast. It germinated in five to six days. The club was mowing

in two weeks."

Frontier installed a triple-row Rain Bird system at Coamo Springs while addressing several complicated irrigation issues in this semi-arid environment. For example, after locating an abundant water source — 15 feet below a dry river basin some 7,000 feet from the course — Scigliano

and his team dropped submersible pumps in each of two wells. Frontier then pumped the water more than a mile uphill to the uppermost irrigation pond, which sits 150 feet above the river bed. Frontier's three-tiered pond scheme features a fully automated supplementation system, meaning inadequate water levels in the lowermost lake trigger flow from the river basin to the uppermost lake.

"There are no green-sand suppliers in Puerto Rico, so we were obliged to create the greens mix from scratch," Scigliano said. "In same river basin, we drilled test holes and found material that, through screening and washing, met USGA (U.S. Golf Association) specifications. So that's what we did: We mined it, prescreened it, triple-washed it, and, after exhaustive testing and approvals, hauled it to the green sites."

Flat pipe

Continued from previous page
the top surface.

"With a 4-inch tile, you have 4 inches to play with. On a flat tile you have 1 inch," he said. "Your sub-base has to be compacted extremely well, and we paid strict attention to laser-shooting the subgrade."

For its part, ADS has pulled the sand-slotted, or thin-slotted, AdvanEDGE off the golf course market until it determines, scientifically, what was causing failures, according to Marketing Director Tony Radoszewski.

"Last summer we had a lack of performance in how the system was designed," he said. "What we believe is that the sand mixture used, although it seems to have been what was recommended, didn't work. Whether it was the particle size in the sand mix, we don't know. We took the conservative side and said because we don't know, and because we can't control the quality of the sand — a significant contributing factor to the success of the system — we are holding back sales of the sand-slotted AdvanEDGE."

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A REVIEW

2nd of Tillinghast troika a true winner

By MARK LESLIE

BASKING RIDGE, N.J. — Tilly's Trilogy: Part II, or better known as "Reminiscences of the Links," is out — and something to behold.

You may have read the history of golf through the eyes of an historian, or a golf writer. But here, through the efforts of three

members of Baltusrol Country Club, you can read it from the viewpoint of one of the great classic golf course architects: A.W. Tillinghast.

Here was a man who spanned continents ... and eras. He can write, on the one hand, of personalities who shaped the game ("One evening I sat with Old Tom Morris

in his little sitting room.") And, on the other hand, of the effect of golf balls on play ("I believe that the larger ball will bring back to the game the wrist shot and the more general playing of the cut. The playing of these was a delight to see in the old days...").

Here was a man who stood staunchly by the tradition of cad-

dies, little knowing that there would be few of them 50 years later — and declaring that young caddie Eddie Lowry brought Francis Ouimet the U.S. Open Championship and calling golfers to drink to this toast: "Fill your glasses, gentlemen, and pledge 'Our Caddies,' what would our golf be without them?" And a man who disapproved of some of the advances in the game, like "matched sets of irons

with closely catalogued degrees of loft of the faces" which, he said, "has made play more mechanical than of yore and consequently eliminated much of the versatility of the player himself."

Tillinghast expounds on the likes of "Andra" Kirkaldy, who in 1890 beat Willie Park 8 and 7 in a great match over four courses; "Sandy" Herd, British Open Champion and world record holder for aces at the time: 19 holes in one; and various great golfers of the Roaring Nineties through the 1920s.

And, in the end, he predicts some things about the game of golf, one of which I share here: "As one of the very early American players I have seen the game pass from the state of a fad of the red-coated few through a sturdy, healthy growth until it has become the most popular recreation of several million Americans. Ten years probably will find this host doubled in numbers, with the great majority of towns of 20,000 population supporting at least one course of its own, for the masses have taken golf into their lives and there it will remain as a vital factor of health and pleasure."

Anyone care to dispute that?

Publishers Bob Trebus and Rick and Stu Wolffe — all members of Tillinghast-designed Baltusrol Country Club — have laced this oversized, 160-page book with scores of historical photographs dating back into the 1800s and some paintings from the 1700s. Great stuff.

"We preserved a lot of the photographs taken from very, very old magazines on the verge of disintegration," Trebus said. "We were able to capture those photos and, through computer work, publish them."

"We spent a lot of time at Bethpage pulling their photos."

Because the book handles subject by subject in separate chapters, Trebus said: "You can read it in any order you want. The theme behind it is the history and growth of golf."

The three publishers started garnering the Tillinghast information while researching the 100-year history of Baltusrol.

"As we went through our old magazines," Trebus said, "we found a lot of articles by Tillinghast. Stu went through every issue of every golf magazine and pulled out all the Tillinghast articles. He wrote under other names, every month in *Golf Illustrated* and wrote freelance work."

Some golf clubs heard about their research and sent them photos from the Tillinghast era.

The temptation to publish the trilogy was too great. "Here we had a fellow who was an architect, journalist, photographer and player," Trebus said. "He was an incredible man, a pure genius in the world of golf. We wanted to put it so it wasn't lost to history."

The third book, "Gleanings from the Wayside," is due out at the end of 1999. It will deal with Tillinghast's recollections of his travels to different golf courses."



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Management firms and their courses

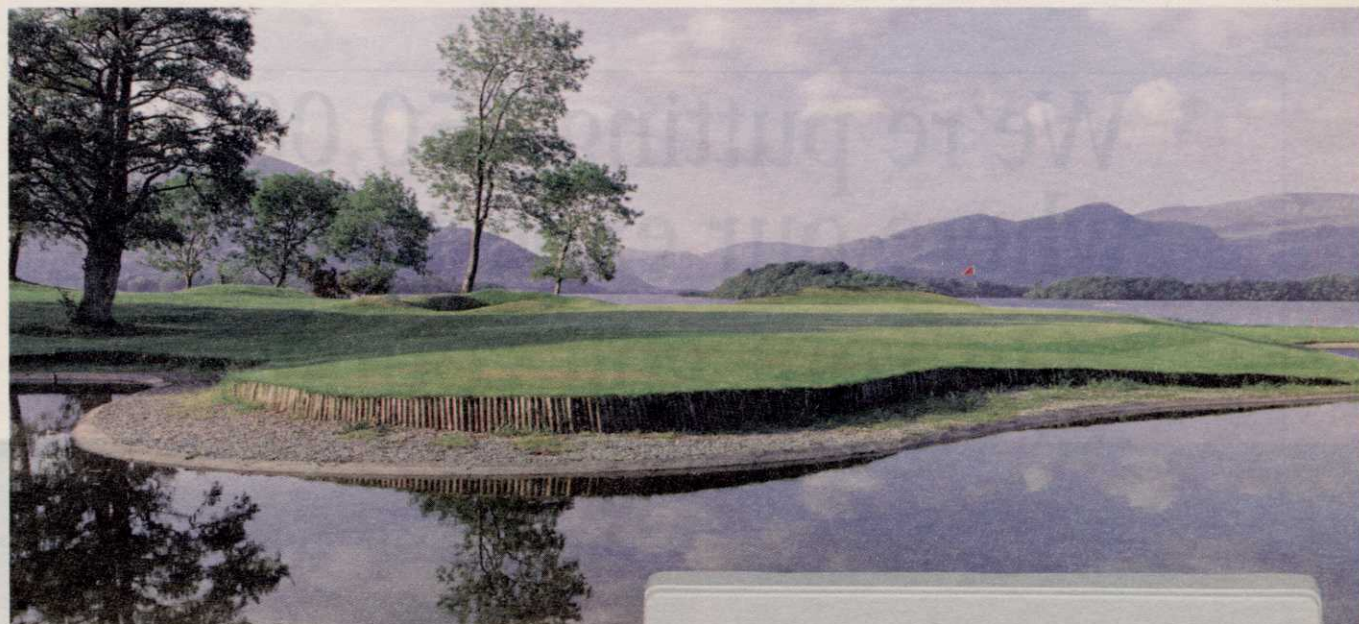
American ClubServ		
Cheval G&CC	Lutz	FL
American Golf Corp.		
Desert Lakes GC	Bullhead City	AZ
Tatum Ranch GC	Cave Creek	AZ
Kokopelli Golf Resort	Gilbert	AZ
Arrowhead CC	Glendale	AZ
Glen Lakes GC	Glendale	AZ
Legend at Arrowhead	Glendale	AZ
London Bridge GC	Lake Havasu	AZ
Superstition Springs	Mesa	AZ
Stonecreek GC	Paradise Valley	AZ
El Caro CC	Phoenix	AZ
Villa de Paz GC	Phoenix	AZ
Ancala CC	Scottsdale	AZ
Continental GC	Scottsdale	AZ
Aptos Seascape GC	Aptos	CA
Arcadia GC	Arcadia	CA
Heather Ridge CC	Aurora	CA
Tilden Park GC	Berkeley	CA
Chula Vista GC	Bonita	CA
Camarillo Springs GC	Camarillo	CA
Spanish Hills G&CC	Camarillo	CA
Dominguez GC	Carson	CA
Bidwell Park GC	Chico	CA
Canyon Oaks CC	Chico	CA
EastLake CC	Chula Vista	CA
Oakhurst CC	Clayton	CA
Dove Canyon CC	Dove City	CA
Escondido CC	Escondido	CA
David L. Baker Fountain	Valley	CA
Coyote Hills GC	Fullerton	CA
Fullerton GC	Fullerton	CA
Scholl Canyon GC	Glendale	CA
Knollwood GC	Granada Hills	CA
Meadowlark GC	Huntington Bch	CA
Sea Cliff CC	Huntington Bch	CA
Indian Wells GR	Indian Wells	CA
Rancho San Joaquin	Irvine	CA
La Mirada GC	La Mirada	CA
Lake Forest GC	Lake Forrest	CA
Lakewood CC& TCLakewood	Lakewood	CA
Micke Grove GL	Lodi	CA
El Dorado Park Muni	Long Beach	CA
Heartwell GC	Long Beach	CA
Recreation Park GC	Long Beach	CA
Skylinks Muni GC	Long Beach	CA
Chester Washington	Los Angeles	CA
Mountaingate CC	Los Angeles	CA
Westchester GC	Los Angeles	CA
Summitpoint GC	Milpitas	CA
Casta Del Sol GC	Mission Vejo	CA
National City GC	National City	CA
BlackLake GC	Nipomo	CA
BlackLake GR	Nipomo	CA
Oceanside GC	Oceanside	CA
Monterey CC	Palm Desert	CA
Palm Valley CC	Palm Desert	CA
Mesquite CC	Palm Springs	CA
Brookside GC	Pasadena	CA
Mountain Meadows	Pomona	CA
Los Verdes GC	Rancho Palos	CA
Tierra Oaks CC	Redding	CA
Franklin Canyon GC	Rodeo GC	CA
Mountain Shadows	Rohnert Park	CA
Bartley Cavanaugh	Sacramento	CA
Maloney/Land GC	Sacramento	CA
Mission Trails GC	San Diego	CA
Riverwalk GC	San Diego	CA
Tecolote Canyon GC	San Diego	CA
San Leandro GC	San Leandro	CA

American Golf Corp. (cont.)		
Santa Clara G&T	Santa Clara	CA
Wood Ranch GC	Simi Valley	CA
Wood Ranch GC	Simi Valley	CA
Skippack GC	Skippack	CA
Lomas Santa Fe CC	Solano Beach	CA
Lomas Santa Fe Exec	Solano Beach	CA
Lake Tahoe GC	S. Lake Tahoe	CA
Reserve/Spanos Park	Stockton	CA
ThornCreek GC	Thornton	CA
Sunset Hills CC	Thousand Oaks	CA
Upland Hills GC	Upland	CA
Vista Valencia CC	Valencia	CA
Yorba Linda GC	Yorba Linda	CA
Eagle GC	Broomfield	CO
Park Hill GC	Denver	CO
Applewood GC	Golden	CO
Arrowhead GC	Littleton	CO

