House Arrest

The housing market downturn hampers new golf course construction
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ONLINE POLL: ORGANIC FERTILIZER
During the next few years, do you plan to increase the amount of organic fertilizer applied on your course? Visit the GCI home page to vote in this online poll.

AIR IT OUT
Do you have a gripe about something? Do you completely agree or disagree with a recent column or article? Voice your opinion about a topic or try and bring recognition or attention to someone or something you feel deserves it. Visit our message board at www.golfcourseindustry.com/messageboard and speak your piece.

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

At the Carolinas Golf Course Superintendents Association’s annual conference in November, I attended a general session and listened to David Downing, CGCS, president of the GCSAA and past president of the Carolinas GCSA, talk about the reasons why the GCSAA does the things it does.

One of Downing’s comments struck me as an example of blatant political correctness with flawed logic – he said the GCSAA needs to “look more like America,” implying the association doesn’t have enough female and black members. Because of this, the association is implementing a plan to make the association more “diverse” during the next six or seven years. Well, what constitutes enough women and blacks? Does that imply quotas?

The ethnicity or gender of a superintendent is irrelevant no matter where a course is because course conditioning and hospitality – the two most important factors to golfers (those spending money at a facility) – transcend those two characteristics.

Targeting blacks and women to play golf is a different issue, part of which is because of the stagnant number of golfers and rounds played nationally. Involving blacks and females in the game at a young age will increase the odds of them being more involved in the game, including the business side of it, later in life. There are several much-needed programs addressing this.

However, there’s no shortage of golf course superintendents. There are so many students graduating from turfgrass programs looking for jobs that the market is flooded with qualified, capable people. It would be one thing to actively seek people based on gender or ethnicity if there was a shortage of talent entering the market, but there’s not. Besides, why would one seek someone based on ethnicity or gender to begin with? It’s discriminatory and generally a bad idea. Why should ethnicity and gender trump what people have in their minds and hearts? It shouldn’t.

As far as I know, not one person, university or company in this industry is preventing or hindering blacks or women from becoming golf course superintendents. (If there are examples, by all means, let me know.) Furthermore, many institutions of higher learning tend to implement quotas and policies that determine where people can educate themselves based on ethnicity and gender. As diverse as college campuses are, blacks and women are choosing the fields they want to enter. It just so happens few choose the golf course superintendent field.

The simple reason there aren’t more female and black superintendents is because they obviously prefer to enter other professions. It’s the free market and people’s free will at work. Superintendents, as a whole, are salt-of-the-earth, principled, hard-working people – no matter their ethnicity or gender – and the GCSAA shouldn’t feel bad about the racial and gender makeup of its membership.

People say diversity is good for business. While that might be true, it’s a weak argument to change the makeup of the association’s members. Through research, we’re told golfers’ No. 1 concern about a facility is course conditioning, not the ethnicity or gender of superintendents.

The GCSAA shouldn’t have to “look more like America” like Downing says. It should look like the people who want to, and work hard to, become superintendents. When the GCSAA talks about diversity, it should talk about it in the context of people’s minds and their different ideas and business philosophies, not in the context of ethnicity or gender. GCI
The Liquid Fence Company is proud to introduce EcoLogic™, the next generation of eco-safe turf, landscape and agricultural products. Landscape professionals, turf specialists, horticulturists and commercial growers alike, will now experience the benefits of “going green” while enjoying the unparalleled service and economy they have grown to expect from the makers of America’s best all-natural animal and insect repellents.

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Fundamental to success
I enjoyed John Walsh’s column and various articles in the October issue focusing on the importance of grow-in experience for superintendents. We opened our new Robert Trent Jones Jr. course in February 2005 after enduring four hurricanes during construction. Our golf course superintendent, Mark Nykorchuck, who came on board before we broke ground, did a superb job throughout the process and continues to do a superb job. It was his second start-up. There’s no doubt his prior experience helped him, and us, this time around. Although a team effort is the main reason for our success, the fact that we have a golf course superintendent with grow-in experience is fundamental to that success.

Ian D. N. Fetigan, CCM, CAM
General manager
The Founders Golf Club
Sarasota, Fla.

Better public facilities
The cover story in the October issue (“From public to private”) was well written and researched. However, one has to be careful about making the generalization private clubs are always better than public facilities. For example, in Washington, the highest paid superintendent is at a public course. Also, in Idaho, the highest paid superintendent is at a public course in Couer d’Alene. I’ve been told by a colleague in Minnesota that the superintendent at The Wilds, a public course, is the highest paid in the state. The most prestigious courses in California (Pebble Beach) and New York (Bethpage Black) are public. I also venture to say Bandon Dunes in Oregon is one of the top jobs in the country. The most famous course in the world, St. Andrews, also is public. One can’t be so cut and dry in stating the ultimate goal is a high-end private club. My public 27-hole course is nicer than a dozen private clubs in Seattle.

Ron Furlong
Golf course superintendent
Avalon Golf Links
Burlington, Wash.

An eye on finances
What a great piece Pat Jones wrote in the September issue (“Grumpy old farts”). He nailed me with that column. I’ve been a superintendent for 26 years, 12 of them at Oakwood, an established country club with a small budget and an aging, dwindling membership. I’m always finding ways to do things that need done for little money — ways to do things that a younger superintendent might not think of or might be afraid to try. In October, I added 12 inches of depth to my six-acre irrigation lake by packing dirt in front of two leaking spillways. It didn’t cost me anything to raise it a foot.

I’m always ready to try new things when managing turfgrass, especially with my greens. Twenty-six years hasn’t come close to teaching me all I need to know about greens care, especially when I have to watch the club’s money so closely. I’ve never lost track of my and the members priorities — excellent conditions daily for about half the money the big boys in town do for it.

Jeff Elmer, CGCS
Oakwood Country Club
Kansas City, Mo.

Career guidance
Jim McLoughlin’s career seminar, guidance and friendship has worked again. Recently, I was offered the golf course superintendent job at North Hempstead Country Club in Port Washington, N.Y. With so little movement in the area, and two out of the four jobs going to assistants, prospects didn’t look good. Shortly after, I met with club officials to finalize my contract. Before that, I reviewed Jim’s negotiating tips and contract template from his seminar. My Web site was used by the entire search committee, and it was able to encourage more interested members to view the site. I created a PowerPoint presentation, along with hand-outs, for each of the two interviews. I also visited the golf course a few times, walking it twice, and met with the golf pro and the g.m. on separate occasions, which allowed me to gain valuable insight.

Members of North Hempstead came to view the condition of the golf course at Fairview Country Club in Greenwich, Conn., where I was working at the time. This was the clincher.

Michael S. Mongon CGM
Golf Course Superintendent
North Hempstead Country Club
Port Washington, N.Y.
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QUALITY CONTROL MANAGEMENT

Most of today's businesses have quality control measures to manage production. They use internal controls while measuring employee and consumer feedback as means to improve the quality of products and efficiency.

Golf also is a business - a big one that generated more than $65.2 billion in 2005. Because golf is a business, the same strategies that promote best practices in other industries also should be effective in the golf course industry.

In 2003, the Hinsdale Golf Club began forming a golf course master plan. William "Billy" Fuller, principle of Billy Fuller Golf Design and the architect of the master plan, said the plan was meant to preserve the club's history and design and offer improved strategic quality while bringing the club up to date with specifications and features such as bunkers.

With membership expectations thought to be at an all-time high following this project, a means to standardize course tasks was necessary to raise and maintain the level of maintenance. This would act as a means to increase efficiency through communication and staff training while gaining constructive feedback from strategic club members. In 2004, two years before my arrival as assistant, the grounds department implemented a quality control program - a visual improvement process. The VIP revolves around the specifics of each job standard, which is written - in Spanish and English - specific to what was expected to help alleviate confusion. These standards pertain to:

- Greens mowing;
- Tee and collar mowing;
- Fairway mowing;
- Bank mowing;
- Landscaping;
- Lakes and ponds;
- Cart and foot paths;
- Equipment management;
- Shop cleaning;
- Practice range;
- Raking bunkers; and
- Cup and tee setting.

Taking the time to think about and write expectations for each job might seem daunting. However, with the jobs you wish to standardize, think of everything you expect after it's completed.

Each day, another supervisor or I rate the standard of each task with a score from zero to 10 (10 being best). The numbers of each rating are collected with the week's other daily readings to find a weekly average. The use of Microsoft Excel is paramount in these processes. With the weekly averages, you can create bar graphs to help measure your progress throughout the season. Posting the standards along with the graphs can help your staff visualize its progress.

Understanding that the findings of the VIP were one-sided (because only the feedback from the grounds department supervisors was used), it was decided to incorporate the feedback of selected members of the club. This is similar to a consumer survey you might receive after you purchase a product.

We offered our rating sheets to a cross section of members at the club. They included members of the board of directors and grounds committee. Overall, there were about 30 members who were solicited for feedback. In a public setting, use your golf staff and rangers to help promote golfer participation in these ratings.

When we received these rating sheets back from our members, we averaged the total of each rating to find a monthly number. This number would be measured every month in a bar-graph form similar to the number measured by the grounds staff.

From the written job standards of each task, we found another tool to help staff training. Each task is broken down again to identify the individual standards. The biggest commitment in the training process is the time needed to talk to each employee. However, it's worth it because you're able to build a connection with him and convey your concern for workplace safety and quality. Meanwhile, you can explain your expectations when using the task training sheets for each job.

Pictures are worth a thousand words and are easy ways to communicate to the staff without saying a word. By taking a picture of a correct action or incorrect action, you can give the staff your feedback. A digital camera is a valuable and necessary investment because it's part of the visual improvement process.

Hinsdale has an in-depth program using ratings, charts, photos and written standards. This might not work at every facility, but incorporating the photos to communicate to your staff or writing standards for the jobs is valuable. This might help organize your department better. The greens mowing standard (see below) is just a template to get you started.

This subjective program is a relatively objective measuring tool to improve operations. VIP helps streamline communication and training with the staff and golfers.

When I began on a golf course crew 11 years ago, I never thought training and communication skills gained through a quality control method would be some of the biggest skills necessary for success. Now I know it can be invaluable if done properly.

---

John Ekstrom is the assistant golf course superintendent at Hinsdale Golf Club in Clarendon Hills, Ill. He can be reached at snapp79@aol.com or 815-922-0587.

---

**Green mowing criteria**

- Debris removed before mowing
- Greens mowed in same direction
- Mowing lines straight
- Overlap minimally without missing
- Turns properly made off collar or on mat
- No scalping on greens or roughs
- Clean up passes properly
- Flags in cups without damage
- Grass clippings not noticeable
- Nursery mowed properly
- Equipment cleaned, fueled and stored
- Additional item
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DEFINING AN ARCHITECT

In previous columns, I’ve written about professional golfers being called golf course architects. Alert readers know that I don’t consider most of them architects, which begs the question, “What’s a golf course architect?”

The American Society of Golf Course Architects defines the term in its membership process as the person most responsible for the final form, look, character, etc., of the golf course via the routing, plans and field work. The architect must possess a unique combination of artistry, engineering, knowledge, training and experience in all (or most) of the disciplines required to take an idea from concept through construction, including:

**Golf, golfers and golf history** – Most architects study historic golf courses to learn the game’s strategies, shot values and subtleties. We know how it’s played by the best and the worst. We make realistic design decisions based on the understanding of the limits of players and equipment. We also know club members and club politics well through our experiences and help guide everyone involved through an emotional process.

**Landscape architecture** – Architects are often trained in landscape architecture, which has close parallels to golf course design, including land sculpture to create visually appealing courses. Aesthetically pleasing courses are most likely designed by someone with rare God-given artistic flare who chooses to apply that flare to golf course architecture. It’s difficult to put a dollar value on artistic flare, but it’s a necessary part of great golf design that most people don’t have.

A professional design also means creating a technically sound golf course with properly built greens, tees and bunkers, effective drainage and turf, proper safety buffers, good circulation and dozens of other items that few golfers realize are important but which must be incorporated into the design seamlessly.

In addition to basic design skills, golf course architecture requires substantial knowledge in areas such as:

**Environmental science** – Well-designed courses are compatible with nature, properly feature and preserve natural landscape surroundings, and meet stringent environmental codes and regulations.

**Civil engineering** – Translating great design ideas into reality requires knowledge of surveying, land planning, site design, construction regulations, aerial photography and topographic maps, irrigation hydraulics, pumps and piping systems. The old axiom of “drainage, drainage, drainage” applies, and golf course architects can plan drainage that keeps the course in play and meets environmental guidelines. Even cart paths – so distracting and yet so integral to modern golf – require experience and thought to properly lay out for aesthetics and convenience.

**Agronomy** – An architect must provide a golf course superintendent with the right tools in terms of irrigation, drainage and soil mixes to provide optimum conditions, and must understand agronomy and water quality.

**Cost estimating** – Sooner or later, a project comes down to money. Using knowledge gained from past projects and specific plans and specifications for a project, an architect can present realistic budgets necessary to obtain adequate financing, often with great accuracy early in the process.

**Contracts, plans and specifications** – Few businesspeople would undertake multimillion dollar ventures without proper contracts, and golf course construction is no different. Golf course architects create detailed plans and specifications covering all phases of golf construction to protect a club’s interests. They assist with negotiating the best possible terms and price with contractors who have more experience in these contracts than a typical club.

**Project management and construction** – Proposing designs that can be built cost effectively and regular construction monitoring for quality control require an understanding of golf construction components, including heavy earthmoving. To minimize down time and optimize grassing windows, project scheduling also is critical to success.

While great players, average players, superintendents, club managers, historians, committee members, contractors and suppliers can make valuable contributions to golf course development, all have limited perspectives, and none has the aforementioned skills. Through professional training and experience, architects use those inputs to create realistic, quality and long-lasting designs and construction specifications that work well in all aspects, either using their own design ideas or acting as the musical conductor to orchestrate the members of the band to move the project in the right direction.