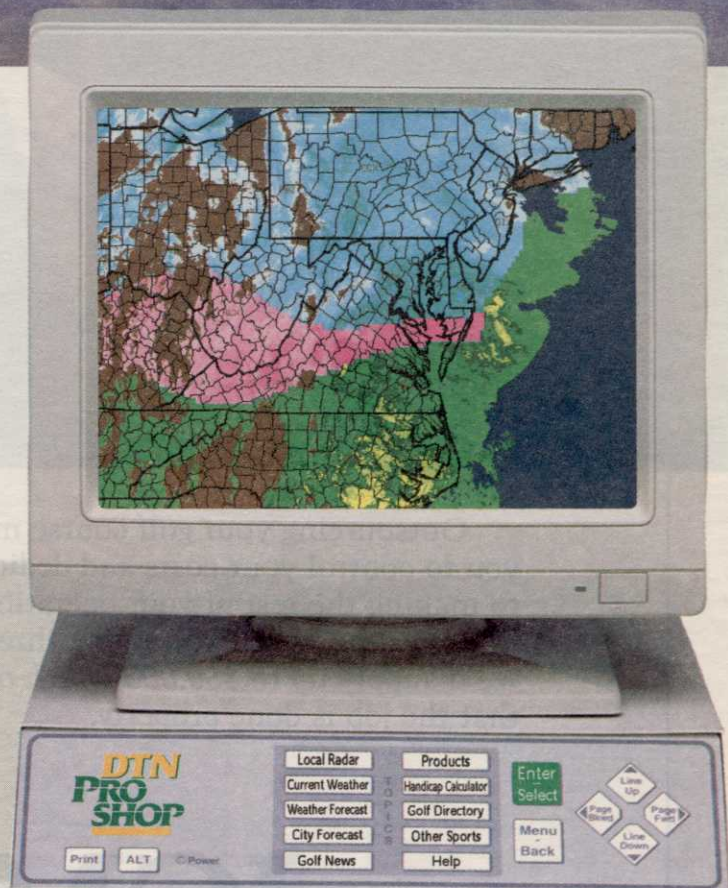
American Golf Corp. (cont.)		
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ThornCreek GC	Thornton	CO
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Keney GC	Hartford	CT
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Cottesmore Hotel	Crawley	ENG
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South Essex G&CC	Essex	ENG
Weald Park GC	Essex	ENG
Cams Hall Estate GC	Hampshire	ENG
Paultons Golf Centre	Hampshire	ENG
Mill Green GC	Hertfordshire	ENG
Cotgrave Place	Nottingham	ENG
Orpington	Orpington	ENG
Sunbury GC	Shepperton	ENG
Millford GC	Surrey	ENG
Pyrford GC	Surrey	ENG
Celebration GC	Celebration	FL
Arrowhead GC	Davie	FL
Baymeadows GC	Jacksonville	FL

American Golf Corp. (cont.)		
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Summerfield Cross.	Riverview	FL
Sabal Palm GC	Tamarac	FL
Crescent Oaks G&CC	Tarpon Springs	FL
Binks Forest GC	Wellington	FL
Brookstone CC	Acworth	GA
Alfred "Tup" Holmes	Atlanta	GA
Bobby Jones GC	Atlanta	GA
Brown's Mill GC	Atlanta	GA
North Fulton GC	Atlanta	GA
Goshen Plantation	Augusta	GA
River's Edge GC	Fayetteville	GA
Bradshaw Farm GC	Woodstock	GA
Koolau GC	Kaneohe	HI
Plantation GC	Boise	ID
GC of Illinois	Algonquin	IL
Eagle Brook CC	Geneva	IL
Mill Creek GC	Geneva	IL
Highland Park GC	Highland	IL
Fresh Meadow G&CC	Hillside	IL

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Dub's Dread GC	Kansas City	MO
Highlands Golf	Hutchinson	KS
Deer Creek GC	Overland Park	KS
Tallgrass CC	Wichita	KS
Shenandoah CC	Baton Rouge	LA
Hunt Valley GC	Hunt Valley	MD
West Winds GC	New Market	MD
Dunmaglas GC	Charlevoix	MI
Chandler Park	Detroit	MI
Palmer Park GC	Detroit	MI
Rouge Park GC	Detroit	MI
Rackham GC	Huntington	MI
Hilltop GC	Plymouth	MI
The Woodlands	Wayne	MI

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Majestic Oaks	Ham Lake	MN
Links/Northfork	Ramsey	MN
Columbia CC	Columbia	MO
Royal Meadows	Kansas City	MO
Forest Park GC	St. Louis	MO
St. Peters GC	St. Peters	MO
Carolina Shores	Calabash	NC
Revolution Park	Charlotte	NC
Charles T. Myers	Charlotte	NC
Pawtucket GC	Charlotte	NC
Renaissance Pk	Charlotte	NC
Reynolds Park	Winston-Salem	NC
Brigantine GL	Brigantine	NJ
Beaver Brook	Clinton	NJ
Rancocas GC	Willingboro	NJ
Paradise Hills	Albuquerque	NM
Tanoan CC	Albuquerque	NM

American Golf Corp. (cont.)

Taos CC	Rancho de Taos	NM
Sierra Nevada	Genoa	NV
Las Vegas Nat'l	Las Vegas	NV
Painted Desert	Las Vegas	NV
The Badlands	Las Vegas	NV
Wild Horse CC	Las Vegas	NV
Arrowcreek GC	Reno	NV
Clearview Park	Bayside Queens	NY
Pelham/Split Rk	Bronx	NY
Van Cortlandt	Bronx	NY
Dyker Beach GC	Brooklyn	NY
Mansion Ridge	Middletown	NY
Long Island GC	Riverhead	NY
South Shore GC	State Island	NY
La Tourette GC	Staten Island	NY
Silver Lake GC	Staten Island	NY
Fowler's Mill GC	Chesterfield	OH
Ivy Hills CC	Cincinnati	OH

American Golf Corp. (cont.)

Royal Oak CC	Cincinnati	OH
Oakhurst CC	Grove City	OH
Brandywine CC	Maumee	OH
Heatherwoode	Springboro	OH
Bent Tree CC	Sunbury	OH
Collins Park GC	Toledo	OH
Detwiler GC	Toledo	OH
Ottawa Park GC	Toledo	OH
White Hawk GC	Bixby	OK
GC of Oklahoma	Broken Arrow	OK
Meadowbrook	Broken Arrow	OK
The Trails	Norman	OK
Silverhorn GC	Oklahoma City	OK
Pumpkin Ridge	Cornelius	OR
Creekside GC	Salem	OR
Oregon GC	West Linn	OR
Gen. Washington	Audubon	PA
Hickory Heights	Bridgeville	PA

American Golf Corp. (cont.)

Golden Oaks CC	Fleetwood	PA
CC of Hershey	Hershey	PA
Hershey Hotel	Hershey	PA
Spring Creek GC	Hershey	PA
Shipyards GR	Hilton Head	SC
Port Royal GR	Hilton Head	SC
Stono Ferry	Hollywood	SC
River Oaks	Myrtle Beach	SC
Forrest Crossing	Franklin	TN
Gettysvuw CC	Knoxville	TN
Pine Creek GC	Mt. Juliet	TN
Maxwell Muni	Abilene	TX
Circle C GC	Austin	TX
Riverside GC	Austin	TX
Bryan GC	Bryan	TX
Riverchase GC	Coppell	TX
Longwood GC	Cypress	TX
Diamond Oaks	Fort Worth	TX
Woodhaven CC	Fort Worth	TX
Oakridge CC	Garland	TX
Berry Creek CC	Georgetown	TX
Great Southwest	Grand Prairie	TX
Riverside GC	Grand Prairie	TX
Bear Creek GW	Houston	TX
World Houston	Houston	TX
Lake Houston	Huffman	TX
Walden/LkHous.	Humble	TX
Twin Wells GC	Irving	TX
Willow Fork CC	Katy	TX
Eldorado CC	McKinney	TX
Mesquite Muni	Mesquite	TX
Bentwater CC	Montgomery	TX
Southwyck GC	Pearland	TX
Buffalo Creek	Rockwall	TX
Pecan Valley GC	San Antonio	TX
Silverhorn GC	San Antonio	TX
Club at Sonterra	San Antonio	TX
Sugar Creek CC	Sugar Land	TX
Chesapeake GC	Chesapeake	VA
Oceanview GC	Norfolk	VA
Reston GC	Reston	VA
Honey Bee GC	Virginia Beach	VA
Gleneagle GC	Arlington	WA
Lake Wilderness	Maple Valley	WA
Capitol City GC	Olympia	WA
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Bear Creek CC	Woodinville	WA

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River Oaks	Myrtle Beach	SC
Forrest Crossing	Franklin	TN
Gettysvuw CC	Knoxville	TN
Pine Creek GC	Mt. Juliet	TN
Maxwell Muni	Abilene	TX
Circle C GC	Austin	TX
Riverside GC	Austin	TX
Bryan GC	Bryan	TX
Riverchase GC	Coppell	TX
Longwood GC	Cypress	TX
Diamond Oaks	Fort Worth	TX
Woodhaven CC	Fort Worth	TX
Oakridge CC	Garland	TX
Berry Creek CC	Georgetown	TX
Great Southwest	Grand Prairie	TX
Riverside GC	Grand Prairie	TX
Bear Creek GW	Houston	TX
World Houston	Houston	TX
Lake Houston	Huffman	TX
Walden/LkHous.	Humble	TX
Twin Wells GC	Irving	TX
Willow Fork CC	Katy	TX
Eldorado CC	McKinney	TX
Mesquite Muni	Mesquite	TX
Bentwater CC	Montgomery	TX
Southwyck GC	Pearland	TX
Buffalo Creek	Rockwall	TX
Pecan Valley GC	San Antonio	TX
Silverhorn GC	San Antonio	TX
Club at Sonterra	San Antonio	TX
Sugar Creek CC	Sugar Land	TX
Chesapeake GC	Chesapeake	VA
Oceanview GC	Norfolk	VA
Reston GC	Reston	VA
Honey Bee GC	Virginia Beach	VA
Gleneagle GC	Arlington	WA
Lake Wilderness	Maple Valley	WA
Capitol City GC	Olympia	WA
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Bear Creek CC	Woodinville	WA

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Bayou Barriere	Belle Chase	LA
Crystal Lake GC	Lakeville	MN
Desert Rose GC	Las Vegas	NV
Las Vegas GC	Las Vegas	NV
Emerald River	Laughlin	NV
Corvallis CC	Corvallis	OR

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Sunday River GC	Newry	ME
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Sugarbush	Warren	VT

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Oronogue CC	Stratford	CT
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Braeburn GC	Wichita	KS
Crofton CC	Crofton	MD
Walden GC	Crofton	MD
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Minebrook GC	Hackettstown	NJ
Las Vegas Int'l	Las Vegas	NV
Fox Valley CC	Buffalo	NY
Brierwood CC	Hamburg	NY
Tan Tara CC	North Tonawanda	NY
Harbor Links GC	Port Washington	NY
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Kayak Point GC	Stanwood	WA
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Coral Creek GC	Oahu	HI
Eisenhower GC	Annapolis	MD
Baltimore RAGC	Baltimore	MD
Green Hill Y&CC	Quantico	MD
Chantilly Manor	Rising Sun	MD
Greystone GC	White Hall	MD
The Woodlands	Woodlawn	MD
Hunters Oak GC	Wye Mills	MD
Cranbury GC	Cranbury	NJ
White Oaks CC	Newfield	NJ
Eagle Ridge GC	Whiting	NJ
New York CC	Rockland Co.	NY
Tenn. Centennial	Oak Ridge	TN
Stoneleigh GC	Round Hill	VA

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Crooked Tree	Petoskey	MI
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RioColorado GC	Bay City	TX
Northcliffe	Cibolo	TX
Texas National	Willis	TX
Buena Vista Hospitality Group		
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PGA National	Palm Beach Gard.	FL
Rocky Gap GC	Rocky Gap St. Pk	MD
Puerto del Rey	San Juan	PR
Buffalo Golf Group		
Buffalo Ridge GC	Bonita	OK
Peoria Ridge	Miami	OK
Broken Arrow	Tulsa	OK
CCA Group		
Cypress Lakes	Sydney	Australia
Beijing Shun Fen	Beijing	China
Guangzhou Luh	Guangzhou	China
Macau G&CC	Macau	China
Shenyang Shenji	Shenyang	China
Berlin GC&R	Berlin	Germany
Sai Sha Golf	Hong Kong	Hong Kong
Bangalore GC	Bangalore	India
Emeralda G&CC	Jakarta	Indonesia
Gading Raya Pad	Jakarta	Indonesia
Imperial Club	Jakarta	Indonesia
Klub Cengkarang	Jakarta	Indonesia
Malta Int'l	Malta	Malta
Riviera G&CC	Manila	Philippines
Brocket Hall	London	ENG
Vietnam G&CC	Ho Chi Minh	Viet.
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Tayman Park GC	Healdsburg	CA
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Porter Valley CC	Northridge	CA
Desert Falls CC	Palm Springs	CA
Indian Wells CC	Palm Springs	CA
Mission Hills CC	Rancho Mirage	CA
Canyon Crest CC	Riverside	CA
Granite Bay GC	Sacramento	CA
Teal Bend GC	Sacramento	CA
Spring Valley	Victorville	CA
Shadowridge CC	Vista	CA
Aspen Glen CC	Aspen	CO
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Countryside CC	Clearwater	FL
DeBary CC	DeBary	FL
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Juniata Muni	Philadelphia	PA
Walnut Lane	Philadelphia	PA
Treesdale G&CC	Pittsburgh	PA
Orchard G&CC	Cavite	PHIL
Mt. Edgecomb	Durban	S.AFR
Silver Lakes CC	Pretoria	S.AFR
Woodside Plant.	Aiken	SC
Pebble Creek CC	Greenville	SC
CC/Hilton Head	Hilton Head	SC
GC at Indigo Run	Hilton Head	SC
Golden Bear	Hilton Head	SC
Snee Farm CC	Mt. Pleasant	SC
Three Ridges GC	Knoxville	TN
Shady Valley CC	Arlington	TX
Lost Creek CC	Austin	TX
River Place CC	Austin	TX
Westwood CC	Bellaire	TX
Oakmont CC	Corinth	TX
Padre Isles CC	Corpus Christi	TX
Brookhaven CC	Dallas	TX
Canyon Creek	Dallas	TX