It’s difficult to measure, but architects earn their fees by avoiding mistakes or unsatisfactory designs that often require rebuilding, providing competitive bids from contractors to assure the lowest qualified price and monitoring construction to assure the client gets all he paid for. It’s more likely the client will enjoy years of trouble-free golf and spend less money long term.

The best way to save money is to use a golf course architect to design and head a construction project, rather than saving design fees and paying later for unsatisfactory designs and construction projects. GCI
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through the years, I’ve visited more than a few GCSAA affiliated chapters delivering educational programming of one sort or another.

Invariably, in recent years (including this year), I’ve been approached by a chapter board member or two and asked whether I was seeing what they’re seeing: chapter members’ growing indifference to supporting chapter and GCSAA programming?

When I ask what’s the evidence supporting these observations, I’m told indicators are declining membership development and diminished interest and participation in formerly well-received programs such as local education, national certification, tournaments, social events and fundraising.

My answer to the original question, asked on each occasion, has been yes. I’ve also seen this same pattern for several years through dozens of interactions with chapter and GCSAA members. When you discuss the plausible reasons why these situations have developed with chapter leaders, it quickly becomes clear there are justifiable reasons for the growing member indifference. For example:

• While an old continuing story, few things bother GCSAA members more than knowing about 80 percent of PGA and CMAA members enjoy the benefit of written contract security but GCSAA members don’t.

• Because the chapters are the political power base of the association and wish to maintain control over GCSAA elections, they’ve been able to discourage individual member voting for some time – only one in 1,000 eligible members vote individually in GCSAA elections each year. (A recent GCI electronic poll showed 76 percent of GCSAA members voting want the opportunity to vote as individuals.)

• Because of the limited program development experience of the GCSAA boards and staff through the years, a long list of necessary precedent setting educational programming doesn’t get into the developmental pipeline.

• Members don’t respect the manner in which board members’ enjoy a lifestyle well above that of the membership (i.e., expensive family travel and cash perks) when no other organization in golf, including the PGA and CMAA, does this.

• The GCSAA board’s long-standing lack of transparency offends many members. For example, board-meeting minutes (with voting records) are no longer published, and the right to have access to pertinent fiscal data and policy-making discussions are denied to members. How, then, can GCSAA members vote responsibly to reelect board members or elevate board members to officerships when the voting records of then-serving board members are also denied to the membership?

members don’t.

GCSAA bylaws deny the membership of notice by the membership that it will be

While the coming 2008-09 GCSAA board can’t be held accountable for what has transpired in the past, it’s being put on notice by the membership that it will be held accountable for the degree to which it supports membership rights and how effectively it restores confidence in, and respect for, the association’s mission statement.

Perhaps, the best way to educate and convince the next and immediately following GCSAA boards they must accept the responsibility to change the present organization culture is measure to what degree existing policies support the GCSAA mission statement, which is:

“The GCSAA is dedicated to serving its members, advancing their profession, and enhancing the enjoyment, growth and vitality of the game of golf.”

I doubt veteran GCSAA members would give more than a “3” rating out of “10” for the quality and effectiveness of present GCSAA performance when measured against the noble intentions as expressed within this mission statement. I don’t suggest this low rating to embarrass anyone, but you can’t fix what you don’t know is broken. The GCSAA mission statement isn’t broken, but the association’s commitment to serve its membership and to advance a profession is.

The two immediate board objectives that would effectively begin to right the ship (after bringing in a proven program development capability on board) are:

• Quickly jumping on the painful, family debilitating, but very addressable lack of written contract issue (see my October 2007 GCI column); and

• Immediately establishing the policy of presenting board meeting minutes (with voting records) on the GCSAA Web site. Nothing will earn the trust of the membership more effectively than transparent board performance.

I can’t imagine a GCSAA board that wouldn’t welcome this unique opportunity to serve its membership in a more profound way.
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Hiring Right Requires Planning

"I can't find good help!" I hear this all too often from golf course superintendents and managers. Hiring is often difficult and frustrating. (Actually not unlike looking for a job.)

During the 20 years I’ve worked with superintendents, I’ve never heard one exclaim: “I can’t grow excellent turf!” It’s not because growing excellent turf is easy. Superintendents grow well-conditioned turf because it’s their job and they work year round planning it.

Similarly, hiring is an integral part of a superintendent’s position. Those who successfully hire great employees have a hiring plan and work year round at it. Successful hiring also makes growing healthy turf easier. A hiring plan includes preparation, recruitment and selection. Here are some suggestions for creating a hiring plan:

Be a preferred employer. Think about how you attract new golfers or members. You probably advertise, but the image or reputation of your facility is central to successful advertising. A good product or service is easier to market than a crummy one.

So, what’s the image of your facility and maintenance staff as a place to work? Just like advertising a product or service, hiring is easier with a great image or reputation as a place to work. We call such a facility a preferred employer.

How do you become a preferred employer? Just as successful advertising of the course starts with a great course, the key to being a preferred employer is being a great place to work. This means creating a work environment and team spirit that results in employees with superior productivity and extraordinary job satisfaction. This, like growing well-conditioned turf, is a year-round job.

Build your hiring plan around competencies. The reason for hiring is to have employees who are productive, who succeed. Those successful characteristics are called competencies – the combination of experience, skills, knowledge, performance behaviors, and personal attributes and attitudes that contribute to employee success. Based on my experience working with superintendents and a recent visit with a local superintendent, an example set of competencies for a maintenance staff position are reliability, identifiable successes and a willingness to learn.

Because most maintenance employees begin with little or no directly relevant experience, the identifiable success competencies are a record of success in whatever the candidate has done – school, other positions, volunteer work, etc.

Recruitment. The goal of recruiting is to reach and persuade a large number of qualified candidates to apply for the position that’s open. When a company advertises – let’s use Subway as an example – it promotes the positive attributes of its sandwiches, convenience and quality ingredients with the objective that potential customers will purchase its sandwiches.

Similarly, with recruiting, employers promote the positive attributes of their facilities and open positions. With recruiting, employers provide more detailed information about what will enable a potential candidate to succeed in the position – the competencies.

Sadly, positive attributes are lacking in most recruitment materials I read. Recently, I was teaching a seminar for superintendents, and they had difficulty moving past a concern that they couldn’t offer a competitive wage. Compensation is important but not nearly as important as most think. Do superintendents enter the profession for the money? Take the time to brainstorm the positives about working on a golf course maintenance crew. Some include:

- Working outdoors;
- Operating modern equipment;
- Completing a work day by mid-afternoon;
- Having a regular schedule;
- Being part of a small, close-knit team;
- Learning new skills;
- Taking advantage of opportunities for advancement;
- Working with an experienced supervisor;
- Gaining work experience; and
- Playing golf.

Include the aforementioned positives in a job announcement, want ad or Internet job service for recruitment. An example is: “Scenic, local golf course – Successful Valley Golf Course – seeks reliable individuals for seasonal, full-time golf course maintenance positions. Experience isn’t necessary. Applicants must have a record of success in school, previous jobs or volunteer activities and be eager to learn. Our valued employees work as a team with state-of-the-art machinery. They’re supervised by knowledgeable, skilled managers. Spend a summer with us. Work hard, play some golf and leave much better prepared for your next position. Call or apply at…”

Note the inclusion of the competencies and positives of the Successful Valley Golf Course.

Selection. A planned, professional selection procedure highlighted by an excellent interview is necessary to complete a year-round plan to hire excellent employees successfully.
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RESPECT AND RECOGNITION

On Sept. 1, 2006, 12 equipment technicians met by conference call to discuss starting an equipment technicians association. During that call, we decided this type of association was long overdue and it would be increasingly necessary for the development of the equipment technician position.

The equipment technician’s role during the past 20 years has developed into much more than just a person on the staff who keeps equipment operational. With the increasing number of golf courses throughout the world, there aren’t enough skilled technicians to meet the needs of every course. There are many reasons for this, however, we believe lack of awareness of the career opportunity is the biggest one.

How can you tell the difference between a skilled and unskilled technician? Is it the way he looks or dresses? Is it how quickly he can get a piece of equipment up and running? Is it the organizational or management skills he possesses? Unfortunately, there’s no standard for measuring effectiveness, so everyone’s perception of a skilled technician is different.

The GCSAA helped develop the superintendent position into one that’s matured throughout the years. Superintendents as a whole have taken on more responsibility and, in turn, have gained much more respect.

It’s for these reasons an equipment technicians association is being developed. An equipment technician is responsible for all the equipment that maintains the golf course daily and has a duty to make sure every member and guest experiences a golf course that’s in beautiful condition every day. The position technicians hold can help determine whether a customer returns to the golf course to play again or if it’s the last time he sees the golf course. In short, equipment technicians help support the revenue flow to the golf course.

On Jan. 1, 2007, the membership of the International Golf Course Equipment Managers Association elected its first set of officers and board of the association. The board consists of equipment managers and technicians from throughout the world who’ve experienced many types of challenges in the industry. With the formation of committees, the association is able to have many more individuals worldwide – from industry leaders to assistant technicians – so everyone has the opportunity to assist expanding the knowledge and professional image of every technician, from the high-end private clubs to the small-town public facilities and distributors.

During the past year, the IGCEMA has achieved many things. We’ve hired legal counsel and an accountant to assure our path to provide a strong platform for coming years is legal and consistent. The IGCEMA officially became IGCEMA Inc. Oct. 12, 2007. We also joined the Federation of European Golf Greenkeepers Association’s road show this year in South Africa where we taught three seminars about how to organize a workshop.

The number of technicians in our industry is declining quickly and isn’t keeping up with demand. The IGCEMA has continued to progress – it has membership in nine countries, and most recently, has been recognized by the R&A on its best practices Web site (www.bestcourseforgolfcourse.org) as an international organization.

Many of these achievements wouldn’t be possible without the overwhelming support we’ve been given by the equipment manufacturers, superintendent/greenkeeper associations and the technicians throughout the world who’ve embraced the association and want it to succeed. Despite the many accomplishments during our one year of existence, we have many more strides to make.

The IGCEMA has many things planned: a certification program; exhibiting at the Golf Industry Show; launching our environmental initiative and continuing to add local technician associations as affiliates to our organization, among others. We’ll also make a big push to increase awareness of the association in the industry to help increase membership.

Another key focus will be encouraging more technicians to work at golf courses. The number of technicians in our industry is declining quickly and isn’t keeping up with demand. Many colleges in the U.S. are struggling to attract students who are interested in being equipment technicians. While the equipment technician job has changed throughout the years, the IGCEMA would like to have it recognized as an important and rewarding career. This is no easy task, but if it’s not addressed, it will hurt golf in the U.S. and abroad.

For the IGCEMA to make these strides, the industry needs to understand the value of equipment technicians, which is an integral part of the success of a golf course management team. Professionalism, standards, education and achievement should be recognized, nurtured and respected.

It’s the goal of the IGCEMA to develop this idea and expand it worldwide. Doing so will encourage others to enter the profession. We intend to work with superintendent associations and manufacturers to develop this association and profession into one that gains the respect and recognition that’s long overdue and much needed.

**Steven Tucker** is the equipment manager at the Ritz-Carlton Members Golf Club in Bradenton, Fla., and the president of the International Golf Course Equipment Managers Association. He can be reached at 941-309-2913 or steven.tucker@ritzcarlton.com.
The balancing act between the Golfer, the Superintendent, and the Grass Plant led one Superintendent to remark, “There is no way out, and no excuse for a lack of turfgrass quality.” He uses SURFSIDE 37. Survival using plain water has been the historic approach to turfgrass culture. SURFSIDE 37 changes the membrane characteristics and metabolic rate of the cell. You deal with a different deck of cards. Plain water will never fit the bill. **Water Savings** start before the season begins, and ends when the season ends. Depending on your experience with SURFSIDE 37, you must ponder if it is you or the Wetting Agent that is growing the grass. If your decision is arbitrary — “It’s time to put the Wetting Agent out” — you have already gambled away recovery time in the **Water Savings** battle. Wet or dry, the grass plant born and bred on a SURFSIDE 37 diet is a biological gem. This is not in the Turfgrass Textbook — some think it belongs in a Joke Book... take your pick! We prefer the words of a Superintendent who states, “The spray tank never leaves the barn without SURFSIDE 37.”

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**SUPERINTENDENTS SPEAK OUT ON WATER SAVINGS**

**1980**

“...During 1980, I treated one green with SURFSIDE 37. We syringed the treated green a couple of times during the season, the rest of the greens required over 50 days of syringing... that one SURFSIDE 37 green was incredible! During 1981, we treated all the greens, and only had to syringe a handful of times - maybe a dozen times all summer - and most of that was on the high spots. 80% to 85% reduction in syringing during the past ten years has meant major water and labor savings...”

**1983**

“...We use city water - we’re on a meter. Based on comparable figures for 1980, we reduced water use by 20% in 1983...”

**1985**

“...This year we would water Friday night, and then wouldn’t water again until Sunday night. We used 30% less water... didn’t syringe once this year... just didn’t need it! When we first went on water restrictions, SURFSIDE 37 kept our fairways alive during that long July/August stretch. You can use it anytime... it doesn’t matter how hot it is. We held our worst fairway with a total of 5 gals. per acre...”

**1988**

“... With SURFSIDE and our hand-watering program, we only water greens two times a week. We required 50% to 70% less water on greens than when I arrived here and a half years ago. We spike and top dress the greens every two weeks, and apply SURFSIDE 37 following these cultural procedures. We also Hydroyect ten of our twenty greens each week from April until September. We use the SURFSIDE PELLETS on the hose via the Hydroyect. This works great in getting the product into the root zone. SURFSIDE 37 is a vital part of our turf management program...”

**1993**

“...I saved more than 90% of my syringe labor budget. Afternoon watering was basically eliminated. During the summer of 1993 we syringed less than ten times in the afternoons. During the summer of 1994 we only had to syringe two afternoons. SURFSIDE 37 has helped eliminate hard to wet areas: by treating the entire green complex, water movement through the soil has been improved. This has decreased the need for daily irrigation, and nearly eliminates the need to syringe during the day. We have saved our operation over $7,000 per year in labor costs during the summers of 1993 and 1994...”

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SUPERINTENDENT ASATO-SAN SAYS, “I TRIED IT, I LIKE IT, I USE IT... AND MY ASSISTANT LOVES IT!!!”

Japan PGA Championship
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LEADING SURFSIDE COURSE ON OKINAWA

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Successful business tips

Bob Higby, president of Independent AgriBusiness Professionals, spoke about what it takes for a business to be successful at an Independent Turf & Ornamental Distributors Association meeting in October. Service is key, but the biggest challenge for most companies is differentiating themselves from competition. The following are some of Higby’s tips for success for distributors and manufacturers. Superintendents might benefit from a few of these, too.

• Retain qualified people, beginning with the owner’s commitment.
• Empower employees.
• Have an open-door management policy with all employees.
• Make sure employees are aware of their roles in the company’s success.
• Strive for very little turnover. As a result, customers see the same person regularly, and employees know customers’ likes and dislikes and can build relationships more easily.
• Meet regularly with personnel.
  • Service people should wear a uniform with a name on it so customers know who that person is, what he does right or wrong, and what company he works for.
  • Focus on selling marketing solutions rather than products.
  • Focus on your business, not the competition.
  • Offer competitive compensation/performance packages. Pay for performance based on profit, not gross sales.
  • Sales reports should enable analysis and inventory controls.

Synthetic turf option

Synthetic turf is a viable option for tee boxes on driving ranges at public and private facilities. When debating whether to install synthetic turf, consider these five points:

1. Frequency of use. Turf that doesn’t wear out as fast as natural turf is attractive for busy driving ranges. Most facilities, especially in the Northeast, shut down ranges by December and, generally, don’t reopen them until March or April. With synthetic turf tee boxes, ranges can stay open year round without maintenance downtime and are ready for practice on those rare 60-degree days in January.

2. Maintenance. If you’re spending too much time and money reseeding the range, consider switching to synthetic turf, the maintenance of which is almost nothing. A leaf blower is needed to clear any surface debris, and a “no chewing gum” rule is a good idea because it’s not easy removing gum once it’s embedded in the turf.

3. Durability. Synthetic turf tee boxes can be used more often for longer periods of time. Because synthetic turf isn’t at the mercy of inclement weather, superintendents can maintain the integrity of the range while reducing maintenance costs.

4. Turf composition. There are two viable options when selecting fiber and infill. The first is to install a strong, durable polypropylene fiber that can be filled in with sand. The second is a durable, abrasive, dense nylon blade that will stand up to wear and tear. Sand infill isn’t necessary with dense nylon tee box turf.

5. Drainage. When tee box lines are spread across a larger surface area, it’s useful to implement a drainage system to ensure quick water removal. A stone base composed of two to three inches of a larger, crushed stone measuring three-quarters of an inch is recommended. That layer is topped off with a 2-inch layer of a finer, angular stone followed by a fill of stone dust. The entire stone base then gets compacted with a vibratory plate or roller to give the turf a precise level base.

Source: Sprinturf, a designer and installer of synthetic turf systems in Wayne, Pa.
Crabgrass is tough. And you don’t want to find it in your greens. Stop it before it gets started with a pre-emergent you can rely on.

Extensive testing has demonstrated the effectiveness of Bensumec™ 4 LF and Pre-San® Granules for seasonal control of crabgrass, goosegrass, annual bluegrass and many other undesirable grasses and broadleaf weeds.

Both Bensumec and Pre-San provide the two key pre-emergent benefits on your greens: highly effective weed control and high turfgrass tolerance.
Facilitating the FUTURE

Joe O'Brien talks about The First Tee, fond memories of the GCSAA and being reunited with Steve Mona

BY PAT JONES

For a guy who says he didn't like teaching, Joe O'Brien sure seems like he's spent his life doing it. For almost 17 years at the PGA of America, he put together programs to help teach golf professionals how to do their jobs successfully. For seven years as the c.o.o. of the GCSAA, he helped teach the association's staff and leadership a new way of doing business. And for the past six years, he's been a driving force in teaching values to children through The First Tee organization.

O'Brien is an Illinois native who grew up loving and playing every kind of game that featured a ball. He attended the University of Illinois, graduated with a B.S. in marketing (he later earned an MBA at DePaul) and ended up as a high school teacher in the Chicago area at age 25. He wasn't thrilled with it and decided to pursue a career in sports.

He applied to professional baseball clubs and different golf associations. He lucked his way into an interview with Gary Wiren, Ph.D., the legendary PGA executive. The PGA wanted to expand and upgrade their education programs and needed someone. O'Brien was out of teaching ... and back into teaching.

He spent almost two decades building and refining education and training programs for the PGA and becoming a fixture in the industry at conferences and events. He left the PGA for Marriott Golf for four years during a time when the hotel company was attempting to expand dramatically into facility management. After that, he did a brief stint with a D.C.-based hotel association before learning the GCSAA was looking for a new executive team. He was a finalist for the c.e.o. position along with Steve Mona and a couple others. Eventually, the GCSAA board made the wise decision of putting Mona in the "Mr. Outside" leadership slot and making O'Brien "Mr. Inside" to manage the daily operations.

Most superintendents probably remember O'Brien best for his work facilitating dozens of committee meetings. His constant curiosity and willingness to guide members to good decisions was a hallmark of his time in Lawrence, Kan. He also ended up as the GCSAA's point-person on environmental issues — a topic he admittedly knew little about at the time — and did such a good job steering the association's efforts the board rewarded him with the President's Award for Environmental Leadership, an unprecedented honor for a member of the staff.

He left the GCSAA in 2001 and landed at the still-young, still relatively undefined First Tee. His role — to develop programs and educational concepts for the
Great turf is built on commitment.

We know how important beautiful turf conditions are to the game. For the past 53 years, we’ve owned and operated our own golf course. It’s that hands-on experience that has taught us just how much energy, knowledge and passion superintendents put in to turf to keep it looking better... and playing better. Maybe that’s why all of us here at Cleary are uncommonly committed to working with you to keep your turf looking and playing at its best.

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Since 1937, we’ve been listening to the ideas and suggestions of superintendents to help us develop our line of exceptional turf products. Backed by our 70 year tradition of excellence in product research, innovative formulation, rigorous testing and field support, Cleary products have become the disease control solutions you can count on – day in and day out.
Cleary has always been and will remain an excellent resource for superintendents. More than a supplier of superior turf products, we’re your long-term partner in creating turf conditions that will make any golfer’s day. For more information about our products, contact your local distributor or visit www.clearychemical.com.
organization’s 200-plus chapters – fits the teacher in him perfectly. Now, as The First Tee celebrates its 10th anniversary and attempts to expand programs to offer golf as a curriculum for gradeschool students, O’Brien is back trying to teach stuff to kids – but this time, his classroom has 1.5 million students throughout the country.

WHAT IS YOUR JOB EXACTLY?
I’m responsible for developing education programs for the First Tee executives and chapters. That includes things such as curriculum for the kids and certification for our adult volunteer leaders. I’m also trying constantly to take the pulse of the chapters and the industry. I’m always checking financial reports, surveys, trends, etc., looking to see how we’re doing. We’re constantly benchmarking. When we were growing rapidly

quantitatively, there still was some question about how we were doing qualitatively, so we have metrics to look at that as well.

WHAT SURPRISED YOU WHEN YOU FIRST JOINED THE ORGANIZATION?
It’s completely different from a junior golf program. We teach honest-to-goodness character development. We don’t teach values, but they learn values. Take a typical junior golf program and turn it upside down. That’s us. We’re more focused on the development of children than the development of golfers. Kids who get into formal programs are more than six times more likely to play as adults, so eventually it will have an effect. But that’s not the point.

We’ve had three different universities measure the skills and behavior we’ve helped the kids develop. It works.

I was also pleasantly surprised at how many successful people view The First Tee as their way to give back to golf. They genuinely want to make a difference through the game of golf because it

never played golf enjoyed it. So, it got big quickly, and Golf 20/20 moved it over to us to manage and grow. The PGA Tour events got behind the idea and helped fund it in their communities, and we’ve had good local and corporate sponsorship as well. It’s a main priority for us now.

This is different than our general goal of character development. The point of this is to equip kids to enter the world of golf with acceptable skills and etiquette. It’s different from other sports taught in schools, and that was difficult. You have to deal with safety issues and a variety of other challenges. But, it’s definitely taking off – we’ve reached 1.5 million kids. Our goal is to reach to 4.5 million kids eventually. We’re pretty good at making our goals.

I WAS SURPRISED YOU GUYS HAVE A SMALL STAFF.
We don’t need much administration. Our job is to help chapters find kids and engage them. We’re focused. We’re also lucky that we can rely on the PGA Tour and World Golf Foundation for that.

WHAT WOULD YOU CHANGE TO MAKE THE GROUP ULTRASUCCESSFUL?
The First Tee is basically just a network of chapters. If I could change anything, it would be to consistently attract executives and develop boards that are all high quality. We’re only as good as our chapters, so the leadership at that level is critical.

TELL US ABOUT THE GRADE-SCHOOL GOLF CURRICULUM PROGRAM.
That grew out of the Golf 20/20 initiative a few years ago. The idea was to provide a curriculum for phys ed teachers to use in the schools to introduce kids to golf and its values. It was successful immediately. Even teachers that had

“Just by understanding the program, they can influence people. Superintendents have more influence than they might believe. They can help spread the word.”
- JOE O’BRIEN
HOW DO FIRST TEE CHAPTERS DIFFER FROM THE TYPICAL SUPERINTENDENT OR PGA CHAPTER?

Our chapter boards have an amazing amount of diversity. We have people of color, different genders, tons of folks from different business and personal backgrounds, including PGA or LPGA members and some superintendents. There are also many people with influence in the community. It’s a melting pot of all sorts of different people who share the same vision. We’re trying to give them direction. Obviously that’s a lot different than the GCSAA or some of the other groups whose boards are largely similar professionally.

We held a network meeting for our chapter leaders in November, and I kept thinking it would be impossible to find 700 people in the same room that spanned the ranges of gender, age, ethnicity, wealth, etc., as we had at that event. That diversity creates challenges for us in terms of educating and equipping the chapters, but it’s also a big part of our strength.

HOW CAN SUPERINTENDENTS GET MORE INVOLVED?

I’m going to attend the Golf Industry Show in Orlando and help man our booth, so I made a list of things superintendents can do. We need them to serve on local boards, committees and in leadership positions. It morally fits so well with the way superintendents look at things. We don’t have a specific element of the curriculum that deals with agronomy or the environment, but it’s important, and it’s extremely interesting to the kids when superintendents become involved.

Also, the facilities need resources. We’re always looking for in-kind gifts – such as used mowing equipment, flagsticks, benches, ball washers and construction work – and money.

Lastly, superintendents can coach. There are many superintendents who are good players and teachers, and this can be fun for them. Just by understanding the program, they can influence people. Superintendents have more influence than they might believe. They can help spread the word.

WHAT DO YOU MISS ABOUT YOUR DAYS AT THE GCSAA AND THE TURF BUSINESS?

The members. I had so much respect for their belief in their occupation. They’re so passionate and have so much pride. It was all about what was right, not about how much you make.

I also miss the underdog mentality. We were always fighting for more of something, even if it was just a seat at the table for some meeting. It was never routine. I loved the challenge. I also liked the diversity of things I was involved with: education, the trade show, the magazine, the foundation. You name it, and it came across my desk sooner or later.

WHAT WERE A COUPLE OF YOUR FAVORITE MOMENTS DURING THAT TIME?

Receiving the President’s Award for Environmental Leadership was probably – outside of my own family – the most significant thing that’s ever happened to me. I loved the challenge of working on the environmental programs, but the award was a surprise.

I also liked facilitating the planning group and other committee meetings. The first chapter delegates meeting was pretty wild, too. I asked one question and, three hours later, I was still writing ideas and issues on easels.

We had many great people on staff, too. Turnover was tough, but there was a tremendous pool of talent at a great facility. People outside the association would come visit and be shocked at what they found.

WHAT CHALLENGES AWAIT STEVE MONA AT THE WOLD GOLF FOUNDATION?

First, he’s the right person for the job. You need someone that can coalesce a bunch of different things and bring people together. He has such good ambassadorial skills. The challenge is that he’ll be dealing with new systems and new undertakings. He has to bring old things together, start new things and internationalize things.

ANY FINAL THOUGHTS FOR YOUR OLD FRIENDS ON THE SUPERINTENDENT SIDE OF THE BUSINESS?

I still admire the job they do for golf and their care for the environment. I’ve gained even more respect for their focus at the GCSAA, and it’s great to see them finally getting more of the recognition they deserve.

WHAT’S THE SECRET TO HAVING A SUCCESSION OF GREAT JOBS IN THE GOLF INDUSTRY?

You have to knock on doors and push the envelope of the opportunities out there. And most of all, work hard. GCI

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The housing market downturn hampers new golf course construction

You've read about it in newspapers. You've heard about it on TV. And you even might be in the thick of it. It's the housing market. And yes, it's in a slump.

While some say it's a reflection of the overall economy, all agree it's part of a downward cycle that will improve eventually. When that turnaround begins or when this cycle bottoms out, nobody knows for sure. But one thing is certain: The poor housing market has affected the overall golf course industry negatively.