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Bay Oaks CC	Houston	TX
Clear Creek	Houston	TX
Clear Lake	Houston	TX
Hearthstone CC	Houston	TX
Quail Valley CC	Houston	TX
Falcon Point	Katy	TX
Kingwood CC	Kingwood	TX
Kingwood Cove	Kingwood	TX
Las Colinas CC	Las Colinas	TX
Walnut Creek	Mansfield	TX
Cimmarron CC	Mission	TX

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Timarron CC	Southlake	TX
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River Creek	Leesburg	VA
Clubhaus PLC		
Aylesbury Park	Aylesbury	ENG
Meyrick Park	Bournemouth	ENG
Chesfield Downs	Gravelly	ENG
Kizels GC	Hildenborough	ENG
The Fox Club	London	ENG
Tytherington	Macclesfield	ENG

Clubhaus PLC (cont.)		
Three Rivers	Purleigh	ENG
Castle Royale	Reading	ENG
Stapleford Abb.	Romford	ENG
Seady Mill GC	Straffordshire	ENG
Duke's Dane	Surrey	ENG
Warwickshire	Warwickshire	ENG
Benton Hall	Witham	ENG
Foret Montpensr	Vichy	FRA
Golfplatz Trages	Hofgut Trages	GER
Golfclub Schloss	Nippenburg	GER
Goldplat Tutzing	Tutzing	GER
El Bosque Valencia		SPA
ClubLink		
Heron Point GL	Ancaster	ONT
Aurora G&HC	Aurora	ONT
GreyHawk GC	Cumberland	ONT
Kanata G&CC	Kanata	ONT
King Valley GC	King City	ONT

ClubLink (cont.)		
Lk Joseph Club	Lake Joseph	ONT
Greystone GC	Milton	ONT
Glen Abbey GC	Oakville	ONT
Cherry Downs	Pickering	ONT
Canterbury	Port Perry	ONT
DiamondBack	Richmond Hill	ONT
Emerald Hills	Stouffville	ONT
Cedarbrook GC	Ste-Sophie	QUE
Cobblestone Golf Group		
Red Mt. Ranch	Mesa	AZ
Ahwatukee CC	Phoenix	AZ
Foothills GC	Phoenix	AZ
Lks/Ahwatukee	Phoenix	AZ
Eagle Crest GC	Escondido	CA
Vineyard	Escondido	CA
El Camino CC	Oceanside	CA
Morgan Run	Rancho Santa Fe	CA

Continued on next page

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Cobblestone Golf Group (cont.)

Carmel Ranch	San Diego	CA
Redhawk GC	Temecula	CA
Deercreek CC	Jacksonville	FL
Remington GC	Kissimmee	FL
Sabal Point CC	Longwood	FL
East Lk Woodlnd	Tampa	FL
Trophy /Atlanta	Alpharetta	GA
Trop./Apalachee	Dacula	GA
Trop./Gwinnett	Snellville	GA
Eagle's Landing	Stockbridge	GA
Oak Valley GC	Advance	NC
Lochmere GC	Cary	NC
The Neuse GC	Clayton	NC
Currituck GC	Corrolla	NC
Devil's Ridge GC	Holly Springs	NC
Nags Head GL	Nags Head	NC
Lost Creek GC	Aledo	TX
Clubs Lakeway	Austin	TX

Cobblestone Golf Group (cont.)

The Hills CC	Austin	TX
Woodcrest CC	Grand Prairie	TX
Stoneridge Rnch	McKinney	TX
Los Rios CC	Plano	TX
Ridgeview Ranch	Plano	TX
Pecan Grove	Richmond	TX
Woodlake CC	San Antonio	TX
Sweetwater CC	Sugarland	TX
Trophy Club	Trophy Club	TX
Thorn tree CC	Wintergreen	TX
Virginia Oaks	Gainesville	VA
Brandermill CC	Midlothian	VA
Kiskiack GC	Williamsburg	VA

Continental Golf Corp.

Albert Lea GC	Albert Lea	MN
Pine Meadows	Brainerd	MN
Prestwick GC	St. Paul	MN
Eagle Creek GC	Willmar	MN

Continental Golf Corp. (cont.)

Big Creek GC	Memphis	TN
Corcoran-Jennison Hospitality Co.		
Ocean Edge	Brewster	MA
Olde Scot Links	Bridgewater	MA
Glen Ellen CC	Millis	MA
Graylock Nat'l	North Adams	MA

CourseCo Inc.

Crystal Springs	Burlingame	CA
Deep Cliff GC	Cupertino	CA
Eureka GC	Eureka	CA
Palm Lakes GC	Fresno	CA
Riverside GC	Fresno	CA
Mather GC	Sacramento	CA

Crown Golf Properties

Longbow GC	Mesa	AZ
Wildfire GC	Scottsdale	AZ
Gale Ranch	Milipitas	CA
Eagle Ridge GC	Milipitas	CA

Crown Golf Properties (cont.)

Ojai Valley Inn	Ojai	CA
Empire Lakes	R. Cucamonga	CA
Tijeras Creek	Santa Margarita	CA
Wildhawk GC	Sacramento	CA
Tustin Ranch GC	Tustin	CA
River Valley	Carbondale	CO
Snowmass Lodge	Snowmass Vill.	CO
Bardmoor GC	Largo	FL
Bayou Club	Largo	FL
Stonebridge CC	Aurora	IL
Settler's Hill GC	Batavia	IL
Heather Ridge	Cumee	IL
Glenwoodie GC	Glenwoodie	IL
So. Mountain GC	Salt Lake City	UT
Rivers Bend	Chester	VA
Highland Spgs	Richmond	VA
Blackhawk GC	Janesville	WI
New Berlin Hills	New Berlin	WI

Dakota Golf Management

Elmwood GC	Sioux Falls	SD
Kuehn Park GC	Sioux Falls	SD
Prairie Green GC	Sioux Falls	SD

Del Webb Corp.

Anthem CC	Phoenix	AZ
Sun City Grand	Phoenix	AZ
Sun City West	Phoenix	AZ
Sun City Tucson	Tucson	AZ
SC Palm Desert	Palm Springs	CA
SC Roseville	Roseville	CA
Spruce Creek CC	Ocala	FL
Sun City Huntley	Huntley	IL
Anthem CC	Henderson	NV
Sun City Anthem	Henderson	NV
SC MacDonal	Las Vegas	NV
SC Summerlin	Las Vegas	NV
SC Hilton Head	Hilton Head	SC
SC Georgetown	Georgetown	TX

Destination Hotels & Resorts

Inverness Hotel	Englewood	CO
Palm Coast Res.	Palm Coast	FL
Sunriver Resort	Sunriver	OR
Wild Dunes	Isle of Palms	SC

Diamond Players Club

DPC at Clermont	Clermont	FL
Sweetwater CC	Orlando	FL
Wekiva GC	Orlando	FL

Eagle Golf Services

Cottonwood GC	DeSoto	MO
Lakewood GC	Fenton	MO
Normandie GC	St. Louis	MO
Quail Creek	St. Louis	MO
The Cape	Wilmington	NC

Empire Golf Inc.

Ancil Hoffman	Sacramento	CA
Cherry Island	Sacramento	CA
Sonoma FgdsGC	Santa Rosa	CA
La Contenta GC	Valley Springs	CA

Environmental Golf

Estrella Mt.	Goodyear	AZ
Alhambra Muni	Alhambra	CA
RiverLakes Ran.	Bakersfield	CA
DeBell GC	Burbank	CA
Sterling Hills GC	Camarillo	CA
Canyon Lake CC	Canyon Lake	CA
Glen Annie GC	Goleta	CA
Silver Lakes CC	Helendale	CA
Birkdale GC	Huntersville	CA
Westridge GC	LaHabra	CA
Creekside GC	Modesto	CA
Dryden Park GC	Modesto	CA
Municipal GC	Modesto	CA
Back Bay	Newport Beach	CA
Diamond Oaks	Roseville	CA
Woodcreek GC	Roseville	CA
Champion GL	Sacramento	CA
Bernardo Hgts.	San Diego	CA
Sandpiper GC	Santa Barbara	CA
Tracy G&CC	Tracy	CA
Poinciana CC	Lake Worth	FL
Rolling Hills GC	Longwood	FL
Cross Creek GC	Atlanta	GA
Cherokee Run	Conyers	GA
Deer Creek GR	Davenport	IA
Fieldstone GC	Auburn Hills	MI
Lakes of Taylor	Taylor	MI
Houndslake CC	Aiken	SC
Oyster Reef GC	Hilton Head	SC

Evergreen Alliance Golf Ltd.

San Geronimo	San Geronimo	CA
Stanford Univ.	Stanford	CA
Bueneventura	Ventura	CA
Olivas Park GC	Ventura	CA
Mira Vista GC	Denver	CO
Appletree GC	Fountain	CO
Coal Creek GC	Louisville	CO
Canterberry GC	Parker	CO
Amana Colonies	Amana	IA
Shoreline GC	Carter Lake	IA
Bos Landen GC	Pella	IA
Ironhorse GC	Leawood	KS
Giants Ridge GC	Biwabik	MN
Adams Pointe	Blue Springs	MO
Pevely Farm GC	Crescent	MO
Quarry Oaks GC	Axhland	NE
Tregaron GC	BelleVue	NE
Champions Club	Omaha	NE
Knolls GC	Omaha	NE
Pacific Springs	Omaha	NE
Riverside GC	Austin	TX
Cross Timbers	Azle	TX
Emerald Springs	El Paso	TX
Painted Dunes	El Paso	TX
Lago Vista GC	Lago Vista	TX
Lake Park GC	Lewisville	TX
Iron Horse GC	No. Richland Hills	TX
Sammons Park	Temple	TX
Lake Park	Sandy	UT

Family Golf Center

Mesa FGC	Mesa	AZ
Rio Salado FGC	Tempe	AZ
Tucson FGC	Tucson	AZ
Carlsbad FGC	Carlsbad	CA
Colo. Spgs FGC	Colorado Springs	CO
Lakes/El Segund	El Segundo	CA
Elk Grove FGC	Elk Grove	CA
Encino/Balboa	Encino	CA
Gremont FGC	Fremont	CA
Gavilan GC	Gilroy	CA
Palm Royale	La Quinta	CA
Golden Bear GC	Moreno Valley	CA
Palm Desert	Palm Desert	CA
San Bruno FGC	San Bruno	CA
San Diego FGC	San Diego	CA
South San Diego	San Diego	CA
Pin High GC	San Jose	CA
Shelton FGC	Shelton	CA
Suisun FGC	Suisun	CA
Westminster	Westminster	CA
Calgary Eagle.	Calgary	ALB
Douglasdale	Calgary	ALB
Markham FGC	Markham	ONT
Eaglequest FGC	Thunder Bay	ONT
Eaglequest FGC	Vaughan	ONT
Kennedy FGC	Aurora	CO
Overland FGC	Denver	CO

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Family Golf Center (cont.)