The impact on the golf market is noticeable because builders and developers have seen the number of new projects steadily decline since January 2007, says Henry DeLozier, v.p. of golf for Pulte Homes. About 100 new golf course projects opened in 2007, and that number will be down decidedly in 2008, DeLozier says.
“Many builders are changing the timing of their projects to coincide with the resurgence of the housing market,” he says. “There are some projects being put on hold amid development. If one starts a project then stops it, efficiency is lost and additional costs increase because the builder has to remobilize. The vibrancy of market and cost of capital are two good reasons to stop building.”

Almost everyone in the golf industry is affected by the housing market because everyone plans on new projects rolling out, DeLozier says.

“One in five of our projects have a golf course in it,” he says. “Most of the projects include golf as a lifestyle. The housing market drives all golf at Pulte. We don’t build free-standing golf courses.”

Like all of the big home builders, Pulte Homes projected a slow 2007, but most builders have found the downturn to be deeper and more prolonged than expected, DeLozier says. However, few projects get scrapped altogether because entitlements are set and deeds are tied to a master plan. Once builders start a development, they see it to fruition. An exception is if a project is undercapitalized.

Architects see the housing downturn affect golf course construction through their project lists. Six of Arthur Hills/Steve Forrest & Associates projects are under construction (three in the U.S. and three international), and 26 projects are on hold because of financing, owner decision-making, permitting and government regulations, says Steve Forrest, the firm’s principal and president of the ASGCA.

“The housing downturn has delayed projects,” says Forrest, adding that about half of the firm’s 26 projects are tied to residential home building.


The majority of Weitz Golf International’s volume and revenue is through clubhouse construction, says Oscar Rodriguez, v.p., construction manager. On one project, Magnolia Landing in Fort Myers, Fla., Weitz finished its job, and the developer shut it down. The course is expected to close, Rodriguez says.

Also, Weitz was working on the foundation of a clubhouse on another project in Fort Myers called Portico, and that project was shut down, and Weitz pulled off the job. However, Rodriguez says he’s not sure if the golf course at Portico will be shut down. Homebuilding started at Magnolia and Portico but now has stopped because of poor sales, he says.

“Because the developer side of construction has completely stopped, we need to focus on the private side of clubhouse renovation,” Rodriguez says.

IT’S A CYCLE
Rodriguez experienced a similar downturn during the early 1990s while with Fairway Construction, which has since been incorporated into Weitz Golf International.

“I feel like early ’90s was just the golf course industry pre-Tiger Woods,” he says. “This time around, it feels like the downturn is because of the U.S. economy with the weak dollar. California and Florida were attracting many foreign investors who wanted to take advantage of the weak dollar. The downturn is more U.S. based than I thought in the early ’90s, which was more golf industry based. We don’t officially have a
recession, but most people feel one is coming.”

Because now there’s more of a need to be bonded than before, Rodriguez doesn’t see how smaller contractors can put all of their bond capabilities into one project. Contractors need to include more renovations in their scope of work because they operate more smoothly and new construction projects can be put on hold financially at any time, he says.

“This year will be a trying year,” he says. “For example, smaller architects or subcontractors might not have enough work. It will be interesting to see who will withstand the downturn.”

For Forrest, it seems like there’s a downturn every 10 years, although Sept. 11 was a different market factor.

“We went through a period of strong renovation from 2003 through 2005, then back up to new projects in ‘05 through ‘07, then it fell off,” he says. “And builders are lagging behind architects a couple years based on the development process. Right now, builders are getting the perfect storm.”

DeLozier saw softness in the market like this in the early to mid-90s and in 1987 and 1988. The housing cycles, which follow other economic patterns, are hard to predict, but they’re a certainty. As such, Pulte is prepared.

“Pulte has a great deal of experience,” DeLozier says. “We have a seasoned senior management team that manages well through the housing sector. The company has downsized as it relates to market conditions.”

The early 1990s was the last downturn in the golf industry, but there were various components involved, says Dave Richey, senior v.p. of the country club division of Toll Brothers.

“I don’t know how long this downcycle will last, but the basic demand for home building is still fairly strong – there’s 1.5 million to 1.7 million new homes built each year,” he says. “Golf course development is totally driven by homes. Where golf courses are, they represent our largest communities. We wouldn’t have a community with a 1,000 homes without a golf course.”

Toll Brothers, which has 300 residential developments throughout the
U.S. housing starts

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Source: U.S. Bureau of the Census, NAHS

country, typically turns a golf course it develops over to members or a third party. And the reasons to build them vary.

"It's based on amenities or the number of homes in a community," Richey says. "Permitting requires them to be built. Sometimes a golf course is added to a development to get rid of wastewater."

Toll Brothers was working on a project in Naples, Fla., that was delayed further because the developer is reluctant to start right now.

"Even though things have slowed down, we're still looking for country club neighborhoods three to five years out," Richey says. "Land prices are declining, making large land tracts attractive. We're in the permitting and planning process."

HIT HARD

Superintendents will feel the ripple effect of the housing downturn because there are fewer new golf courses, which in turn, means fewer jobs, more severe competition for employment and less mobility for a superintendent looking to leave a job, DeLozier says.

Trevor Brinkmeyer is one superintendent who has felt the effects of the slumping housing market. Brinkmeyer, who's an interim assistant superintendent at Quail West Golf & Country Club in Naples, Fla., and is looking for a full-time superintendent job, used to work at the private 54-hole Shadow Wood Country Club in Bonita Springs, Fla. He was a superintendent there for five years and started out managing one 18-hole golf course. When one of the other two superintendents left, he oversaw two golf courses while the other superintendent oversaw the third 18-hole course.

Bonita Bay Group, a developer, owns and operates Shadow Wood. It's primary objective is to sell property and use golf courses as an attraction, says Brinkmeyer, who estimates Bonita Bay Group's portfolio includes 11 golf courses in five communities.

Shadow Wood, which has 1,050 members and generates about 40,000 rounds annually per course, sold out in 2006 but originally wasn't supposed to sell out until 2012, Brinkmeyer says. Bonita Bay Group wanted to turn

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were humming along nicely for a few years, but we were productive and watched our spending,” Brinkmeyer says. “I didn’t think much of it at the time because we were productive and watched our spending,” he says “But Kenyon Kyle, the former director of golf who I was reporting to, was more worried because he was in a management position and knew more of what was going on. There were no more talks of layoffs for a while, then three people were cut. Through the summer, it was like any other, but in August, I found out I was one of the cuts. It was immediate.

“Bonita Bay wasn’t selling as many homes and had to make cuts,” he adds. “The real estate market boomed, then crashed. Bonita Bay was sitting on land and had to pay the bank, so it cut labor, which is its biggest expense.”

Brinkmeyer is job hunting in Georgia, Florida, Texas and the Carolinas.

“I have an opportunity in Mexico, but it hasn’t developed as quickly as I thought,” he says. “It’s a different situation when you have financial obligations.”

INTERNATIONAL FLAVOR
But the housing market’s condition doesn’t mean doom and gloom for all. There are positives of the downturn, Forrest says.

“We stepped up the effort to work internationally, including China and the Middle East,” he says. “Once you’re there, you get some momentum. It’s a snowball effect. The nice thing is you have access to the best golf course sites that you didn’t have the opportunity to access in the U.S., such as coastal sites in Turkey on the Black Sea.”

Hills/Forrest’s international work started during the downturn in 2001, and the recent housing downturn has reinforced the firm’s decision to acquire more work overseas, Forrest says.

“It takes a while to get established overseas – it takes more leg work,” he says. “But the scarcity of qualified golf course builders overseas makes the U.S. expertise very marketable. Golf and houses is a new concept internationally, where traditionally golf courses are stand-alone. We keep scratching and clawing out there and have been able to maintain our staff of 11. You can survive.”

DOWN THE ROAD
Eventually, the housing market will improve. For example, many homes are being sold in high-tech areas and to people coming into the country, Richey says. Demand for country club communities will continue but not like 10 years ago.

“From our experience, people aren’t buying into country club communities for the golf alone,” he says. “We’re seeing decisions to live in country club communities driven by the value of the home, security, fitness, swimming and athletics. Food and beverage isn’t as big a driving factor. Golf is a million-dollar view, and only 50 percent of those living on a golf course actively golf.”

Yet, the industry needs to build shorter golf courses, Richey says. “We’re aiming for double-digit handicappers,” he says. “We want them to have a good time and a quick round. We see a decrease in the number of rounds per member but that doesn’t mean the desire to play golf is declining. Time is an issue.”

Forrest doesn’t think the premium on lots next to golf courses will ever decline because they provide recreation and beauty for the homeowner and profit for the developer.

“Golf and houses are forever married,” he says. GCI

Potential growth
As the golf industry endures the new construction downturn, it looks to the future and what’s to come. Specifically, builders and architects are planning their next projects.

Some markets that were the hottest, such as Florida, California and Las Vegas, cooled down, and some markets that were never hot, such as Minneapolis, Indianapolis and Boston, continue to perform in a steady manner, says Henry Delozier, v.p. of golf for Pulte Homes.

“There’s a little bit of growth in the resort market, and there’s a steady flow of activity on tribal lands that support gaming,” he says. “The Pacific Rim and Europe also are steady with golf course development.”

Pulte Homes has golf courses in development in Florida, Atlanta and Texas.

“There’s a great deal of activity where we’re following through,” Delozier says. “Those markets are continuing to sell well to people 50 and older.”

Florida is a competitive market that’s still experiencing a tough time, says Steve Forrest, principal of Arthur Hills/Steve Forrest & Associates and president of the ASGCA. Texas isn’t totally dead, and Arizona and Florida are the stronger markets feeling it more than some of the others, he says. The firm has projects in the works in North Carolina, Tennessee, Alabama and Georgia.

Toll Brothers has an interest in building homes and golf courses in Arizona, Florida, California and Las Vegas, which are the worst hit markets as far as overbuilding, but isn’t looking at the Northwest states, says Dave Richey, senior v.p. of the country club division of Toll Brothers.

“Our growth is somewhat driven by retirement communities,” he says. “We’re trying to sell existing home inventory right now. We’re not looking for golf course land or communities right now.”

Even though Weitz Golf International’s recent focus has been clubhouse construction, it has several new golf course construction projects in the works: Dove Mountain in Tucson, Ariz.; Red Ledges in Heber City, Utah; The Presidential in Virginia and Roco Ki in the Dominican Republic.

“We’re stable in construction because of the amount of renovation occurring,” says Oscar Rodriguez, v.p., construction manager. “We were averaging six new golf courses a year. Now we have three.”

Weitz is also working on the Rope Rider Golf Course in Roslyn, Wash. It couldn’t complete the course this year partly because there are two existing golf courses at the facility.

“The bottom line is Suncadia has plenty of land to sell, and the Rope Rider Golf Course doesn’t have to be completed from a sales point of view,” Rodriguez says. “We have completed 11 holes to date.

Weitz also is working in the Caribbean, where there’s a lot of activity.

“We’re going to have to pursue projects outside the country more aggressively,” Rodriguez says. “There is so much housing inventory in the U.S. that there will be a lapse even when the economy comes back. The economy will turn around, but golf course construction won’t pick up as quickly.”

Another area for potential growth is resort development in Mexico.

“Were always following the architects, and since they are diversifying in Mexico, we should see the same for builders,” Rodriguez says.
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The resale mower market presents several options to superintendents. The availability of off-lease mowers entering the resale market corresponds to the number of golf courses opting for leasing instead of outright purchasing. Used mowers have been available since the beginning of mower sales. Traditionally, two types of used mowers hit the marketplace: demonstrator equipment that has relatively low usage and the trade-in equipment from direct purchases that has higher usage. These items were marketed primarily through the manufacturer-connected wholesale dealers and distributors. Leasing programs changed that, introducing a new category of highly maintained, lower-usage, post-lease mowers to the golf course maintenance market.

THE OFF-LEASE CATEGORY

Overall, the availability of off-lease mowers entering the resale market corresponds to the number of golf courses opting for leasing instead of outright purchasing. When a leasing period ends, all the equipment, including mowers, reenters the marketplace. With some lease programs, the user automatically returns the equipment to the lease holder. Others include
“Here at Merion Golf Club, our members are passionate about golf and the condition of our course, so we have an active Poa annua management program. We rely on Cutless 50W because it is highly effective in reducing Poa annua infestations in bentgrass fairways. My experience with Cutless 50W is that it is less disruptive on the bentgrass, while being highly effective in reducing Poa annua populations. In addition to bentgrass conversion, Cutless 50W also provides labor savings by reducing our mowing requirement.”

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The mower resale market seeks ways to enhance the perceived value of the premium used product in the mind of the consumer. Photo: John Deere

preset or negotiable buyout options the user can consider at the end of the leasing period.

There are multiple types of companies issuing leases, too. The lease holder might be an entity linked with the equipment manufacturer or working in conjunction with the equipment manufacturer, independent leasing company or bank.

With so many options, it's difficult to determine the actual ratio of lease agreements compared to outright purchases. The National Golf Foundation provides some data based on its research. Some industry suppliers give off-the-record estimates of a 50-50 ratio based on

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their tracking figures.

The equipment coming off leases will return to the ownership of the leasing company and into its marketplace. For companies with manufacturer connections, the resale units will be handled by the wholesale distributor or dealer. The mower manufacturers have built strong distribution networks and count on these companies to support their products completely and provide superior customer service.

Nonconnected leasing entities will use other marketing sources that could be local, regional or international. These "out of channel" marketers make a huge impact on the availability and price point of used mowers.

**USED MOWER OPTIONS**

All types of mowers used on a golf course are included in most lease packages, so everything from rotary gang mowers to walk-behind greensmowers hit the resale market. Lease periods vary from three to four or five years.

"The number of annual use hours is driven by the type of mower, the physical layout of the course and the geographic region, with higher hours racked up on mowers working year-round in warm weather areas than those used in colder climates," says Mike Nesdahl, Toro's senior manager for financing and remarketing. "So the hour ratings at the end of the leasing period typically range from 600 to 2,000 hours."

As with any leasing agreement, the user is responsible for maintaining the machines to a certain standard, which is high with golf course equipment leases.

"Used mower prices generally range from 40 percent to 60 percent of what a new piece would cost," says Ed Kruse, national accounts sales manager for John Deere. "The assured certified units that have undergone the formal inspection and upgrade are more expensive than a trade-in piece that has been inspected and prepared for use but doesn’t carry a warranty."

Brian Melka, director of product management for Jacobsen, says some industry data puts the resale price from a 30-percent to 50-percent reduction from the initial purchase price.

"The important thing is how much it’s going to cost the course to maintain it and use it?" Melka says. "They’ll expect to put more maintenance into it, and while that’s not going to eat up all that price difference, it could be a big chunk of it, depending on how the machine will be used and how long it will be used."

The costs decline according to the value of the mowers. The decline typically is in relation to the hours of use rather than the age of the mower. The decline starts to level out over time with the older trade-in mowers, and by eight to 10 years of use, there’s not much value left. These older trade-in mowers might be sold at wholesale to a remarketer as is or used as a source for parts.

**WHO BUYS USED MOWERS?**

When Kruse looked at a five-year-old customer profile of those buying off-lease used mowers, it was the smaller-budget golf courses that were looking for the value and weren’t as concerned about the hours.

"With increased technology and mower advancements, everyone from the top A course to the more price-conscious privately owned public course is a potential used buyer," Kruse says. "It’s all about right-sizing your fleet for your facility and best use of available resources. Courses will supplement a new lease program with a few used units to compliment an
Used mower prices generally range from 40 percent to 60 percent of what a new mower would cost. Photo: Toro

overall program.”

In the upper Midwest, there are many nine-hole golf courses that don’t have the budget to buy new machines, says Rich Vining, sales manager for Turf Werks, a Jacobsen dealer located in Johnston, Iowa.

“With the off-lease mowers that roll over from the typical three-year lease program, they can buy a relatively low-hour machine in the 400- to 700-hour range at a reasonable price,” Vining says.

The quality of cut is a golf course’s primary consideration for its main cutting units, Melka says. Often, the used mowers are used as a back up or for specialized use rather than as the pri-
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mary cutting equipment. The specialized unit can help extend the life of the newer, primary use mower by not changing it over or putting it in the more hard-use situations.

There's a much broader market for resale of a rotary mower, Nesdahl says.

“A 6-foot rotary product can go to a landscape contractor, a corporate grounds department, a high school, even a homeowner,” he says. “The opportunities are endless. The reel mower, because of its nature and the more technical maintenance requirements, will typically come back to the golf market.”

The sports turf market is another potential buyer of used reel products.

“The walk-behind greensmowers are the slowest resale unit,” Nesdahl says. “The superintendents who walk-mow their greens have a highly labor-intensive operation and are very focused on the quality of cut, so they generally opt for new machines. Used mowers can be equipped with a higher-height-of-cut kit to fit the needs of athletic fields.”

USE EXPECTATIONS
The three manufacturers point to the quality of their products and the service capabilities of their dealers as factors that can keep equipment running for a long time. The use potential is closely tied to the use hours already on the machine.

“Often the price paid mirrors the expectations,” Nesdahl says. “If a mower is expected to provide 10 years of service and the course pays 50 percent of the original price for it, they’ll probably anticipate five years of use.”

The use period depends on how much preventive maintenance the course wants to do, how sophisticated their mechanical staff is, and how much time and money they want to invest on upkeep for each mower, Melka says.

SAVORY DECISIONS
The mower resale market has followed the lead of the car market by seeking ways to enhance the perceived value of the premium used product in the consumer’s mind. So it’s important for potential buyers to approach the used mower market with realistic expectations. They need to ask questions to determine the mower’s history and warranty details, if a warranty is provided. It’s a “buyer beware” situation if the offer seems too good to be true or the person selling the machine doesn’t know its history.

 Buyers should also consider the overall costs of ownership, not just the purchase price. Savvy shoppers look long term to determine the potential operating costs, including fuel and maintenance costs. That should be compared to the cost of a new mower and its operating costs during the same period. The new equipment will be more versatile incorporating the

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The used mower concept isn’t new to the golf market anymore, so it’s easier for dealers to sell them. Photo: John Deere

LOOKING AHEAD

Additionally, there’s a potential effect of interest rate fluctuations on the overall market.

“There’s a long-term seasonality that will impact the buy-to-lease ratio,” Melka says. “With three to five years of low rates, there’s been much emphasis on leasing as a form of shorter term ownership. That can balance out, and it can and will change as interest rates change.”

But most view used mower sales as a growing market.

“There’s a niche out there now, especially for the off-lease units,” says Mike Murphy, general manager of the Chicago location of Turf Professionals Equipment Co. “The concept isn’t new to the golf market anymore, so it’s a bit easier to sell. The product is in good shape, and the golf courses feel comfortable purchasing it. I don’t anticipate that changing in the near future.”

Nesdahl sees the opportunity increasing, and Kruse says the resale of used mowers is a growing market.

“The amount of mowers on the market is greater because the industry has grown overall,” Nesdahl says. “While the golf market isn’t growing at the previous rates, more courses are opting for leasing programs, which translates to more off-lease mowers in the marketplace.”

“The leasing of new equipment in the marketplace has been very good for us, and most of our distributors do a lot with it,” Kruse says. “In three years, that equipment still has less than half of its anticipated use expended. People see the value in that. As course operators become more cost efficient about how their money is spent, they find that equipment is a good fit.”
Almost 99 percent of off-lease used mowers are sold with a warranty. Toro and John Deere have buyer-protection programs and provide support for off-lease sales.

“The Toro Protection Plus Used program takes the worry out of buying used equipment,” says Mike Nesdahl, Toro’s senior manager for financing and remarketing. “To qualify for the program, the machine is required to go through a rigorous process covering an extensive range of details including lubricant analysis testing, tread depth testing and servicing of the reels and cutting deck.”

John Deere developed an Assured Certified Used Equipment program that includes a 100-point inspection process carried out by an authorized service technician.

“They go over the machine and replace the high-wear items,” says Ed Kruse, national accounts sales manager for John Deere. “It’s backed by a one-year powertrain warranty. With that degree of assurance, the courses are willing to accept a higher-hour used machine.”

Richard Shumate, a sales rep for Van-Wall Equipment in Olathe, Kan., says John Deere Credit notifies Van-Wall six months prior to the end of a lease program.

“They ask us to provide them with notification of the customer’s intentions on allocation of the lease units 90 days in advance,” he says. “Machines that are turned back in will be billed to the distributor.”

The decision about how to handle each unit left to the distributor varies.

“About 30 percent of our total used-mower inventory consists of off-lease units,” Shumate says. “The remainder is traditional trade-ins. Our sales staff gathers all the details about a used unit and takes photos of it. We then work with the used equipment manager to coordinate the trade value of the machine and determine the path to take in marketing it. We might sell it as is, sell it serviced and ready to operate, or, if it meets the criteria, service it for a warranty program. Every warranty step adds dollars to the overall cost of the mower, so we need to balance that with what best fits the needs and budget of the potential customer.”

Jacobsen is less involved in the resale market. Warranty arrangements are left to the discretion of dealers.

“We provide a one-season warranty on off-lease mowers, which is about six months in our region,” says Rich Vining, sales manager for Turf Werks, a Jacobsen dealer in Johnston, Iowa. “We bring in the machines, give them a work over so we know exactly what we’ve got, and make sure they’re sharpened and ready to go. With a true lease, you’ve been keeping an eye on the product because you know you’re buying it back. We’ve never had a customer turn over a lease unit that wasn’t in good shape.”

Dealers emphasize their focus on developing long-term relationships with their customers. The sales staff has a good handle on the current and potential needs of their accounts.

“We keep customer profiles and know how to proceed. If a customer tells us they are thinking about buying used equipment, we start reviewing their account and checking what they need. We then narrow it down to the type of product that best fits their needs and budget of the potential customer.”

The sales staff has a good handle on the current and potential needs of their accounts. The company has been working the off-lease resale market for about five years.

“As a distributor, we developed a plan to be prepared for these units,” he says. “Generally, we’ll sell every machine with the Toro Protection Plus. It’s 12 months of piece of mind for the customer. We start marketing three to six months ahead of time working toward having a home for the equipment when it comes in.

“Off-lease equipment is a different sale. You’re taking one solution and need to find a customer that needs that solution. The sooner we’re out there marketing it and giving our customers the awareness of it, the better the opportunity to make that match. It’s a piece by piece situation. If we have two fairway mowers and two ride-on greensmowers come in, they’ll probably go at resale to four customers.”

Every distributor shoots for a 100-percent presale of off-lease equipment, but the reality varies, ranging from 35 percent to 60 percent depending on the items coming in, the condition and use hours of the units, and the saturation level of those machines within the marketplace.
Superintendents try to keep the upper hand when battling nematodes
They've been around almost since time began and certainly eons before the first golf course was laid out over the sandy soil of Scotland's linksland. Nematodes are wormlike creatures that live in the soil and munch on the roots of turfgrass superintendents so lovingly care for. Nematodes, most of which are microscopic, are an ongoing pest management issue along a broad band that stretches from the Southeast to the Southwest and into California. While various forms of nematodes (there are thousands of species of the plant parasite) inhabit cooler northern climates, they're a more daunting problem in warmer weather and areas that have sandy soil. In Florida, for instance, superintendents must maintain strict vigilance of nematode populations, or they run the risk of losing their greens.

Northern superintendents, such as Rob Giampietro at Bulls Bridge Golf Club in Kent, Conn., are fortunate.

"We don't see many nematodes in our soil because of the cold weather," he says. "And any of the sand we've brought in is to USGA standards and arrives sterile."

Many aren't so lucky.

"Nematodes are one of our top nemeses here," says Jason Kubel, superintendent at the Tour
Nematodes have the potential to destroy a new putting green in one season. Photo: Billy Crow, Ph.D.

They usually start becoming active in April when the weather warms up and last through October. We find them mostly on the Bermuda-grass and on the greens. They're on the tees and fairways, too, but we don't spend as much time treating those areas.

ROOT DAMAGE
Nematodes feast on the roots of the turf until the grass is literally clinging with its figurative fingernails to the earth. A healthy Bermudagrass plant will have roots 6 inches deep, while grass attacked by nematodes can have as little as an inch or two of root depth.

Because many greens are constructed of as much as 90 percent sand, they present an ideal habitat for plant-parasitic nematodes. With greens that might be at a breaking point already because of low cutting heights, drought, and wear and tear, damage to the root system caused by nematodes can stress the turf to the breaking point. If left untreated, nematodes can put in motion a devastating cycle of decline that can lead to a complete breakdown in the turf's all important nutrient- and moisture-gathering processes and open it to disease and other pests.

An acceptable count of nematodes in a 100-cubic-centimeter sample of soil is between 20 and 40. When infestations occur, that number can rise well into the hundreds.

“It usually takes longer, but I've seen nematodes destroy a new putting green in one growing season,” says Kevin Lavigne, president and owner of Southern Soils Turf Management, which chemically treats between 400 and 600 Florida golf courses annually for nematodes.

A study prepared by Billy Crow, Ph.D., a nematologist with the University of Florida in Gainesville, showed turfgrass roots suffering from nematode damage have impaired ability to take up water and nutrients from the soil, thereby requiring more frequent irrigation and fertilizer applications. This, in turn, leads to a waste of fresh water resources, which have been strapped in some areas of the country this year, particularly in the Southeast. The study showed turf affected by nematodes might necessitate increased fungicide use by creating conditions ideal to the outbreaks of fungal diseases. Nematode-affected turf also is less competitive with weeds and might require increased herbicide use. In the end, the turf can become so weak and chlorotic it can wilt, thin out and, in a worse case scenario, die.

While species are many (there are more than 20,000 identified and perhaps as many as a half million crawling around), those doing the most damage to golf courses are sting, stubby-root, stunt, ring, lance, root-knot and spiral nematodes. They feed and reproduce on plants while their bodies remain in the soil or enter the plant.
to feed and reproduce. Contact nematocides have greater success on the former and systemic nematocides on the latter.

"The most damaging nematode is the sting, which is native to the sandy soils of Florida, the Carolinas and into the coastal areas of Louisiana and Alabama," Crow says. "The lance nematode is the second most damaging species, and it's found all the way from Florida to Canada and from the East Coast to the West Coast. It's the most common but not as damaging as the sting. You'll see root-knot nematodes in the Northeast, and spiral nematodes in the western states."

The farther north a golf course is located the less damage it likely faces from nematodes because growing periods are shorter and the pests have less time to reproduce, Crow says.

"In the South, especially Florida, the temperatures are warm for much longer periods of time, and there are more life cycles (generally around 21 days). About 50 percent of the courses surveyed in Florida had lance nematodes on the greens, and 50 percent to 60 percent had sting nematodes."

**DOING BATTLE**

Nematodes have always been a problem, but perhaps they're more noticeable now because of members' expectations that turf conditions be hard and fast, says Clayton Estes, superintendent at San Jose Country Club in Jacksonville, Fla. Lower mowing heights have direct correlation to the length of the roots, and shorter grass has less natural fight in it, Estes says.

For Dan Connolly, superintendent at Aberdeen Country Club in Longs, S.C., nematodes are normally an issue on the greens.

"It's important to have a solid turfgrass management program in place," he says. "The healthier the turf, the better the grass can withstand some feeding by most types of nematodes. We sample our greens monthly from March through October. If we have significant nematode damage that's confirmed by a nematode assay, we'll usually treat the damaged area with Nemacur. Taking the sample is fairly time consuming but well worth the effort."

Edward Ferreira, superintendent at Las Positas Golf Course in Livermore, Calif., has issues with spiral and ring nematodes. He also has his staff monitor nematode counts and attacks the problem when and where it occurs.