Denver FGC	Englewood	CO
Denver Sp. Dm	Englewood	CO
Evergreen FGC	Evergreen	CO
GB North Lake	Lake Park	FL
Margate FGC	Margate	FL
GB/Cypress Ck	N. Ft. Lauderdale	FL
Stuart FGC	Stuart	FL
W. Palm FGC	W. Palm Beach	FL
Peachtree FGC	Duluth	GA
Alpharetta FGC	Roswell	GA
Illinois FGC	Chicago	IL
Cantera FGC	Warrenville	IL
Timber Ridge		KS
Over. Park FGC	Overland Park	KS
Wichita FGC	Wichita	KS
Carver FGC	Carver	MA
Easton FGC	S. Easton	MA
Trotters Glen		MD
GB@ College Pk	College Park	MD
Glen Burnie FGC	Glen Burnie	MD
GB @ Oasis	Plymouth	MI
GB @ Royal Oak	Royal Oak	MI
St. Louis FGC	St. Louis	MO
FGC @ Raleigh	Raleigh	NC
Sports Plus	Raleigh	NC
Flemington FGC	Flemington	NJ
Darlington FGC	Mahwah	NJ
Flanders FGC	Mt. Olive	NJ
GB/Toms River	Toms River	NJ
GB/Willowbrook	Wayne	NJ
FGC/Commack	Commack	NY
GB@ Alley Pond	Douglastown	NY
GB/Greenburgh	Elmsford	NY
GB @ Skydrive	Farmingdale	NY
Ponds FGC	Lake Grove	NY
GB @ Syracuse	Liverpool	NY
Yorktown FGC	Mohegan Lake	NY
FGC @ Utica	New Hartford	NY
NYC FGC	New York	NY
Hiland FGC	Queensbury	NY
Randall's Island	Randall's Island	NY
GB @ Rochester	Rochester	NY
Rocky Point	Rocky Point	NY
Rocky Point FGC	Rocky Point	NY
GB/Caddyshack	Williamsville	NY
Cincinnati FGC	Cincinnati	OH
GB @ Rollandia	Dayton	OH
Spots Plus	Evendale	OH
Cincinnati FGC	Maineville	OH
Valley View FGC	Valley View	OH
GB @ Polaris	Westerville	OH
Whitehall FGC	Whitehall	OH
Golf Dome	Thunder Bay	ONT
Vaughn GC	Toronto	ONT
GB @ Sunset	Beaverton	OR
82nd Ave. Range	Portland	OR
GB @ McDain	Monroeville	PA
GB @ Cool Spgs	Pittsburgh	PA
S'hampton FGC	Southampton	PA
Carolina Springs	Fountain Inn	SC
Greenville FGC	Greenville	SC
Pelham FGC	Greenville	SC
Arlington FGC	Arlington	TX
Austin FGC	Austin	TX
GB @ Highlands	Carrollton	TX
Dallas FGC	Dallas	TX
Ft. Worth FGC	Fort Worth	TX
FGC 820 Loop	Ft. Worth	TX
Houston FGC	Houston	TX
Westheimer FGC	Houston	TX
Kingwood FGC	Kingwood	TX
Panther Springs	San Antonio	TX
Richmond FGC	Glen Allen	VA
Leesburg FGC	Leesburg	VA
Indian River FGC	Virginia Beach	VA
Va. Beach FGC	Virginia Beach	VA
Kent Family FGC	Kent	WA
Lacey FGC	Olympia	WA
Interbay FGC	Seattle	WA
Tacoma FGC	Tacoma	WA
Tumwater FGC	Tumwater	WA
Milwaukee FGC	Milwaukee	WI

Golf Communities of America

Hillcrest	Clermont	FL
Pelican Strand	Naples	FL
The Pines GC	Orange City	FL
Wedgfield	Orlando	FL
Cutter Sound	Palm City	FL
The Plantation	Pinehurst	NC
NorthShore CC	Portland	TX
Lakes/Arlington	Tarrant Co.	TX
Red Hawk Int'l	St. George	UT

Golf Management Group Inc.

Bluegrass Y&CC	Hendersonville	TN
Country Hills GC	Hendersonville	TN
Old Hickory CC	Nashville	TN
Ravenwood Club	Nashville	TN

Golf Resources Inc.

Bridlewood GC	Flower Mound	TX
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Golf Services Group

Rio La Paz	Nicolaus	CA
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Golf Services Group (cont.)

Harrison St. Pk.	Chattanooga	TN
Cumberland Pk	Crossville	TN
Chickasaw Pk.	Jackson	TN
RiverWatch GC	Smithville	TN
Tims Ford Pk.	Winchester	TN
Houstonian CC	Houston	TX
Josey Ranch	Houston	TX

Golf Trust of America

Woodlands	Gulf Shores	AL
Palm Desert CC	Palm Desert	CA
Sandpiper	Santa Barbara	CA
Sweetwater CC	Apopka	FL
Cypress Creek	Boynton	FL
Polo Trace	Boynton Beach	FL
Silverthorn CC	Brooksville	FL
Bonaventure	Ft. Lauderdale	FL
Wekiva GC	Longwood	FL
Black Bear	Orlando	FL

Golf Trust of America (cont.)

Innisbrook	Tampa	FL
Lost Oaks	Tampa	FL
Emerald Dunes	W. Palm Beach	FL
Eagle Watch	Atlanta	GA
Olde Atlanta	Atlanta	GA
Eagle Ridge	Galena	IL
Club of Country	Overland Park	KS
Persimmon Rdg	Louisville	KY
Mystic Creek	Dearborn	MI
Brentwood	White Lake	MI
Osage Nat'l	Lake Ozarks	MO
Oyster Bay	Sunset Beach	NC
Tiburton GC	Omaha	NE
Tierra del Sol CC	Abuquerque	NM
Raintree CC	Akron	OH
Cooks Creek GC	Asheville	OH
Ohio Prestwick	Uniontown	OH
Wildewood CC	Columbia	SC

Wood Crk Farms	Columbia	SC
Heathland	Myrtle Beach	SC
Moorland	Myrtle Beach	SC
Parkland	Myrtle Beach	SC
Heritage Club	Pawleys Island	SC
Northgate CC	Houston	TX
Royal New Kent	Providence Forge	VA
Stonehouse GC	Williamsburg	VA

GolfSouth

The Links GC	Hudson	FL
Sandpiper GC	Lakeland	FL
CC of Mt. Dora	Mt. Dora	FL
Ekana GC	Oviedo	FL
Southland GC	Stone Mountain	GA
River Downs GC	Finksburg	MD
Wedgewood GC	Olive Branch	MS
Beacon Ridge	Pinehurst	NC

Continued on next page



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GolfSouth (cont.)

Wake Forest	Raleigh	NC
Northgreen CC	Rocky Mount	NC
Princeton Md	Wss Plainsboro	NJ
Pleasant Valley	Fairfax Co.	VA
Lee's Hill GC	Fredericksburg	VA
South Riding GC	Loudoun Co.	VA
TBD	Northern Area	VA
Highlands GC	Richmond	VA
Cypress Creek	Smithfield	VA

Gotham Golf Partners (cont.)

Sapphire Mt.	Cashiers	NC
Wild Oaks GC	Salem	NJ
Maple Ridge GC	Sewell	NJ
Edgewood Pines	Drums	PA
Greencastle Grns	Greencastle	PA
Fox Hollow GC	Quakertown	PA
Honey Run GC	York	PA
Yorktowne GC	York	PA
Fairfax Nat'l GC	Centreville	VA

Granite Golf Group (cont.)

Lone Palm	Lakeland	FL
Shalamar Creek	Lakeland	FL
Club Eaglebrook	Lakeland	FL
Panama CC	Lynn Haven	FL
Prestwick GC	Ormond Beach	FL
GC/Cypress Hd	Port Orange	FL
Spruce Creek CC	Port Orange	FL
Club of Country	Louisburg	KS
Persimmon Rdg	Louisville	KY
Tunica/Biloxi	Martinsville	LA
Cramer Mt.	Cramerton	NC
Whispering Wds	Whispering Pines	NC
Tiburon GC	Omaha	NE
Royce Brook CC	Somerville	NJ
Village Club	Sands Point	NY
Westbrook CC	Mansfield	OH
Great Bear	Shawnee on Del.	PA
Cookeville CC	Cookeville	TN
Colonial CC	Memphis	TN

Granite Golf Group (cont.)

Ridgeway CC	Memphis	TN
Olympia Hills	Universal City	TX

Greenlinks

CC of Franklin	Franklin	TN
Old Natchez CC	Franklin	TN

H. G. Properties LLC

Bear Slide	Cicero	IN
Twin Bridges GC	Danville	IN
Ironhorse GC	Logansport	IN
Stonehenge GC	Warsaw	IN

Hyatt Hotels Corp.

Regency Aruba	Aruba	Carib.
Regency GC	Grand Cayman	Carib.
Lake Las Vegas	Las Vegas	NV
Dorado Bch	Dorado	PR
Regency	Dorado	PR
Regency Dallas	Ft. Worth	TX
Regency Hill	San Antonio	TX

IMG Real Estate Services

Chongqing	Chongqing	China
Tianma CC	Shanghai	China
DLF Resort		India
Senayan GC	Jakarta	Indonesia
Bali Nirwana	Tanah Lot	Indonesia
Bangkok GC	Patumthani	Thai.
Dalat Palace GC	Dalat	Vietnam
Ocean Dunes	Phan Thiet	Vietnam

In Celebration Golf Management

Meadowbrook	Gilbert	AZ
The Legacy GC	Phoenix	AZ
Ariz. Traditions	Surprise	AZ
Coyote Lakes	Surprise	AZ

International Golf Group

Wampanoag GC	Hartford	CT
Zephyr Springs	Tampa	FL
Southerness GC	Atlanta	GA
Persimmon Rdg	Louisville	KY
Radisson Greens	Syracuse	NY
Pocasset CC	Portsmouth	RI

International Golf Maintenance

Warner Springs	Warner Springs	CA
Brooksville GCC	Brooksville	FL
Pelican Bay	Daytona Beach	FL
Pelican Bay No.	Daytona Beach	FL
Pelican Bay So.	Daytona Beach	FL
Dunedin CC	Dunedin	FL
Golfview G&R	Ft. Myers	FL
The Hideaway	Ft. Myers	FL
SunAir CC	Haines City	FL
Bella Vista GYC	Howey-In-Hills	FL
Kissimmee GC	Kissimmee	FL
Poinciana G&R	Kissimmee	FL
Highland Fairwy	Lakeland	FL
Admiral Lehigh	Lehigh Acres	FL
Mirror Lakes GC	Lehigh Acres	FL
The Habitat	Melbourne	FL
Aquarina GC	Melbourne Beach	FL
The Savannahs	Merritt Island	FL
Miami Spgs GC	Miami Springs	FL
The Ravines	Middleburg	FL
Arrowhead@HG	Naples	FL
Palatka GC	Palatka	FL
Maple Leaf GC	Port Charlotte	FL
Barefoot Bay	Sebastian	FL
Tarpon Spgs GC	Tarpon Springs	FL
Lakes/Sandridge	Vero Beach	FL
Viera East GC	Viera	FL
Okeeheelee GC	West Palm Beach	FL
Blueberry Plant.	Alma	GA
Newnan CC	Newnan	GA
Valdosta CC	Valdosta	GA
Widow's Walk	Scituate	MA
Glenwood CC	Old Bridge	NJ
Battleground CC	Tennent	NJ

Intrawest

Raven/So. Mtn	Phoenix	AZ
Raven/Sabino	Tucson	AZ
Greywolf	Panorama	BC
Sierra Satar GC	Mammoth Lakes	CA
Copper Crk GC	Copper Mountain	CO
Eagles Nest GC	Silverthorn	CO
Sandestin Resort	Destin	FL
Mont St. Marie	Ottawa	ONT
Mont Ste. Marie	Mont Ste. Marie	QUE
Le Geant/Diable	Mt. Tremblant	QUE
Stratton Mtn CC	Stratton	VT
Hawthorne Vily	Snowshoe	W.VA

IRI Golf Group

Elm Grove GC	Lubbock	TX
The Shores CC	Rockwall	TX
Columbia Pointe	Richland	WA

ISS Golf Services

Heather GC	Brooksville	FL
Cove Cay GC	Clearwater	FL
George Bagby	Ft. Gaines	FL
Ironwood GC	Gainesville	FL
Harbor Hills CC	Lady Lake	FL
Pennbrooke Fair.	Leesburg	FL
Lake Diamond	Ocala	FL
Pompano Muni	Pompano Beach	FL
Savanna Club	Port St. Lucie	FL
Hard Labor Crk	Rutledge	FL
Bobby Jones GC	Sarasota	FL
Sebastian GC	Sebastian	FL
Ponce de Leon	St. Augustine	FL
Isla del Sol YCC	St. Petersburg	FL
Zellwood Station	Zellwood	FL
Georgia Veteran	Cordele	GA

Jemsek Golf

Cog Hill CC	Lemont	IL
Pine Meadow GC	Mundelin	IL
St. Andrews CC	W. Chicago	IL

John Jacobs Group

San Ignacio GC	Green Valley	AZ
Painted Mtn	Mesa	AZ
Coyote Ridge	Peoria	AZ
Hillcrest GC	Sun City West	AZ

Kemper Sports Management

Desert Willow	Palm Desert	CA
Hidden Valley	Riverside	CA
Shady Lawn GC	Beecher	IL
Columbus Park	Chicago	IL
Diversey Range	Chicago	IL
Jackson Range	Chicago	IL
Jackson Park GC	Chicago	IL
Robert Black GC	Chicago	IL
South Shore GC	Chicago	IL
Sydney Marovitz	Chicago	IL
Kemper Lakes	Long Grove	IL
Royal Melbourne	Long Grove	IL
Vernon Hills GC	Vernon Hills	IL
Water's Edge GC	Worth	IL
Falcon Ridge GC	Lenexa	KS
Timbers at Troy	Howard County	MD
Holly Hills CC	Ijamsville	MD
Marlton GC	Prince Geo. Co.	MD
Whiskey Creek	Urbana	MD
Eagle Knoll GC	Hartsburg	MO
Rockwood GC	Independence	MO
Avon Field GC	Cincinnati	OH
California GC	Cincinnati	OH
Dunham GC	Cincinnati	OH
Glenview GC	Cincinnati	OH
Neumann GC	Cincinnati	OH
Reeves GC	Cincinnati	OH
Woodland GC	Cincinnati	OH

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Kemper Sports Management (cont.)
 PipeSton/Mound Miamisburg OH
 Bandon Dunes Bandon OR
 Crowfield Golf Goose Creek SC
 PineForest CC Sumerville SC
 GC of W. Va. Waverly WV

Kirchdorfer & Cunningham
 Hidden Creek Sellersburg IN
 MayWood GC Bardstown KY
 Bull at Boone's Lexington KY