"Sand-based Poa greens that dry out quickly suffer the worst," he says. "Symptoms include spots on the greens about two to six inches in diameter. Our goal has been to build up the health and strength of the turf through fertilization and organic products and fungicides. Heavy hand-watering and the use of wetting agents are time consuming but helpful on a short-term basis."

Most superintendents in areas susceptible to nematode attack opt for the use of chemicals in their fight against the pest. Two of the more popular products have been Nemacur from Bayer and Curfew from Dow AgroSciences. Both are injected into the soil and involve a somewhat costly and mildly invasive procedure that's often best handled by an outside company.

Lavigne's company charges $390 per acre for treatment of fairways, tees and rough and 8.5 cents per square foot for greens. There are various discounts offered. Usually, one treatment
The sting nematode, which is native to the sandy soils of Florida, is the most damaging type of nematode, says Billy Crow, Ph.D., pictured here. Photo: Billy Crow, Ph.D.

Crow and other university researchers are in the process of bringing new products to market to help control nematodes.

“There’s some exciting stuff going on with biological organics and one specific bacterium that attacks sting nematodes,” he says. “It can be more of a preventive measure if applied early when nematodes reproduce. Another bacterium works as more of a knockdown treatment. We are working with chemical companies on early stage screening for several products, while others are still some years out.”

CONTROL MEASURES

There are many steps superintendents can take to safeguard their courses from nematodes. Crow advises taking samples early in the year to determine nematode counts.

“It is somewhat expensive, but when you consider it costs $12,000 to $14,000 to build a new green, and more if you want to do it to USGA specs, it’s a cost-effective treatment,” Lavigne says.

PESTICIDES PRODUCTS

While fumigants have proven effective, concerns about the nematicides leeching out of the treatment area and remaining in the soil for long periods of time have led to stringent environmental regulations. Thus, superintendents are losing some of the tools they can use in the fight against nematodes. Nemacur, which as been used for more than 30 years, is being phased out by the U.S. Environmental Protection Agency. Bayer has a large supply of the chemical in its distribution channels that has to be sold by May of this year, says Nate Royalty, insecticide technical development manager for Bayer Environmental Science.

“We recommend superintendents buy what they need for a two-year supply,” adds Ben Cicora, herbicide business manager for Bayer. “Once the product is in the superintendent’s hands it can be used indefinitely.”

It’s not an ideal situation for the superintendent, but Bayer is dedicated to finding a replacement as soon as possible for Nemacur, Royalty says.

Dow’s Curfew product has been in use in the agriculture industry for a number of years and is used widely in the golf industry for nematode control. The company initiated a customized program were it sells the product to a customer and arranges for it to be applied by a third party.

“We did this for two main reasons: One is stewardship and ensuring the proper handling of the product, and the other is efficacy,” says Dennis Lane, marketing specialist for Dow AgroSciences. “The performance of this particular product is very subject to its proper application.”

Dow has updated the active ingredient in Curfew (1,3-dichloropropene) and made it better from an environmental-impact standpoint, Lane says.

“We had to go through a reregistration process, and it was one of the few fumigants to be recertified for use on golf courses,” he says.

They didn’t have the full data package that they need for a two-year supply,” adds Ben Cicora, herbicide business manager for Bayer. “Once the product is in the superintendent’s hands it can be used indefinitely.”

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Mister systems address the maintenance needs of bunkers and approaches
The origins of bunker misters are unclear, but their effectiveness isn't. Out of obscurity, they - along with approach misters - are becoming a fixture at high-end golf facilities. This trend is acclaimed by superintendents and golf course architects.

“It's a great tool many superintendents would like to have,” says Craig Fuller, CGCS, of Willow Oaks Country Club in Richmond, Va.

Bunker misters are being installed at Willow Oaks as part of a considerable course reconstruction.

“I can maintain a more consistent bunker, playabilitywise, with this mist system, and I have head-to-head control,” Fuller says. Installing bunker misters at Willow Oaks makes sense to Lester George, the architect involved with the project. Misters also make sense at the Country Club of Florida, where George worked on another project.

“Bunker faces are critical to design,” he says. “If they’re overwatered, they’re not functioning properly. If they’re underwatered, they have an aesthetic problem. So it's critical to get the proper

BY MARK LESLIE

Bunker misters can be viewed as part of a water-conservation effort. Photo: Willow Oaks Country Club
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The use of bunker misters helps avoid flooding bunkers and overwatering green surrounds. Photo: Willow Oaks Country Club

amount of water at the right time without overwatering the green surrounds and flooding the bunker. The beauty of bunker misters is that you avoid both these problems.”

MORE CONTROL
Misters are similar to those used in standard irrigation systems in residential areas in which pop-up heads are operated by an electric valve, which reduces pressure to the point where it will operate safely. Depending on the superintendent and bunker style, the mist might go all the way around a bunker or only along the upper portion of it.

Mike Pignato, who designed the bunker mister system at Willow Oaks, says he has used such a
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system for six or seven years, but it's becoming a standard at higher-end facilities.

"It offers a quick syringe to the bunker faces and the surrounding area and gives capes and other bunker features the ability to get enough water without soaking the sand," says Pignato, president of The Pignato Group, an irrigation design company based in Wellington, Fla.

The mist system gives the superintendent the opportunity to syringe whenever he wants to without affecting the surrounding area, says Tom

At Willow Oaks Country Club, bunker misters allow Craig Fuller, CGCS, to maintain more consistent bunkers playabilitywise. Photo: Willow Oaks Country Club

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Bunker mister systems are becoming a standard at higher-end facilities. Photo: Willow Oaks Country Club

Klich, Landscapes Unlimited project manager who installed the system at Willow Oaks, Oak Hill Country Club in Rochester, N.Y., and Woodmont Country Club in Rockville, Md.

"Bunker faces, like greens approaches, are hot spots on the golf course the superintendent would like more control over," Klich says.

HOT SPOTS
The misters also improve south-facing bunkers that dry out quickly, says architect Steve Smyers, who installed misters at Interlachen Country Club in Winter Park, Fla., this year.

Pignato also has incorporated misters in a design at Quail Hollow Country Club in Charlotte, N.C.; the Country Club of Charleston, TPC at Sawgrass in Jacksonville, Fla.; and Frederica Golf Club and Ocean Forest at Sea Island on St. Simons Island, Ga. But his first exposure to the idea came at Bear Lakes Country Club in West Palm Beach, Fla., where he and superintendent David Troiano came up with the idea.

"Although we've been doing it for awhile, it just started down here in Florida where we noticed bunkers, being sand-based, typically wick the water away from the turf that surrounds the bunker or bunker complex," he says. "It's similar to what you see when you try to grow turf next to a parking lot. The heat of the lot dries out the turf."

A WORTHY INVESTMENT?
Michael Larsen, CGCS, at Woodmont Country Club in Sykesville, Md., where misters were installed near all 66 bunkers during an irrigation project last winter, gave them a "good" but not an "excellent" rating.

"You're able to put the water right where you need it - on the bunker face ... and you're able to get low-infiltration rates on steep slopes rather than putting a lot of water on them and having it run off," he says. "But the misters tend to clog a little more."

Taking the misters apart is more of a nuisance than a time-consuming chore, Larsen says.

Many clubs will cut bunker misters from tight budgets, Pignato says. But Fuller, who first became familiar with bunker misters a decade ago at New Albany (Ohio) Country Club, considers them a worthy investment. He estimates the cost to be $600 per average-sized bunker (1,200 to 1,500 square feet) - there are 59 bunkers at Willow Oaks. From another point of view,
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IRRIGATION MANAGEMENT

Bunker misters are part of the need to further segregate areas of a golf course that need to be irrigated differently. Photo: Willow Oaks Country Club

George suggests course officials look at the misters as a water-conservation effort.

“Most of the golf courses that choose to use these will spend the money and install tee syringes to irrigate tee tops separately from tee surrounds,” Pignato says. “The goal is to further segregate areas of the golf course that need to be irrigated differently.”

GREENS APPROACHES

Aside from bunkers, greens approaches have special irrigation needs because they’re one of the most abused areas on a golf course, Fuller says, adding the majority of equipment turns are in that area.

“Generally, the irrigation is doubled in that area – your outs from the green are spraying out into the fairway and rough, and the heads in the fairway are throwing water up to the green,” he says. “The result is the approach areas are overwatered generally.”

Because of that overlap, a watering system was installed in the approaches at Willow Oaks to better control the turf quality in that area, as well as the bunker faces.

“We figured we could solve 75 to 80 percent of the issues we have there by putting in a specific irrigation system just for the approaches,” Fuller says. “We could have gone to the extent of making a miniature green, if you will, out onto the approaches, with six or eight inches of sand base, but that’s cost prohibitive.”

The approach mister option costs about $2,000 per hole for an average 4,000-square-foot approach, and it was well worth it, Fuller says.

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BACKING IT UP

Chemical manufacturers support their products with research and sales reps. By John Walsh

It’s no secret chemical manufacturers support superintendents and the industry in various ways. Some are sexy, such as sponsorships, events and seminars. Some are less sexy but perhaps more important. For example, conducting research and providing qualified sales/field representatives might seem basic, but many superintendents say the benefits are critical.

At its development and training facility in Clayton, N.C. — which has four golf holes and turf plots with a mix of push-up greens and USGA-spec greens — Bayer conducts research on warm- and cool-season turf, including comparable treatments for herbicides, insecticides and fungicides. The company continually brings customers to the facility demonstrating its support of the industry, says Scott Welge, director of marketing for the green professional business.

“We showcase the Clayton facility with current customers first, but the facility also is available for those who don’t know Bayer, and it gives us an opportunity to show customers what we offer and can do,” Welge says. “The research there is somewhat different than other places. We can replicate real-world situations in a matter of hours, when needed, in addition to normal research plots. There’s a lot of work on product improvements, spray volume, surfactants, irrigation, application timing and tank-mixing compatibility. We provide meaningful feedback about superintendents’ issues.

The facility also allows Bayer the flexibility it needs.

“We can run trials mid-season and have the availability of the turf and other needed resources during the season,” Welge says.

Research also is important when it comes to introducing new products in the market. University researchers and research cooperators are involved early on with product development, and after a product is launched in the market, unbiased research is needed to compare new products with competitive ones.

“We present our research as internal or external, or a combination of both,” Welge says. “Work done at universities is public information. Internal research is sometimes used but clearly noted in any information released externally. Each of the field sales reps have access to the data. If it’s a specific product or data, a superintendent usually asks a research cooperator, distributor sales rep, field sales rep or technical specialist to obtain the efficacy data.”

Because Dow’s global headquarters is in the U.S., the company’s research starts in the country. Once concepts are developed, they’re tested at universities to validate the company’s products and claims. The research information is disseminated through field days, newsletters, local sales reps and local superintendent meetings.

“We have a new major work effort with Purdue,” says Mark Urbanowski, senior marketing specialist for the turf and ornamental business. “We don’t publish a lot of our own research because people think they know what you’re going to say. The information that comes through the universities is more important.”

There’s a lot of internal testing during the eight to 10 years of product development before the company markets a product.
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Syngenta’s research is done corporately and locally with universities. Company technicians have relationships with university researchers who work together to enhance and improve products.

“We take research at universities and our research and put it in a format to take to superintendents,” says Dave Ravel, golf market manager.

“We put together all the research information, and our tech reps write agronomic programs based on that. And with GreenCast, we can offer a suggested spray program, for example, for superintendents.”

The company also has field technical managers, such as Michael Agnew, Ph.D., and others who publish research articles in various magazines and journals that reach superintendents.

DuPont Professional Products conducts a lot of research with universities, says Chuck Silcox, Ph.D., turf and ornamental product development manager. The company spent millions of dollars on efficacy trials during the past five years, which ultimately is a benefit to superintendents.

“We do most of our turf field research externally,” Silcox says. “It’s more effective to invest in outside research to provide superintendents with reliable data as we launch products into the market. We touch most of the major universities. And because of our relationships with universities, I can call upon researchers to share their expertise with superintendents who contact DuPont seeking advice. We’re a conduit of information.”

The company disseminates its research through sales reps, associations, distributors, Webcasts and even one-on-one with superintendents.

Cleary Chemical works with 20 different universities and has an extensive research and development budget, according to president Mary Ellen Warwick. The company also has superintendents test a product before it goes to market. Research data from the past 15 years is housed in a database that can be cross-referenced, and the company’s sales reps have

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

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

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access to the data via laptops.

"We do some of our own research," Warwick says. "We don't have an R&D staff, so we work with researchers. Superintendents are looking for test results and how you stack up against the competition. How and why a pesticide is made isn't as important to them."

In addition to university research, the company tests products on its own 18-hole public golf course, Tara Greens Golf Center.

BASF conducts internal research in California and North Carolina, as well as external research at various universities and FarmLinks. It also conducts research directly with superintendents.

"If a superintendent has a problem and thinks outside the box, we'll take him up on that and conduct research with him," says Toni Bucci, business manager for the T&O division of the agriculture division. "We work with credible researchers, yet there's value in doing research with smaller, lesser-known researchers because there might be something in a particular area that needs to be addressed."

Researchers usually don't put off the company because they're too busy with other work, Bucci says.

"They're just as excited as much as we are to test new products," she says. "There's a sense of pride in the research and being able to test it and recommend it or not."

Bucci says there's always a need to do more research about tank mixing because it's a common problem and new turfgrass varieties can be sensitive to a tank mix that worked fine on another grass.

BASF disseminates its research information through its sales reps, tech sheets, Web site and university research field days.

At FMC's Princeton, N.J., facility, scientists are working on new formulation technologies and delivery systems. And all current company projects are in testing through the university system, says Rick Ekins, product manager for turf and ornamental.

"The last herbicide we launched, Echelon, was tested at 12 universities in more than 60 trials nationwide, and that's just the 2007 data," he says.