KollStar
 Port Charlotte Port Charlotte FL
 Eagle Ridge GC Fort Myers FL
 Hibiscus GC Naples FL
 Metrowest GC Orlando FL
 Rolling Green Sarasota FL
 Sarasota GC Sarasota FL
 Sunrise GC Sarasota FL
 The Tides GC Seminole FL
 Cabo del Sol Los Cabos MEX
 Palmilla GC Los Cabos MEX
 Houston Oaks Houston TX

KSL Fairways
 Indigo Lakes GC Daytona Beach FL
 Tiger Point Gulf Breeze FL
 Club/Hidden Cr. Navarre FL
 Scenic Hills CC Pensacola FL
 Walden Lake Plant City FL
 Shalimar Pointe Shalimar FL
 Pebble Creek Tampa FL
 Wellington CC Wellington FL
 Tantallon CC Ft. Washington MD
 Patuxent Greens Laurel MD
 Marlborough CC Upper Marlboro MD
 Monroe Valley Jonestown PA
 Memphis Oaks Memphis TN
 Birkdale G&CC Chesterfield VA
 Montclair CC Dumfries VA
 Gauntlet/Curtis Fredericksburg VA
 Kiln Creek Newport News VA
 Prince William Nokesville VA
 Countryside GC Roanoke VA
 Broad Bay CC Virginia Beach VA
 Silver Spring CC Menomonee Falls WI
 Mequon CC Mequon WI
 Willow Run GC Pewaukee WI
 Lake Windsor Windsor WI

KSL Recreation
 LaQuinta Resort Palm Springs CA
 PGA West Palm Springs CA
 Doral Resort Miami FL
 Lake Lanier Lake Lanier GA
 Grand Traverse Acme MI

Landmark Golf Co.
 Angel Fire Angel Fire NM
 Las Vegas Paiute Las Vegas NV
 The Mojave Laughlin NV
 Trapper's Turn Wisconsin Dells WI

Legacy Golf Management
 Cobblestone GC Acworth GA
 Fox Creek GC Smyrna GA
 Legacy GL Smyrna GA
 Legacy GL Aberdeen NC
 Wmsburg Nat'l Williamsburg VA

Lincoln/Brooks-Baine
 Battle Creek GC Broken Arrow OK
 Carswell GC Ft. Worth TX

Links Group
 Links/Lost Plant. Rincon GA
 Indian Wells Garden City SC
 Burning Ridge Myrtle Beach SC
 Cypress Bay Myrtle Beach SC
 Island Green Myrtle Beach SC
 Quail Creek Myrtle Beach SC
 Sea Gull Myrtle Beach SC
 Colonial Chartrs N. Myrtle Beach SC
 Tradition Club Pawleys Island SC
 Indigo Creek Surfside Beach SC

LinksCorp
 Glenlakes GC Gulf Shores AL
 Mt. Ranch GC Little Rock AR
 CC of Arkansas Maumelle AR
 Kissimmee Oaks Kissimmee FL
 Eastwood GC Orlando FL
 Alpharetta CC Alpharetta GA
 Oak Harbor GC Sidell LA
 Mississippi Nat'l Biloxi MS
 Castlewoods GC Jackson MS
 Taberna CC New Bern NC
 Sapphire Mtn. Sapphire NC
 Rickenbacker Columbus OH
 Crescente Pointe Bluffton SC
 Hunter's Creek Greenwood SC
 Eagle's Pointe Hilton Head SC
 Stonehenge GC Knoxville TN
 River Islands GC Kodak TN
 Stonebridge GC Memphis TN
 Nashboro GC Nashville TN
 Temple Hills CC Nashville TN
 The Crossings Richmond VA

Lyon Golf LLC
 Chaparral Pines Payson AZ
 The Rim GC Payson AZ
 The Cottonfields Phoenix AZ
 ASU Karsten GC Tempe AZ

Marriott Golf
 Grand Hotel Mobile AL
 Camelback Inn Scottsdale AZ
 Kierland GC Scottsdale AZ
 Mt. Shadows Scottsdale AZ
 Castle Harbour Hamilton Bermuda
 Desert Springs Palm Desert CA
 Las Palmas Rancho Mirage CA
 Mirage City Cairo Egypt
 Marco Island Marco Island FL
 Faldo Golf Inst. Orlando FL
 International GC Orlando FL
 Orlando World Orlando FL
 Renaissance St. Petersburg FL
 The Georgian Atlanta GA
 Renaissance Lake Lanier GA
 Stone Mountain Stone Mountain GA
 Lincolnshire Res. Lincolnshire IL
 Griffin Gate Lexington KY
 Tan-Tar-A Lake of Ozarks MO
 Seaview Resort Absecon NJ
 Toftrees State College PA

Marriott Golf (cont.)
 Golf Son Antem Mallorca Spain
 Cattails/Meadow Kingsport TN
 Shiloh Falls Pickwick Dam TN
 Westfields GC Reston VA

Marty Golf Management Inc.
 Mallard Pointe John Kile St. Pk. MS
 Quail Hollow Percy Quin St Pk MS
 Saddle Creek GC Lewisburg TN

Masters Golf Corp.
 Sage Meadows Jonesboro AR
 Silver Lake Leesburg FL
 Monarch Leesburg FL
 Marco Shores Marco Island FL
 Bobcat Trail Northport FL
 Oak Hills GC Spring Hill FL
 Deer Island Tavares FL
 Bay Tree GC Winter Haven FL

Matrix Hospitality Corp.
 Echo Farms CC Wilmington NC
 Woodlake CC Lakewood NJ
 Meadowbrook Clayton OH
 Ashbourne CC Cheltenham PA
 Commonwealth Horsham PA
 Cedar Brk Hills Philadelphia PA

Maxwell Golf Group
 Sunset Landing Huntsville AL
 The Refuge Flowood MS
 LeFleur's Bluff Jackson TN

MDJ Management Co.
 Birch Hills GC Brea CA
 Alta Vista CC Placentia CA

Meadowbrook Golf Group
 Sycamore Can. Arvin CA
 Presidents Club Indio CA
 Pelican Bay CC Daytona Beach FL

Meadowbrook Golf Group (cont.)
 Bella Vista Howey-In-Hills FL
 Kissimmee Bay Kissimmee FL
 Cleveland Hgts Lakeland FL
 Miami Springs Miami Springs FL
 Ekana GC Orlando FL
 The Annex GC Orlando FL
 Palm BG GC. Palm Beach Gard. FL
 Seminole GC Tallahassee FL
 Winter Spgs GC Winter Springs FL
 Glendale Lakes Glendale Heights IL
 RedTail GC Lakewood Village IL
 Prairie Landing West Chicago IL
 Blackthorn GC South Bend IN
 Aberdeen GC Valparaiso IN
 Glenmary CC Louisville KY
 Hawk Ridge GC Lake St. Louis MO
 Emerson GC Emerson NJ
 Pascack GC Rivervale NJ

Meadowbrook Golf Group (cont.)
 The Reserve Madison OH
 Tattersall GC West Chester PA
 Indian Creek GC Carrollton TX

National Fairways Inc
 D. Fairchild Bridgeport CT
 Trout Brk Valley Easton CT
 Hidden Hills CC Jacksonville FL
 Oak Bridge Ponte Vedra FL
 St. Augustine GC St. Augustine FL
 Forsgate CC Jamesburg NJ
 Hudson Nat'l GC Croton/Hudson NY
 Inniscrone GC Avondale PA

New England Golf Corp.
 Minnechaug GC Glastonbury CT
 Alling Memorial New Haven CT
 Pinecrest GC Holliston MA
 Pine Meadows Lexington MA

Continued on next page

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New England Golf Corp. (cont.) Lost Brook GC Norwood MA	Paloma Golf Group (cont.) Geneva Nat'l GC Lake Geneva WI	Scratch Golf Co. (cont.) Baytree Nat'l GC Melbourne FL	SunCor Development Co. SunRidge Cany. Fountain Hills AZ	Troon Golf Troon North GC Scottsdale AZ
Nitto America Co. Ltd. Calabasas G&CC Calabasas Park CA	Primadonna Resorts Inc. Primm Valley Primm NV	Jacaranda GC Plantation FL	Palm Valley Lks Goodyear AZ	Westin LaPaloma Tucson AZ
Peacock Gap San Rafael CA	RBI Golf Management Coyote Creek Fort Lupton CO	Slammer/Squire St. Augustine FL	Palm Valley GC Goodyear AZ	Rams Hill CC Borrenco Springs CA
Mikaha Valley Walaanae CA	RDC Golf Management Gainesville Nat'l Gainesville FL	Hilton Head Nat'l Bluffton SC	Wigwam Resort Goodyear AZ	Eagle Glen GC Corona CA
Silversword GC Maui HI	CC at Heathrow Orlando FL	Dunes West GC Mt. Pleasant SC	Palm Valley GC Litchfield Park AZ	Westin Msn Hills Rancho Mirage CA
O.B. Sports The Gallery Tucson AZ	Tusawila CC Orlando FL	Shaker Golf Corp. Traditions GC Burlington KY	Sanct. Westworld Scottsdale AZ	Castle Pines No. Castle Pines CO
Stevinson Ranch Modest CA	Cypress Creek Ruskin FL	Beaver Creek Beaver Creek OH	Sedona GR Sedona AZ	Sheraton Tamaron Durango CO
Angel Park Las Vegas NV	The Crossings Raleigh NC	Walden Ponds Indian Springs OH	Toll Brothers Inc. Mizner CC Del Ray Beach FL	Fox Acres CC Red Fether Lakes CO
The Legacy Las Vegas NV	Forsgate CC Jamesburg NJ	Shaker Run GC Lebanon OH	Naples Lakes CC Naples FL	Legacy GC Bradenton FL
The Oasis Mesquite NV	Jumping Brook Monmouth Co. NJ	Oasis GC Loveland OH	Brier Creek CC Raleigh NC	Lost Oaks GC Palm Harbor FL
Langdon Farms Portland OR	Riverside Golf Management Co. Champions Club Jacksonville FL	Deer Run CC Western Hills OH	Belmont CC Loudon Co. VA	Westin Innisbrk Tarpon Springs FL
Trophy Lake Bremerton WA	Windsor Parke Jacksonville FL	Blackhawk GC Pflugerville TX	Troon Golf Pelican Waters Queensland AUS	Westin Savannah Savannah GA
Wash. Nat'l Seattle WA	Scratch Golf Co. Timacuan G&CC Lake Mary FL	Signature Golf International Starr Pass GC Tucson AZ	Quintero G&CC Lake Pleasant AZ	Eagle Ridge Galena IL
Paloma Golf Group Port Armur GC Greensboro GA		Harbor Hills CC Orlando FL	Legend Trail GC Scottsdale AZ	Island Green CC Amenia NY
MacDonald Rch Henderson NV		Oak Tree CC Edmond OK	Stonehaven GC Scottsdale AZ	Turnberry Hotel Ayrshire Scot.
			Talking Stick GC Scottsdale AZ	Westin Cantera San Antonio TX



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Southwest changes to Walters Golf

LAS VEGAS—The Walters Group, a Las Vegas-based holding company for diversified investments and business ventures in the areas of real estate and recreation, has changed the name of its golf division from Southwest Golf to Walters Golf.

The name was changed to create a closer identity between the golf properties and owners Bill and Susan Walters, who have spearheaded the development team behind each facility.

"Golf is my passion and I love the creative and design aspect of the golf course itself," said Bill Walters, chairman and chief executive officer of The Walters Group. "Susan leads a fantastic interior design team that creates unique and warm atmospheres in our clubhouses. A true evolution is happening in the golf business in Las Vegas. We have become a golf resort destination with the types of courses being built here."

Walters Golf currently owns and operates three facilities: Desert Pines Golf Club, Stallion Mountain Country Club and The Royal Links. All three are located in Las Vegas.

The company will be building two more golf facilities in the Las Vegas area. The next property will be located on the south end of the Las Vegas Strip and is slated to feature the best holes created by Pete Dye. The second will be a community course.

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BRIEFS



GRANITE APPOINTS NIELSEN CEO

SCOTTSDALE, Ariz. — Gary Nielsen has joined Granite Golf Corp. as chief financial officer. Nielsen will oversee the finance and accounting departments along with information systems. Nielsen has worked the last two years as CFO of Best Western International in Phoenix. Nielsen has also held executive positions with Giant Industries, Inc., Del Webb Corporation and KPMG Peat, Marwick. He has an accounting degree from Arizona State University and holds an Arizona Certified Public Accountant Certificate.



Gary Nielsen

CASPER TAKES OVER DEL. LINKS

VIENNA, Va. — Billy Casper Golf Management, Inc. has been retained to provide professional turnkey management services to The Golf Park at Rehoboth Beach (Del.), which opened for public play in March featuring the mix of an 18-hole executive golf course, nine-hole pitch-and-putt layout, and expansive putting green. BCGM will perform day-to-day functions in the areas of clubhouse operations, turf management, marketing and public relations, food and beverage, merchandising, personnel hiring and training, and financial management.

SCRATCH OPENS HILTON HEAD LAYOUT

HILTON HEAD ISLAND, S.C.—Architect Bobby Weed recently unveiled his new, nine-hole design at Scratch Golf's Hilton Head National Golf Club, bringing the total number of holes to 27. The course is owned and operated by Scratch Golf Company. Based on Hilton Head, Scratch Golf is a golf course development and management company concentrating on the Southeast. With six daily-fee properties stretching along the Atlantic coast from Charleston, S.C. to Ft. Lauderdale, Fla., Scratch Golf owns and operates 135 holes of public golf.

GOTHAM ADDS N.C. FACILITY

MIAMI—Gotham Golf Partners expanded its portfolio by one additional golf course with the acquisition of Sapphire Mountain, a semi-private club in Cashiers, N.C. The latest addition gives GGP a total of 19 courses.

A course a year; that's all they're asking at Wilson

By PETER BLAIS

WHITE BEAR LAKE, Minn. — Wilson Golf Group (WGG) has acquired Turtleback Golf Course in Rice Lake, Wis., giving the White Bear Lake-based management firm seven golf facilities in the Upper Midwest.

Wilson plans to retain the current management staff at the destination resort including General Manager Scott Maanum and Superintendent Todd Severud.

"We're trying to acquire a course per year," said Greg Stang, WGG's director of acquisitions.

WGG courses include four in Minnesota and two in Colorado. The Minnesota facilities are Oak Glen and Applewood Hills in Stillwater, Gem Lake Hills in White Bear Lake and North Links in North Mankato. The Colorado tracks are 15 miles apart on the Western Slope — Adobe Creek in Fruita and Chipeta in Grand Junction. The company also owns a piece of land outside St. Paul that will see construction of course No. 8 within the next 18 months, Stang said.

With four Minnesota courses apiece, WGG, Continental Golf Group and American Golf Corp. are the largest course operators in that Upper Midwest state. "There are a couple others [management firms] that have started up that have one or two on hand," Stang said.

The company's founder, who Stang declined to identify, purchased Gem Lake 10 years ago. A couple years later, through some family contacts, he purchased some land in Colorado and built a course there. He acquired the remaining facilities over the past four years.

"A year ago we decided we needed a little different structure to go after this market," Stang said. "It started as a single owner with a single operation. He's given us the go-ahead to expand and take it where we'd like to."

Each WGG course has an individual management team and that team is free to target a specific market, Stang said. All the facilities are public and range in size from 27-hole



Turtleback Golf Course, Wilson' Golf Group's latest acquisition.

Oak Glen (where Stang is also general manager), to 18-hole regulation facilities at North Hills and Adobe Creek, to 18-hole executive tracks at Gem Hills, Applewood and Chipeta.

"Customer service is one of our major goals," Stang said. "We also want to put the right product out at the right price. We feel we give a very fair value for the price."

WGG is focusing expansion efforts on the Upper Midwest — Minnesota, Wisconsin, Iowa and Colorado.

"Most of Minnesota's market is around the Twin Cities," Stang said. "Courses within an hour's drive seem to be doing very well. We're getting close to saturation, but they continue to build golf courses. Brainerd is the other big area, about 2 1/2 hours north of the Twin Cities."

Stang said he isn't surprised by recent NGF figures showing declining participation rates among golfers. "You're getting to the point that courses that are well run and put out a good product will continue to increase [business]. Some that aren't up to snuff could take a step back."

"The whole key is defining your market. Here at Oak Glen, a lot of our business is corporate related. There aren't a lot of facilities here in the city that go after that market. We're as busy Monday through Thursday as we are Friday through Sunday. That's the key. You have to fill your soft times. That's where people may be seeing a dropoff, probably because of the number of new golf courses coming on board."

Family Golf buys SkateNation for \$29M

MELVILLE, N.Y. — Family Golf Centers Inc. said it agreed to buy ice rink operator SkateNation Inc. for \$29 million as it seeks to offset the seasonal nature of its core golf course business.

Family Golf Centers, which runs more than 110 golf and recreation centers in the United States and Canada, will acquire all of the capital stock of SkateNation for \$17 million in cash and \$12 million in debt. SkateNation, a unit of Toronto-based TrizecHahn Corp., owns or manages 23 ice rinks and recreation centers in 11 U.S. states. TrizecHahn is one of North America's largest real estate companies.

Family Golf, which has traditionally focused on golf courses, plans to buy and develop ice rinks and recreation centers to strengthen its year-round revenue.

The Eagle has landed: On Normandie

ST. LOUIS — Eagle Golf Properties, Inc., a golf course investment company, has signed a long-term lease for Normandie Golf Club, an 18-hole facility located in St. Louis. The course opened in 1901 and is reportedly the oldest course west of the Mississippi. The course will be managed by Eagle Golf Services, LLC.



ACQUISITIONS

Richard J. Stahlhuth, managing director of Eagle Golf Services, LLC, said, "significant improvements will be commenced immediately to facilitate the return of Normandie Golf Club to prominence in the golf community as one of the first-class courses in St. Louis."

Eagle Golf Services, LLC, currently manages Quail Creek Golf Club and Lakewood Golf Club in St. Louis, Cottonwood Golf Club in DeSoto, Mo., and The Cape Golf and Racquet Club in Wilmington, N.C.

Meadowbrook acquires Orlando facility

KISSIMMEE, Fla.—Meadowbrook Golf Group, Inc. has acquired Ekana Golf Club, an 18-hole, par-72 course in Oviedo, Fla., approximately 20 minutes from downtown Orlando. Ekana is an upscale semi-private club designed by architect Joe Lee. Ekana Golf Club is situated on the Econlockhatchee River and is an Audubon Cooperative Sanctuary Member. The acquisition is part of Meadowbrook's plan of acquiring \$100 million of golf course properties.

Matrix adds two to its growing portfolio

CRANBURY, N.J.—Matrix Golf & Hospitality has two new acquisitions: Meadowbrook Country Club (CC) in Clayton, Ohio, and Woodlake CC in Lakewood, N.J.

Meadowbrook CC will celebrate its 75th anniversary this year. Acquisition of the club, 20 minutes from downtown Dayton, marks Matrix's entrance in the Miami Valley.

Meadowbrook is a regulation-length, 18-hole facility founded in 1924 when Nipper Campbell designed its first nine holes. The second nine was added in 1960. Matrix, which will lease and operate Meadowbrook, plans improvements to the golf course, and will promote increased membership sales and utilization of the banquet spaces at the clubhouse.

Woodlake was built in 1972 by architect Edward Lawrence Packard and offers a championship length of 6,800 yards with water coming into play on 14 holes. The club operates as a semi-private facility, although Matrix is planning a three-year transition to a fully private country club. Woodlake has a 35,000-square-foot clubhouse, driving range, putting green, swimming pool and four tennis courts.

Matrix is planning substantial renovations at the Woodlake clubhouse to modernize it and increase its appeal to the banquet market. Improvements will also be made to the golf course.

CMAA elections

Continued from page 1

have never given a lot of thought to."

Singerling's words are almost identical to those heard repeatedly at the recent Golf Course Superintendents Association of America annual meeting, where numerous speakers and officials discussed the need to make the superintendent's value known to both the mem-

ber/influential golfer as well as the community at large.

The GCSAA has hired a Boston public relations firm to work on its perceived image shortcomings. For its part, the CMAA recently received the results an image audit conducted by Jim Barnes of JLR Associates.

According to the audit, "Among club members there appears to be an overall positive

perception of club managers and their profession." Other audit findings seem to reinforce this positive image of club managers:

- Eighty-six percent of club members feel the club manager should be seen as a team leader by the general club membership.
- The club member focus groups saw the club manager as the most senior management

employee at their club and an overwhelming 94 percent see the club manager as the club's chief operating officer.

- Seventy-nine percent of club members saw the club manager as the one most responsible for the members' satisfaction at the club.
- Additionally, members rate the club managers' position as the most critical to the club's

operational success.

Despite the seemingly positive club manager audit results, CMAA members still feel they have an image problem. Why do such highly educated individuals believe their members and the public think poorly of them?

"As is the case with many professionals," Singerling said, "image is probably a question more in their own minds than it is in everyone else's. Overall, there is respect. There may not be knowledge of specific programs, like CMAA's certification program or professional development programs among peripheral members or officers. That is an area we [CMAA] will focus on, providing a greater understanding of what it means to be certified in our association. We've educated our membership to that, but we haven't done a very good job of educating those people you are looking for respect from, namely those in your community.

"It [the perceived image problem] is universal. Nobody understands lawyers or brain surgeons or accountants. If you say you ought to respect me because I'm a lawyer or a brain surgeon, most people are going to relate to a negative experience they might have had with a lawyer, doctor or accountant. Seldom will they remember that great experience when the accountant saved them \$5,000 on their income taxes.

"Ours is similar to other professions. When you have a concentrated professional focus on your specific competency, most people outside don't understand it. They understand it generally. But they won't spend a lot of time learning about the specific competencies it takes to do that job...They [golf industry professionals] question whether they are respected because the people-to-people contact in their positions is often when they are getting beaten up on. Members expect the course to be in good condition, so when it is in good condition, no one complains or congratulates the superintendent. But when it goes bad, that's when you hear it. That would lead superintendents to believe that when a member is coming up to talk to them, it's to rap them alongside the head for something that's wrong.

"Similarly, club managers are responsible for passing along the bad news to members. Usually the good news of, say, *no dues increase*, comes in a letter from the club president. But it is often the manager who has to explain to a member why the board *increased* dues, or prices, or why the facility is falling apart."

As for the election, Paul
Continued on page 70

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BRIEFS



MUETZEL PROMOTED, AWARDED

NEWNAN, Ga. — Yamaha Motor Manufacturing has promoted Mike Muetzel to the position of sales and marketing division manager for the Yamaha Golf Division. Muetzel's background includes 20 years of experience in key positions within the



Mike Muetzel

golf industry. He has been with Yamaha since May, 1992. In his new position, Muetzel will support dealer sales and direct the daily operation of Yamaha's

direct sales and marketing team. Previously, Muetzel was a direct sales manager for Yamaha. Muetzel was also the recipient of the 1999 Don Rossi Award. Presented by the National Golf Course Owners Association (NGCOA), the award is given in recognition of significant contribution to the association.

TEXTRON'S RIVERS TAKES GIANT STEP FORWARD

AUGUSTA, Ga. — E-Z-GO Textron, manufacturer of golf cars, has promoted David Rivers to the position of executive vice president of the company. In 1992 Rivers was promoted to vice president of sales and marketing, and in 1996 he became senior vice president with the added responsibility of international distribution. In his new position Rivers will oversee all product planning and worldwide distribution for E-Z-GO, as well as the recently acquired Cushman industrial/commercial product line.

TYLER ANNOUNCES KEY CHANGES

ELWOOD, Ill. — Tyler Enterprises has changed its customer service team with the hiring of two new sales representatives. The changes include the promotion of Bill Davis from Wisconsin sales representative to midwest sales manager, based in Elwood. In this position, Davis will lead the sales team, coordinate the company's production schedules with the Elwood facility's plant manager and be responsible for on-time purchase and delivery of raw materials. His replacement, Andy Schoofs, is a veteran in the Wisconsin commercial landscape industry and joins Tyler Enterprises as the sales representative for Wisconsin, Northern Illinois and Minnesota. Filling a newly created position, Roger Valentine will serve as Tyler's sales representative in Indiana.

New chemistry abounds in 1999

• Precision Labs introduces long-lasting cure for LDS

By ANDREW OVERBECK

NORTHBROOK, Ill. — Say good-bye to hand watering, according to Precision Labs. The company said its new wetting agent, Cascade, utilizes high performance water infiltration chemistry that allows a single application of the product to eliminate localized dry spot (LDS) for six to 18 months.

"We don't know what Cascade does exactly," said Precision Labs president, Richard Wohlner. "But we do know that it interrupts the influence of the hydrophobic coating that builds up on sand grains."

Hydrophobicity is caused by the break down of organic matter on the

Continued on page 64



• Novartis takes mesostemic approach with Compass

By ANDREW OVERBECK

GREENSBORO, N.C. — Novartis will soon be introducing Compass 50WG (*trifloxystrobin*), a new contact fungicide that features lower application rates and longer periods of disease control.

Compass accomplishes this by utilizing a new mesostemic mode of activity. While other fungicides use systemic activity, distributing fungicide through the vascular system of the plant, Compass instead imbeds itself into the waxy layer and cells of the plant giving the plant a reservoir of fungicide available for protection.

According to Novartis, Compass holds several advantages over conventional systemic fungicides.

Since the movement of systemic fungicides is upward, the protected part of the plant is often mowed off within a 21-28 day period leaving the plant vulnerable to disease. Further, systemic fungicides protect from the inside-out, while Compass protects from the outside-in.

According to Novartis research and development specialist, Michael Agnew, systemic fungicides allow for damage to occur since the disease does not begin to be controlled until it gets inside the plant. "With Compass, the fungicide is imbedded in the waxy layer of the plant, preventing disease from actually entering the plant," said Agnew.