University researchers are supportive of the company's initiatives.

"They have their own traveling circuits and share data with superintendents as they present their findings," Ekins says.

**HUMAN TOUCH**

Much like research, sales representatives are another area of support from chemical manufacturers superintendents can rely on to help do their job better. All chemical manufacturers' reps have a wealth of technical experience and related degrees. Many are former superintendents. Companies' sales forces range in size from less than 10 people to 30. And all companies train distribution sales reps.
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For example, FMC doesn’t hire salespeople right out of college. “We seek seasoned people with varying experience who are respected in the industry,” Ekins says. “Some have been distributors before, and some are out of the university system.”

Part of Bayer’s sales training program is to educate reps so they know the company’s products as well as the competitors. “If a superintendent has a particular question, our field reps will walk the course with him,” Welge says. “If the field rep can’t answer the question, he’ll call on a technical specialist, who is also in the field.”

Superintendents want to know about new pests, new product recommendations and how other superintendents are dealing with a common problem, Welge says. “Our field sales reps reputations are on the line every time they make a recommendation,” he says.

And because Bayer sells its products through distributors, the distributor sales reps provide valuable product and agronomic information. “We provide distributor training about our products and emerging pest problems as well,” Welge says. “Superintendents have a lot more contact with the distributor sales reps throughout the year, so we actively work with the DSRs, so at every point of contact, the superintendent has the most updated information.”

Dow’s reps are involved in local superintendent chapters, educational sessions and help superintendents work through environmental or pesticide regulations. “We hire a mix of employees that come in at the sales level,” Urbanowski says. “Some come from agronomic schools, and others come from business schools, although someone with an ag degree hits the ground running faster. The business guys go through short courses on the technical side. We rely on the expertise of the distribution reps, too. We hire the best people and rotate within the company but keep a good balance of turf specific guys in the field.”
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Like other chemical manufacturers, Syngenta reps support superintendents in various ways. “The sale of our products and our relationship with our customers doesn’t end at the cash register,” Ravel says. “Our local tech reps know the area – regarding soil and environmental conditions – they work in. They work with superintendents and cooperate with many local universities to run soil tests, for example.”

Syngenta’s vehicle to get its products to market are its distributor sales reps, who benefit from working one-on-one with the company’s technical sales reps.

“Our technical sale reps will do road shows and sit in with the distributor sales reps to help explain new products,” Ravel says.

The distributor sales reps, who outnumber the tech reps 45 to one, will have more contact with superintendents than the tech reps, who write agronomic programs.

DuPont’s reps attend regional superintendent meetings and present information about market needs, answer questions about herbicides and overseeding, and suggest ways superintendents can make products last longer and suggest whether they should use surfactants or not.

The company is anticipating expanding its sales force in 2008, says Nancy Schwartz, marketing manager for turf professional products.

University researchers and research cooperators are involved early on with chemical manufacturers’ product development. Photo: BASF

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These are the kinds of restrictions and scrutiny that were involved when building Machrihanish Dunes Golf Club in the tiny village of Machrihanish just outside Cambeltown on the Mull of Kintyre, a peninsula on the west coast of Scotland. Certain aspects of construction were delayed because of environmental concerns, but core construction was completed in about three months. Acquiring the permits and conducting environmental surveys needed to build the golf course took two years.

The landscape, which has been created over time by the movements of wind, sand and sea, is one of the last remaining natural links sites in Scotland, according to one of the club's owners, businessman Brian Keating. (There are 270 authentic links course in the world.) Machrihanish is considered the first 18-hole golf course to be built on the west coast of Scotland in 100 years, Keating says. The course abuts an existing course, Machrihanish Golf Club, which was designed by Old Tom Morris in 1879.

Keating sold his old business in the high-tech field several years ago and was looking for a new business that would allow him to play more golf. A friend of his had been trying to convince him to invest in golf. Eventually, Keating met with the owners of the land on which Machrihanish sits and struck a deal.

"I've been involved in complicated projects before," he says. "If I was going to be successful, I needed to work with the right people who knew their stuff and had experience."

Those people included golf course architect David McLay Kidd and his associate Paul Kimber at DMK Golf Design; Euan Grant, former greenkeeper at St. Andrews; David Southworth, president and c.e.o. of Southworth Development; and a well-respected environmentalist/ecologist, Carol Crawford.

"We were on top of it all the way," Keating says. "I spent time working in the community and received their help promoting the economic benefits of the golf course."

In choosing DMK Golf Design, Keating started with a short list of architects who designed true links golf courses ranked in the top 100. He
chose DMK because it committed to being on site and Kidd, who designed Bandon Dunes, played on the same beach as a youngster.

“For me, this project has special meaning because I spent summers there,” he says. “I knew the dunes really well.”

Before development, Keating and company did their homework, which took a year.

“We conducted a complete environmental survey,” he says. “I hired the top environmentalists. We were well prepared before we presented our plans to build the course.”

Keating presented his plans to the Royal & Ancient as a courtesy, a regional council and the Scottish National Heritage, which is somewhat equivalent to the U.S. EPA.

The topographical and environmental surveys and permitting costs totaled about a half million dollars. The total spend to build the golf course was between $2 million and 2.5 million.

SO SENSITIVE
Machrihanish, which is scheduled to open in August 2008, is the first course built on a Site of Special Scientific Interest – a conservation designation denoting a protected area in the United Kingdom. SSSIs are the basic building block of nature conservation legislation, and most other legal nature/geological conservation designations are based on them. In this case, rare orchids grow on the site, links land is highly protected in general and a defunct Navy base near the property had caused environmental damage years ago. In short, the site was considered extremely sensitive. Because of the sensitivity, no pesticides are allowed to be applied to any part of the golf course except the greens and tees.

“In the U.K., the highest environmental designation is the SSSI,” Kidd says. “Quite often, you work on golf course projects of which part is an SSSI
Because of the linksland's environmental sensitivity, acres of sod were cut, moved and replanted by hand. Photo: John Walsh

or you’re next to an SSSI site. In Machrihanish’s case, the whole golf course is an SSSI site. What we had to learn was why the site was an SSSI. “We worked with environmentalists who surveyed the ground,” he adds. “They gave us detailed maps of ecological sensitivity. We looked at it through the environmentalists’ eyes. Paul Kimber was incredibly patient with the environmentalists, and that’s not his nature. Although the environmentalists had veto power, we still respected them. The piece of land was worth fighting for.”

“Working with environmentalists who surveyed the ground,” he adds. “They gave us detailed maps of ecological sensitivity. We looked at it through the environmentalists’ eyes. Paul Kimber was incredibly patient with the environmentalists, and that’s not his nature. Although the environmentalists had veto power, we still respected them. The piece of land was worth fighting for.”

AU NATURAL
Designing Machrihanish Dunes was different compared to most projects. It was more like laying out a golf course through a great site, Kidd says.

“The landscape is what it is,” he says. “No doubt we had a fantastic site. I can’t take credit for God’s work, but we did a fantastic job negotiating with the environmentalists and getting permits.”

Kimber, who has been with Kidd for eight years, says design, in general, is done on the ground.

“Golf design isn’t like a building – it won’t fall apart,” he says. “It’s a work of art. It doesn’t end up exactly as you thought.”

Because of the SSSI designation, no erosion was allowed to occur during construction. To build the greens and tees, only one machine, a backhoe, was used. The labor cost was increased by the environmental sensitivity. Most of the development required a lot of hand labor, concentrating on greens and tees. What made it exceptionally detailed was that when sod was cut from a certain area, it had to be relayed in the exact same manner. For example, the ecologist stipulated that if the sod was cut from a south-facing dune, it had to be replaced on another south-facing dune. Topdressing and rolling helped the patches of sod grow together.

The 259-acre piece of land on which the course sits is overpopulated with rabbits, so the herd is being thinned. The only place where bunkers could be placed are where the rabbits had eaten into the ground.

“We’ll wait to see what the bunkers do,” Kidd says. “If they collapse, we’ll fill them in.”

After the course opens, Kimber says the design team will play and review the course to see if any tweaks, such as drainage improvements or tee-angle changes, are necessary.

LET IT GROW
The challenge of creating something out of the natural landscape is the reason why Grant took the job at Machrihanish, which he says is more

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interesting than the St. Andrews job. While growing-in the course and maintaining it, Grant and his seven-member staff can’t maneuver all over the course because of the sensitive areas. They have to travel through marked paths. The fairway can’t be cut shorter than 0.175 inch, and the rough won’t be mowed at all – there will be 80 sheep on the property to help maintain the rough and fairways from October through April. Even the locations of the fairway edges were debated with the ecologist, Kidd says.

Grant says the grow-in is taking longer than normal because of the open land and because he and the staff are working with pure sand and are using one-half to one-third the fertilizer used in a typical grow-in.

“We’re giving the plant just enough fertilizer to germinate and grow,” he says. “The nitrogen rate for a grow-in is normally 250 to 300 kilograms per hectare. Right now we’re at 90 kilometers per hectare. This is just enough to ensure germination while keeping the fescue plant strong in its native environment. We will come down to 30 after grow-in is complete.”

Grant also is applying trace elements or micronutrients during the grow-in.

To date, Grant hasn’t seen disease, which he says is surprising because of the damp climate. However, there are grubs in the area (the club next door has problems with them), but they’re not effecting the grow-in. As for weeds, the greens and tees are fairly clean, Grant says. There are weeds in the green surrounds, but Grant isn’t allowed to treat them because the use of pesticides, organic or synthetic, is off limits. The amount of weeds in the fairways, which aren’t allowed to be seeded, should decrease once Grant starts light scarification and topdressing.

“We can treat greens and tees with anything, but everything else I have to live with, which is frustrating at times,” he says. “The toughest challenge is, as with any job as greenkeeper, to establish the grass amid the exposed geography. The wind is constantly blowing, and it’s fairly damp.”

The easiest aspect of Grant’s job is working with a pure sand soil profile.

“I haven’t seen a puddle,” he says. Working with DMK has been a great experience for Grant.

“A lot of developers wouldn’t employ a superintendent from the outset,” he says. “There’s an expense for them. But because I’m there every day, it has taken a lot of pressure off everyone. And I’m put at ease because the architects can make decisions daily.”

Grant reminds those inquiring about the project that his staff has shifted acres of turf by hand and walked along the site with the ecologist to make sure everything is done as naturally as possible.

“It’s frustrating at times, but we made a point early on that we would do it this way,” he says.

ONWARD

Green fees for the public golf course, which will feature five sets of tees ranging from 7,222 to 5,389, will be equivalent to $157. The clubhouse is expected to be completed by 2009.

Southworth Development is managing the preopening marketing for the property and is setting up its operation. Southworth, which has been involved in 25 golf course projects, was contacted by Keating for the project because he wanted to work with the company that developed Liberty National Golf Club in New Jersey.

“It’s been a smooth ride so far,” Southworth says. “David and Brian have a good handle on things. This was the perfect opportunity to take our first step into Europe, and we haven’t looked back since.” GCi
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Research

BY RICK BRANDENBURG, PH.D.

Behaving badly
Soil insects' below-ground activity affects pesticide applications

In most areas where high-quality turfgrass is maintained, insects typically rank third behind weeds and diseases on a turfgrass manager's priority list. But insects cause serious turfgrass damage and in some areas are the biggest problems that need to be addressed.

The cost of controlling insects, especially insects that live in the soil, can be quite significant. The cost is often related to the fact that insects living in the soil often require a higher recommended rate of insecticide than those insects that live above the soil. The soil and thatch often make it more difficult for the insecticide to get the job done.

However, effective management of soil insects such as white grubs and mole crickets is challenged by more than just the fact that the insects are surrounded by soil and often protected by thatch. Insects behavior, which is something we typically can’t observe, can create many headaches. These insects are often able to survive a wide range of environmental and man-made stresses. Insects’ survivability isn't based solely on the insect's hardiness. While many insects are well adapted and designed to tolerate some severe conditions of drought and temperature, the physical adaptations might not be the only characteristic they possess to help them cope and survive.

Insects also have a hard, waxy cuticle or skin and can withstand severe stress. In addition to the physical features of insects that make them tough, many also have behavioral characteristics that might help them avoid stresses. For many years, we've known and observed that some soil insects might burrow deeper in the soil.
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Research

Many years ago in agricultural crops, it was observed that in some instances insects would move to the lower leaf surfaces of plants to avoid exposure to insecticides. Continuing to spray for insects with insecticides has the potential to select those insects that move to the lower leaf surface and avoid exposure to the spray. If the behavior was genetically controlled, then the percentage of insects that move to the lower leaf surfaces to avoid treatment would increase because the insects that stayed on the upper surfaces most likely die, and those genes would be eliminated from the population.

MOLE CRICKET BEHAVIOR

Although we’ve been treating insects with pesticides for a long time, it shouldn’t surprise anyone if we saw behavioral traits that might help them survive. The area where this behavior has been demonstrated quite clearly and has significant implications for control is with soil insects such as white grubs and mole crickets.

Mole crickets are serious turfgrass pests in many parts of the world, especially in warmer climates. These insects dig and tunnel through the soil, creating physical damage affecting the appearance of turfgrass. They also can cause drought stress by loosening the soil and feeding on the turf roots. The end result is that by late summer, the turfgrass can be seriously damaged, and in some cases, the turf in localized areas might be destroyed completely. Additionally, birds often probe for and feed on mole crickets, adding to the turfgrass damage.

Once the lifecycle of the mole cricket is understood in a particular area, we’ve had good results developing a management strategy. There are three key components to effective mole cricket control. They are mapping, monitoring and timely treatments. Mapping is critically important because it will guide your efforts to monitor in early to mid-summer when the turfgrass looks its best. However, the appearance of turf on the surface can be deceiving when mole cricket eggs are hatching and the small nymphs begin feeding on the roots. The nymphs are small in early to mid-summer, and the turfgrass can tolerate their feeding. Early summer is the timing for the most effective treatments. Rather than attempt to determine where on the whole golf course eggs might be hatching, good maps from the previous year’s infestation tell you exactly where to begin looking.