"Further, it doesn't wash off like many other contact fungicides, and it moves from one point to another through 'vapor action' that gives it greater residual effectiveness," said Agnew. "The length of control on greens is 14-21 days and on fairways it is 21-28 days—almost double the length of control for other fungicides."

Continued on page 65

• Chipco Proxy PGR forges new ground

By ANDREW OVERBECK

RALEIGH, N.C. — Rhone-Poulenc has introduced Chipco Proxy, a new plant growth regulator (PGR) that utilizes such a unique mode of action on cool season grasses that it may require, according to researchers, a completely new classification.

According to Rhone-Poulenc, Chipco Proxy is formulated to behave differently than other PGRs. Instead of effecting existing plant growth, Proxy focuses on controlling new growth, encouraging lateral growth, branching and greater root depth and turf density. This provides three distinct advantages according to product manager, Jim Davis.

The first is the length of control. "On cool season grasses, especially bluegrass and rye, we experience seven weeks of control," said Davis.

Additionally, Chipco Proxy eliminates turf shock, the yellowing and discolora-

Continued on page 65

John Deere readies formal reconditioned golf and turf line

By MICHAEL LEVANS

MOLINE — John Deere has launched the JD ProConditioned line of golf and turf products, the company's first formal program to help put turf equipment rolling out of a lease back on the golf course.

According to Mark E. Bodwell, John Deere's manager of product support services for golf and turf sales worldwide, the used market is soaring, especially as the number of lease rollovers increases and the number of renovations and additions continues to climb.

"You'll also find a lot of new courses that might be adding another nine or 18. They're more likely to use reconditioned as grow-in equipment," said Bodwell.

But the bulk of the market will continue to be courses outside of the "premium" category. "A three-

Continued on page 64

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Sybron acquires Green Releaf

SALEM, Va.—Sybron Chemicals Inc., a manufacturer of applied microbiology, has announced the recent acquisition of Jacksonville, Fla.-based Green Releaf BioTech Inc. Sybron will incorporate the Green Releaf operations into its biochemi-

cal division's research and manufacturing center in Salem.

The addition of Green Releaf will combine microbial technology and resources of Sybron with Green Releaf in the application of microbes and slow release organic nutrients to enhance turf.

"Sybron has always been a member of the Green Releaf team," said Ted Melnick, vice president of Sybron's biochemical division. "We're simply stepping up to the plate to accelerate the benefits golf course superintendents can reap from a technology that we believe is the future of turf maintenance."

Textron facility receives ISO 9001

LINCOLN, Neb.—Textron Turf Care And Specialty Products reports that its Lincoln facility has achieved registration to ISO 9001, the quality assurance standards developed by the International Organizations for Standardization (ISO).

The design, manufacture and distribution of products, such as Cushman utility vehicles and

Ryan turf renovation equipment, fall under the umbrella of ISO 9001 registration.

"The registration to ISO 9001 for our Lincoln facility further reinforces the comprehensive system of quality and high standards we already had in place," said Jeff Dailey, vice president of operations for Textron Turf Care And Specialty Products. "ISO registration helps us enhance and maintain our standards. To that end, our customers can be assured of receiving consistently high-quality products."



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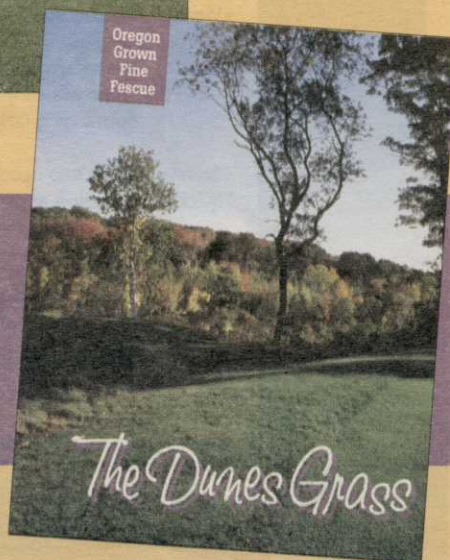
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Write or call today for your copy of the new *Oregon Fine Fescue: The Dunes Grass* brochure with photos and management tips.

Southern Turf Nurseries and Ecoshores partner

ROBERTSDALE, Ala. — Southern Turf Nurseries and Ecoshores have partnered to provide fine natural grasses to U.S. golf courses.

The partnership creates eco-friendly turf products including turfgrass sod, sprigs, native grasses, wetland plants, technical information and installation services.

"As a golfer, I am very aware of the importance of fine turf in the areas of play," said Steve Beeman, a marine biologist and former Ecoshores owner. "When you get into the rough, that is where we can tie aesthetics into function as it relates to design, while enhancing the natural environment and producing a habitat for sustainable wetlands and wildlife maintenance."

Since 1995, Ecoshores has planted more than 185 wetlands and golf courses and delivered products to 350 individuals who have done their own installations, primarily in Florida and the Southeast.

"This union is a natural marriage," said Beeman, "due to the various farms of Southern Turf Nurseries across the country, which will bring us closer to our clients with locally selected and produced plants, design and installation services."

Jacklin on board with First Tee

POST FALLS, Idaho — Jacklin Seed has been named the official seed supplier to The First Tee. The company said that it will offer specially-priced turfgrass seed (approximately 35 percent below market price) and complimentary services of the company's regional turfgrass specialists to all First Tee course projects. Textron said that registration for the facility marks a continuing effort by to align its entire organization with ISO standards.

Eco Soil

Continued from page 1

biologicals program manger at Eco-Soil. "We've developed an insurance program underwritten by Chubb that rewards the golf course for moving toward the biologicals."

On property coverage, the company said that the Chubb policy expands the traditional definition of "real property" to include golf course property. The core features include automatic blanket limits on specific items such as EDP property and fine arts as well as a risk management service.

Eco Soil is also offering an expanded workers' compensation policy as a separate item.

"The policy, across the board, should generate enough savings to the golf course to pay for half of the system," said Bill Adams, Eco-Soil's chairman and chief executive officer. "If they incorporate workman's compensation into the system it's possible that the savings could pay for the whole system."

♦♦♦

News of EPA approval of the BioJect distribution system came to the company on the evening before the start of this year's GCSAA show.

"We had to prove that in one particular instance, with one particular bacteria, that the whole system was safe to all the golf course employees and players," said Doyle.

"We took one bacteria, put an application in for a biopesticide, showed antifungal characteristics with that bacteria, then had to prove that that bacteria was the only bacteria finding its way onto the golf course. That was quite an extensive process."

With the official thumbs up, Adams said that the company must move forward as an "educator" and not just a marketer of product.

"We have tried to stay away from the environmental issue because there is so much bad publicity out there already that superintendents are not tuned into the environment," said Adams. "We find that to be just the opposite, that they truly are environmental stewards."

"Our job, and one of the reasons we acquired this distribution system, is to help teach our sales people to help the superintendent to integrate these products into their cultural plans. Superintendents are using good products today and they're probably using them well, minimizing any environmental impact. But we think we can show them how they can cut back frequencies and achieve better effectiveness to really get behind this IPM bandwagon," said Adams.

Pennington Seed plans substantial facility expansion

MADISON, Ga. — Pennington Seed Inc. has started construction of a new packaging and production warehouse that will more than double seed storage and delivery capabilities at headquarters here.

The company said that the 41,000-sq.-ft. building, which

will be operable by late summer, will increase annual production its wildflower seed varieties, wild game products and southern warm season turfgrasses by up to 15 percent.

The facility will increase storage of all cool season grass seed varieties and enable Pennington

to produce as much as 10 truckloads each day with upgrades like bulk seed handling and custom blending equipment.

"The new warehouse will improve Pennington's ability to produce, store and deliver our signature line of products," said Tony Harper, vice president of

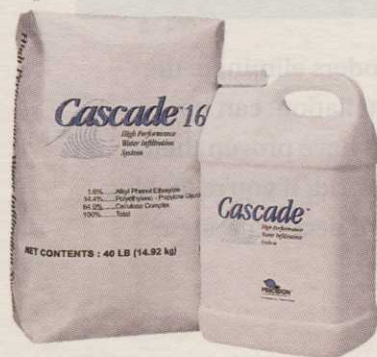
Pennington's seed production division. "Increased storage space will enable us to process orders more efficiently, and the on-site railway system will mean less time spent in-transit. Retail distributors don't want to store our products until they need them—they want to receive our products when they need them."



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NEW CHEMISTRY

Cascade

Continued from page 61

soil which leaves behind a coating of fulvic and humic acids that coat sand and soil particles in the soil profile. Cascade combats this acidity by penetrating the soil profile and interrupting or possibly removing the barrier altogether. "This allows for greater residual

activity, and also influences deeper root growth for better turf quality, color and drought resistance," said Wohlner.

This leads to smaller, less frequent and more effective applications. Wohlner recommends a split application of 8 ounces of Cascade per 1,000 sq. ft. seven to ten days apart.

However, the effectiveness of Cascade varies due to climate. "The higher the rate of biological

activity, the faster the hydrophobicity returns," said Wohlner. "Therefore in climates like Minnesota, we can get better results out of the product than in Georgia or Florida where the effectiveness is around six months."

While Cascade has a high efficacy rate, achieving visible results after 48 hours, Wohlner recommends that it be applied in the

'In climates like Minnesota, we can get better results out of the product than in Georgia or Florida where the effectiveness is around six months.'

—Richard Wohlner

spring, well before LDS appears. "Superintendents are finding that Cascade will not only get rid of LDS for the bulk of the playing season, but it allows for faster firmer greens all summer," said Wohlner.



At the 1998 BC Open the most visible sign of an irrigation system was the beautiful turf.

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JD partners with NGCOA

MOLINE, Ill. — On the heels of the introduction of its JD ProConditioned line of golf and turf products, John Deere has announced its partnership with the National Golf Course Owners Association's (NGCOA) Smart Buy Network.

Under the agreement, John Deere will be the exclusive equipment supplier, offering both its new line of JD ProConditioned golf and turf products as well as new equipment, to the NGCOA Smart Buy Network. NGCOA members will also be able to use John Deere Credit.

ProConditioned

Continued from page 61

year lease usually goes to a premium course," said Mark Bodwell. "When that equipment come out of a lease it is usually well maintained. The B and C courses that didn't have that kind of capital to buy new up front will purchase used equipment."

According to John Deere, any machine in the John Deere line of golf and turf products can be

Deere technicians will run checks on engine, transmission, power train, hydraulics, electrical systems, cutting units, aeration and chemical applicators.

eligible for the program provided it meets company requirements.

To qualify equipment, Deere technicians will run checks on engine, transmission, power train, hydraulics, electrical systems, cutting units, aeration and chemical applicators.

Inspections will include repairing or replacing all safety features as well as updating general appearance.

The reconditioning work will be carried out by Deere distributors, the key, said Bowell, to the new program. "They're the ones doing the preconditioning. They're the ones who perform the service."

NEW CHEMISTRY

Chipco Proxy

Continued from page 61
 tion that typically follows an application of PGRs. "With Chipco Proxy you don't have to trade turf safety for immediate efficacy," said Davis. "It may take a bit longer, but there is no need to add iron and nitrogen to a PGR application to mask the dis-

coloration."
 Chipco Proxy will cost around \$40 per application.
 Davis believes the advantages will allow superintendents to apply PGRs from tree-line to tree-line. "Chipco Proxy is cheap enough to justify spraying the roughs," said Davis. He recommends that the product be applied in mid to late April when the growing season is at its peak. "This way superintendents can

focus their early season energy on the fairways and greens," said Davis. "If they miss a mowing in the rough, superintendents won't have a bunch of members crawling on their backs."
 While Chipco Proxy is best suited for cool season grasses and the Northern U.S., it also has a promising application for Bermuda grass according to Davis. "We will be targeting the Southern markets because

while Chipco Proxy is not effective on Bermuda grass, it is particularly effective on rye grass" said Davis. "This means that it would be perfect for use during the transition between winter and spring. One, it would reduce winter

'It may take a bit longer, but there is no need to add iron and nitrogen to a PGR application to mask the discoloration.'

—Jim Davis

mowing, and two it would help hold the rye back while the Bermuda is releasing."

NEW CHEMISTRY

Novartis

Continued from page 61
 According to Agnew, Compass is also safer to use than other fungicides. "Compass will fit into Integrated Pest Management programs, it is an environmentally safe fungicide that requires small applications," he said. Novartis recommends applications of 1/10 to 1/4 of an ounce per 1,000 sq. ft. versus the typical

'Compass will fit into Integrated Pest Management programs, it is an environmentally safe fungicide that requires small applications.'

—Michael Agnew

rates of four to 12 ounces for conventional fungicides.
 "All of this will give the superintendent another tool and another option for the rotation of chemicals for disease control and fungicide resistance management," said Agnew.
 Compass is due to be available from Novartis this summer.

E-Z-Go Textron lands ISO 9001

AUGUSTA, Ga.—E-Z-GO Textron has become the first golf car and utility vehicle company to receive International Standardization Organization (ISO) 9001 registration. E-Z-GO has been certified to the ANSI/ASQC Q9001-1994 standard.

Bureau Vertias Quality International (BVQI) of Jamestown, NY, the ISO registrar, conducted a final audit of E-Z-GO's Augusta, GA, plant in late last, subjecting the company's operations to a rigorous, 20-element inspection. E-Z-GO had to show excellence in operations ranging from design control to inspection and testing.

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West Course (10th and 15th hole shown in left photo) was treated with 1 quart of InfilTRx per acre on a monthly basis beginning February 1998, the East Course (4th and 5th hole shown in right photo) was left untreated.

Near infrared and aerial photography at Imperial Golf Club in Naples, Florida, captures the benefits of using InfilTRx Soil Penetrant on fairways.

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Photos were taken June 8th, 1998.

Point/Hurdzan

Continued from page 15

of the pyramid we would put high-cost, expensive, very exclusive golf courses. Down on the bottom we would place basic, low-cost, effective beginner-type golf courses.

You would see those courses at the very top, the exclusive ones that cost a lot of money,

depend on a good base. We have to have a good foundation, and when the foundation starts to crumble and break down, the top will suffer as well. The better the base, the higher the top will rise. And so, the bottom of the foundation is what we really need to be concerned about.

The future health of golf depends upon three words: affordable, accessible and sustainable.

Affordable means keeping golf so that the average person can go out and enjoy the game. It means having golf competitively priced with going out to the movie theater, or going to a family restaurant, or being able to go to the course once or twice a week or once or twice a month.

Accessible means having golf as close to the city as possible, so that children can get there on

bike or public transportation. Having the golf course at a friendly place where people don't need to worry about wearing

Bobby Jones shirts or Footjoy shoes. But, rather, it's a place where you can go and just get comfortable and enjoy the pleasures of the game.

Sustainable means putting a golf course into the environment that needs the least amount of input possible to produce an interesting round of golf: the least amount of water, fertilizer, pesticide and fossil fuels. The fewer those inputs, the more sustainable that golf course is going to be.

A \$1 million golf course accomplishes all three of those goals. There is a rule of thumb that for every million dollars invested in a golf course, we need a \$8 to \$10 greens fee to recover that cost. If we build a \$3 million course, greens fees might be \$24 to \$30. If you add in the cost of a modest clubhouse, maintenance building and maintenance equipment, you might be able to sell a round of golf for \$8 to \$15 for every \$1 million invested.

The most important factor is the site. If you have a good site you can build an inexpensive golf course. What would a \$1 million golf course look like?

I would suspect that we could take Pinehurst #2 and duplicate it for \$1 million. And so also with Sand Hills in Nebraska, and even a little place called Pine Valley. Granted, it wouldn't have much of an irrigation system. But if we have a good natural site, we can put a golf course on it, and that golf course can become a very pleasurable place for a relatively low investment.

The key is a well-drained, gently rolling site with few environmental limitations is essential to making a \$1 million 18-hole golf course.

So, what if we don't have a good site and we have only \$1 million? Nothing says we have to build a par-72, 7,000-yard course. We can build a nine-hole course, or an executive course, or a learning center with some practice holes.

Each of those is important to that pyramid of golf. Each of those supports the base that we're concerned about.

Granted, a \$1 million golf course will never be a place that will hold the U.S. Open. Granted, it won't make much of a reputation for me and you. Certainly, it will never make the Top 75 list. But, overall it is good for golf. It is the right thing to do for the game.

In closing, I'd like to ask you which is better for golf: ten \$1 million golf courses charging a \$15 greens fee, or one \$15 million course charging a \$150 greens fee?

'I would suspect that we could take Pinehurst #2 and duplicate it for \$1 million. And so also with Sand Hills in Nebraska, and even a little place called Pine Valley.'

—Michael Hurdzan

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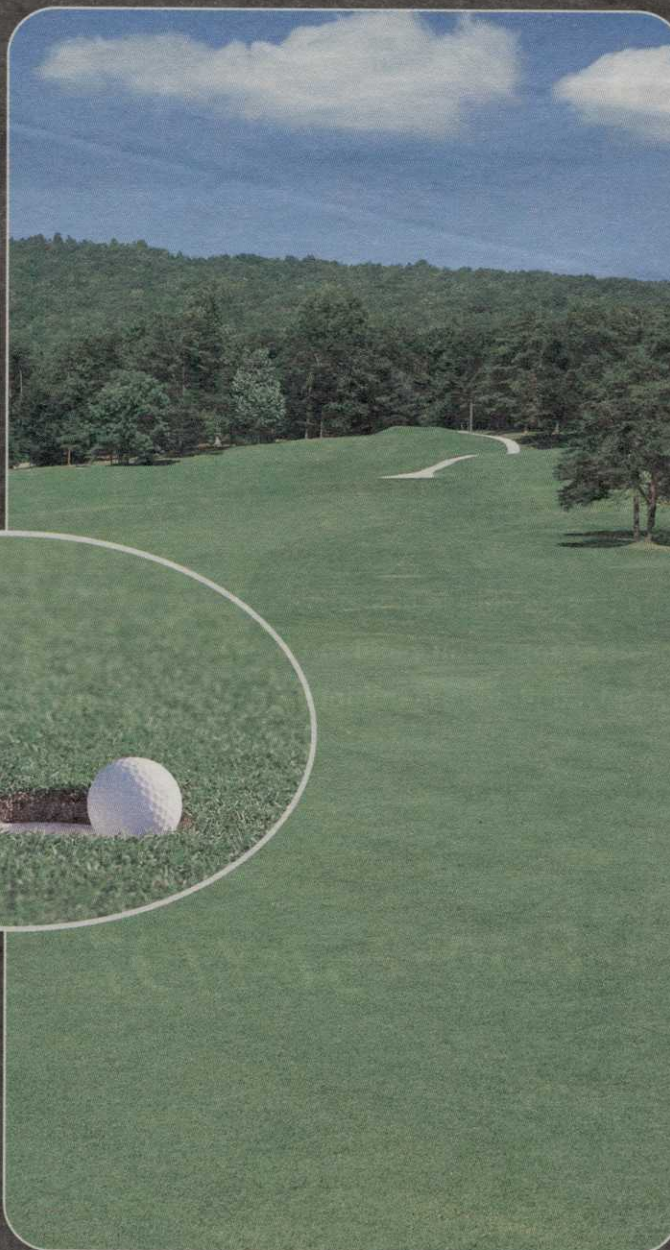
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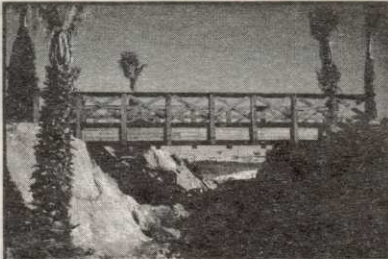
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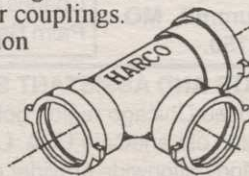
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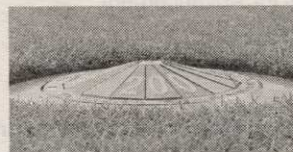


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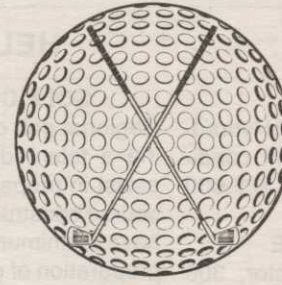
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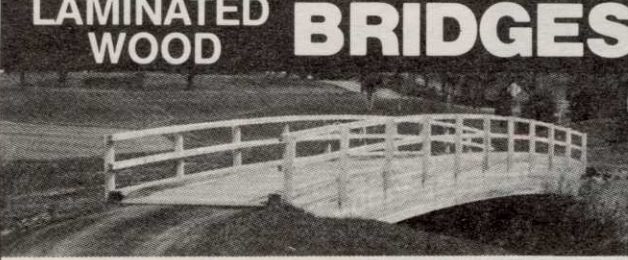
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* Appears in regional editions.

Counterpoint/Fry

Continued from page 15

On a project in Vancouver, British Columbia, we had enormous amounts of huge rocks. How do you cheaply remove them? If there are horrible soil conditions, it costs a lot to make a final product that looks good — not \$1 million.

The other thing that's required to build golf courses on difficult

sites is lots of drainage and irrigation. We put in miles and miles of irrigation on the Vancouver course, and in many instances we spend more than \$1 million on irrigation alone, and several hundred thousand on drainage.

The Vancouver project had a 175-foot drop on the tee shot. To make the fairway somewhat playable we had to build a 10-meter-high retaining wall. The wall it-

self was unbelievably difficult to build. We had lots of bridges crossing severe slopes to get from one point to the other. On the same project, with 700 feet of elevation change, we couldn't even get trucks to the site. We had to get the sand for traps hauled by helicopter.

The first hole at Devil's Pulpit in Toronto — the first course I ever worked with you on, Mike

'I don't know if \$1 million courses are possible, but affordable ones are important. And we must continue to build our special places — although they might cost \$10 million or more.'

—Dana Fry

— the very first issue of *Golf Course News*, I'll never forget it: February 1989, had just come out and Mike Hurdzan was

quoted in the lead article saying, "You can build a golf course for \$1 million." Well, this one hole at Devil's Pulpit cost \$1 million.

On another property, Desert Willow in Palm Desert, Calif., the site literally had no features whatsoever. We spent about \$10.5 million — of which \$1.5 million was in earthwork, \$2 million in irrigation, and \$3.2 million in landscaping.

Mike, I agree with what you're saying. But there are several conditions we must keep. On the pyramid of golf courses, it's much more fun to work on those at the top, and that is where most people struggle to be all of their lives. And, playing one of those courses is a life's goal for some people.

So, I say it is inherently important to continue to construct the low-cost golf courses. I don't know if \$1 million courses are possible, but affordable ones are important. And we must continue to build our special places — although they might cost \$10 million or more. Most of us learn to play golf on affordable courses, but we aspire to play and enjoy all the richness that a golf course can give.

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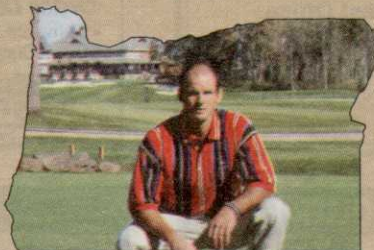


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Variables in Malpezzi's model assist in understanding study

Malpezzi's model for determining the market demand for golf includes the following variables: log population, log median household income, heating and cooling degree days, log median housing value, coastline miles, and percentage of the population over 65 years of age. Most of these variables are standard, but others deserve more explanation.

Heating days are measured by the number of days in a year that the temperature in an area falls below 65 degrees. These are days that require heating. Cooling degree days, therefore, are the number of days in a year that the temperature is above 65 degrees, and require cooling.

This statistic enables the model to directly compare warmer and cooler climates. Although more rounds of golf are played in warm climates, Malpezzi found that during warmer times of the year, it takes more golf courses in colder climates to handle the demand.

Another valuable statistic is median housing value. According to Malpezzi, "this allows the model to assess the opportunity cost of development in certain areas." Indeed, Malpezzi found that in areas with high median housing values, there were fewer golf holes per capita.

Also interesting are the variables

that Malpezzi left out of the model. The impact of tourism spending was found to not only be relatively insignificant, but also limited the number of cities that Malpezzi was able to include in the study. Racial and ethnic populations also had little statistical effect.

Golf study

Continued from page 13

Richards contends there is still room for development in Michigan, depending on the type of course. "High-end public courses will continue to do well. And private clubs up here still have waiting lists, so there is still room for development," said Richards.

According to the National Golf

Foundation's Judy Thompson, including information about golfer participation rates may be helpful to the model. "Figuring that in would certainly explain why a city like Grand Fork, N.D. (which made the top 10 "over supplied" list) has so many holes of golf per 1,000 population," said Thompson.

Malpezzi is planning to add all these variables into the next edition of his "Market for golf"

study. He plans to include types of golf courses, participation rates and development regulations in the next model. Malpezzi will also be updating the model using 1998 data to examine whether markets with higher potential in 1993 actually had higher rates of golf course development.

Malpezzi acknowledges the golf study, which is one of his many hobbies, is a work in progress.



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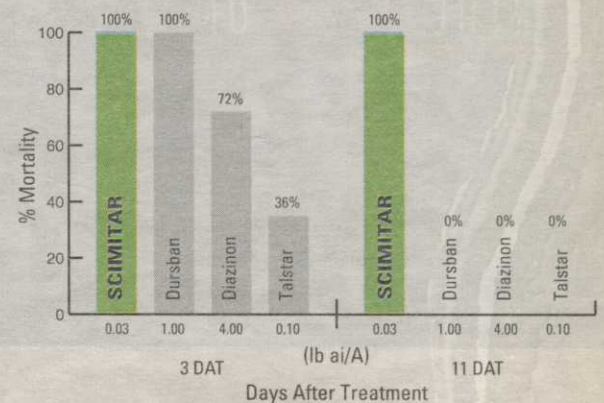
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