Mole crickets are creatures of habit and usually occur over and over again in the same locations each year. Therefore, records of where
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☐ 10-Building Material Supplier
☐ 11-Advertising/Agency
☐ 12-Sportswear Manufacturer
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☐ D-Golf Course Owner
☐ E-General Manager
☐ F-Golf Course Architect
☐ G-Building/Developer
☐ H-Clubhouse Manager
☐ I-Sales representative
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4. Number of Holes (check one)
☐ A-18 Holes
☐ B-9 Holes
☐ C-27 Holes
☐ D-36 Holes
☐ E-Other

5. Total Annual Maintenance Budget:
☐ $0-$99.99
☐ $100.00-$499.99
☐ $500.00-$799.99
☐ $800.00-$1,000.00
☐ $1,000.00-$1,999.99
☐ $2,000.00-$2,999.99
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☐ 1-Bermudagrass
☐ 2-Jaune d’Or
☐ 3-Bentgrass mix
☐ 4-Bermudagrass
☐ 5-Bahiagrass
☐ 6-Rye
☐ 7-Ovansgrass
☐ 8-Other (please describe)

13. What turf do you maintain on greens?
☐ 1-Bermudagrass
☐ 2-Jaune d’Or
☐ 3-Bentgrass mix
☐ 4-Bermudagrass
☐ 5-Poa annua
☐ 6-Rye
☐ 7-Ovansgrass
☐ 8-Other (please describe)

14. What is your primary business at this location? (check one)
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☐ 9-Junior Golf Course
☐ 10-Building Material Supplier
☐ 11-Advertising/Agency
☐ 12-Sportswear Manufacturer
☐ 13-Clubhouse Equipment Supplier
☐ 14-Other (please describe)

15. Where is this course located?
☐ 1-Resort Chain
☐ 2-Golf Course Management Company
☐ 3-Municipal Course System
☐ 4-None of the above

16. What is the name of the Architect Who Designed the Course?

17. Is this course part of a system?
☐ 1-Resort Chain
☐ 2-Golf Course Management Company
☐ 3-Municipal Course System
☐ 4-None of the above

18. What turf do you maintain on fairways?
☐ 1-Bermudagrass
☐ 2-Jaune d’Or
☐ 3-Bentgrass mix
☐ 4-Bermudagrass
☐ 5-Bahiagrass
☐ 6-Rye
☐ 7-Ovansgrass
☐ 8-Other (please describe)

19. What turf do you maintain on greens?
☐ 1-Bermudagrass
☐ 2-Jaune d’Or
☐ 3-Bentgrass mix
☐ 4-Bermudagrass
☐ 5-Poa annua
☐ 6-Rye
☐ 7-Ovansgrass
☐ 8-Other (please describe)

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they were last year can be used to help you determine which sites to monitor during the egg-hatch time. Starting about two weeks before local information indicates mole crickets eggs might be hatching, mix up a 2 percent soapy water solution and pour about one gallon of the solution on a square yard area. Observations of this area for the next three to five minutes after application of this solution to the turfgrass will reveal whether any mole crickets have begun to hatch. Determining the time at which mole crickets first begin to hatch is important for the third component, timely treatment. There are absolutely no above ground indicators of when the eggs are hatching, and there won’t be any for about a month after egg hatch. By then, the best opportunity for control has been missed.

TIMELY TREATMENT
There are two factors that affect treatment timing and why their effectiveness is affected by application date. The first, and perhaps the most obvious, is that as the mole crickets grow larger, they’re harder to kill. As the crickets grow larger, they becomes harder and require exposure to a larger dose of insecticide. This is true for many of the insect pests, including surface-feeding insects such as armyworms.

I was talking recently with one of those rare superintendents who had relocated from the North to the South. He’d gone from a major club in the Mid-Atlantic to a nice facility in South Carolina as his “retirement job.”

I half-jokingly asked if he even had a spray rig anymore. He fired back immediately that he’d trade any disease he ever dealt with up North for the difficult mole cricket infestation he’d inherited at his new place.

As Rick Brandenburg points out in the highly-readable and sensible article above, mole crickets are among the worst of the subsurface feeders that plague golf courses. But, a little common sense goes a long way when dealing with these nasty little critters.

Initial control is all about scouting. As Brandenburg notes, they tend to be homebodies, so mapping areas of frequent infestation over the years is critical. Scouting for early infestation, particularly in mid-summer, is also part of the plan. Find the timing of the hatch, and your work is half-done.

“Get ‘em while they’re young” is a phrase used in many contexts, but it’s particularly true for mole crickets. As Brandenburg explains, the larger and more mature they are, the harder they are to kill.

A 2001 report from IFAS and other sources indicate the following offer control opportunities for mole crickets (check current regulations and restrictions in your area):

- Acephate
- Bifenthrin
- Chlorpyrifos
- Cyfluthrin
- Deltamethrin
- Fipronil
- Imidacloprid
- Lambda-cyhalothrin
- Permethrin
- Steinernema scapterisci
- Trichlorfon

Baits:
- Bifenthrin
- Carbaryl
- Chlorpyrifos
- Indoxacarb

Mole cricket treatments are not inexpensive. They range from $2,000 to $20,000 per year, depending on infestation and the number of holes treated. But, given the potential extent of damage and the difficulty of eliminating established colonies, the return on investment is considerable for treatment.

The battle against mole cricket damage is, quite simply, an ongoing battle. Timing is everything and chances are you know that timing best. The early application will likely get the mole cricket. GCI
The other less obvious factor is the behavior the insect exhibits in the soil. Certain pests such as mole crickets are mobile in the soil, and the larger they become, the greater their ability to tunnel and move deep in the soil. If the insects are more mobile, then potentially they're moving up and down through the soil profile. This increased movement could expose them to more insecticide if the movements were random. At the same time, if the greater mobility encouraged movement away from the insecticide, then the impact on control might be significant.

Our research during the past 10 years has found that mole crickets try to avoid exposure to insecticides. This is true for virtually every insecticide, even for natural or biological control measures. From a biological or scientific perspective, it's interesting that mole crickets avoid a recently developed synthetic insecticide the same as they do a fungal pathogen they've been exposed to for eons.

Our research has shown that the mole crickets' ability to detect and avoid a pesticide is consistent and rather dramatic. Mole crickets move deeper into the soil and stay there as long as they can without feeding on turfgrass roots. The larger the cricket (later in the summer), the greater the ability of the mole cricket to tunnel deep into the soil and stay there, avoiding the pesticide for a longer period of time. If the pesticide applied had relatively short residual activity (less than two weeks) the mole crickets might avoid it all together and little, if any, control will result. Treating earlier in the summer, when mole crickets are small, enhances mole-cricket-control performance because mole crickets aren't able to dig as deep or stay away from the insecticide treated soil (the root zone) for as long a period of time. The end result is better control when crickets are smaller.

Additional research shows mole crickets respond in a similar fashion to natural or biological control organisms. Studies using Beauveria bassiana, a naturally occurring fungal pathogen of a number of insects, have demonstrated the same avoidance behavior as was observed for synthetic insecticides. These results become increasingly obvious when one considers that natural, organic or biological control products usually don't last as long or have the residual activity of synthetic insecticides.

Is there any question then as to why mole crickets are harder to control once they get more than a half-inch long? We made our job more difficult than it needs to be. Mapping, monitoring and timely applications suddenly take on a whole new meaning. It's easy to see why timely applications make all the difference as to how well an insecticide might or might not work. The importance of treating before the majority of the mole cricket population gets to be a half-inch long can't be overstated.

Similar behavioral responses have been observed in other soil insects such as white grubs. The main difference is that white grubs aren't as mobile as mole crickets, but the concept of timely applications still applies. Keep this in mind as more companies publicize the ability of their products to control white grubs late in the summer. While this is true, maximum control will happen when treatments are applied to the most susceptible stage.

**BIOLOGY AND LIFE CYCLES**

Understanding pest biology and life cycles are important to cost effective and environmentally sound pest management. There aren't that many soil insects we have to deal with each year, so the
Research

challenge of mapping, monitoring and timely applications shouldn’t be too overwhelming.

Even though insects probably don’t rank at the top of your list of priorities on a daily basis, the rules of engagement are pretty simple, and there’s no excuse for not doing the job correctly. The time, effort and expense of managing turfgrass insects correctly are no more than to do it haphazardly or without a little forethought. The end result, however, is quite different in terms of turfgrass quality and final cost. Get current on the insect pests you have to contend with each season. The time invested will pay huge dividends.

Rick Brandenburg, Ph.D., serves as co-director of the Center for Turfgrass Environmental Research and Education at North Carolina State University in Raleigh. He can be reached at rick_brandenburg@ncsu.edu.

Mole cricket life cycle

The life cycle of many soil insects allows the small stages of the insect to escape detection in the soil under aggressively growing turfgrass. Image: N.C. State University

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The Right Way To Treat A Tree
Let it grow

A New York superintendent sees better growth after applying organic fertilizer

The word “organic” conjures up images of doubt, at least when it comes to golf course maintenance. But Lyman Lambert, CGCS, isn’t a doubter when it comes to certain organic fertilizers. Lambert, who works at the private 18-hole Nassau Country Club in Glen Cove, N.Y., spends $65,000 annually on granular and liquid fertilizers. He spends about $17,000 on Growth Products’ Pro-Formance Ultra, Essential, Companion, Re-Store Plus (which all have organics or are all organic), in addition to Calcium Chelate and Xtra Iron. He spends about $5,000 on I-Mol, a molasses-based product by From the Ground Up that feeds microbes and leads to the decomposition of thatch, and about $43,000 on granular fertilizer from Andersons Golf Products.

To put Lambert’s operation in perspective, his maintenance budget is $1.5 million, and his staff consists of 21 people during the summer and six during the winter. The club hosts an amateur major event, annual the Nassau Invitational, and various Long Island and Metropolitan Golf Association tournaments every year or two. The turfgrass at Nassau is a Poa annua/bentgrass mix on the greens, tees and fairways, and the rough is a mix of bluegrass, ryegrass and Poa.

Unlike other areas of New York, Lambert says there are fewer regulations for pesticide use, but regulations aren’t solely the reason for his use of organic fertilizers. He uses organic fertilizers because he achieves his desired quality of turf with the combination of granular and liquid fertilizers, as well as organic amendments. He previously used granular fertilizer more heavily because he believed organics were just snake-oil products. Now he believes there’s a place for organics in the industry but doesn’t think organics alone can produce great quality turf.

On the greens, which are triple-cut daily, Lambert uses a synthetic granular fertilizer (Anderson 13-2-26 or 18-9-18) four times a year and organic liquid fertilizers every two weeks, along with Primo plant growth regulator throughout the season. In the spring, he applies the granular fertilizer twice to kickstart greens growth. Then he switches to a liquid fertilizer plus organic amendments,
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Value with a difference.
Lambert is experimenting with fertilizer applications late in the year and is seeing more root growth come spring. Photo: Nassau Country Club

calcium and iron, which he applies every two weeks. In August, he makes another application of granular fertilizer while continuing the liquid fertilizer applications. In the fall, he makes the fourth granular fertilizer application.

In the fairways, granular applications are made every six weeks, and liquid fertilizer applications with organic amendments, calcium and iron are made every two weeks.

In the rough, granular fertilizer is applied three or four times a year. No liquid fertilizer is applied in this area.

Liquid applications, which are considered spoon-feeding, are made with Toro boom sprayers using fan nozzles because they push the fertilizer down into the thatch layer, Lambert says. The fan nozzle is better than the nozzles that apply product in bubble form, he says. Any time the turf looks weak, there might be additional liquid fertilizer with organic amendments applied to try and strengthen it.

Lambert, who became a superintendent in 1986, makes his fertilizer applications early in the morning after the grass is cut because the crew needs to get out of the golfers' way. Four sprayers go out - two 160-gallon units on the greens and two 300-gallon units on the fairways. If there's downtime after the greens are completed, the tees are fertilized.

If there's no down time, the tees are fertilized the next day.

After all fertilizer applications, Lambert posts signs on the first and 10th tees and in the pro shop to alert members about them.

Lambert, who has been at Nassau since 1984, credits his fertilizer program with helping suppress disease.

"I used to be worried about anthracnose," he says. "We're a busy club with a lot of traffic, and the carts don't have much place to go. So I need to keep the grass growing to avoid anthracnose. We have had a little bit of anthracnose on one green and on one fairway. Other than that, I don't see it."

Aside from Companion and Essential Plus, which include amino acid and gibberellic acid, Lambert is testing a new product from Growth Products called Performance 18-3-6, a synthetic fertilizer with organic ingredients as well as soy bean extract, which is supposed to make bentgrass grow sideways and help fill in areas.

Lambert started using liquid fertilizer about 10 years ago and Growth Products fertilizer five years ago. He takes advantage of the company's early-order program and purchases all the liquid fertilizer in December. He purchases the granular fertilizer from The Andersons in December as well.

"This year, because the price of fertilizer has increased, I bought all the fertilizer I need for next year at once, and I'll store the granular fertilizer," he says. "Usually, they bring it to me throughout the year. But the Growth Products fertilizer is delivered throughout the year as I need it, starting in the spring."

Overall, Lambert is satisfied with his fertilizer program, although he is trying to improve his green downtime after aerification.

"I've had a problem with aerification holes not closing up fast enough to get the greens back into play, so I'm experimenting with using some products after we aerify," he says. "I apply eight ounces of Pro-Formance Ultra with Companion, Essential and Xtra Iron before and after aerifying to help close the holes faster."

Lambert starts his greens throughout the season, which leaves turf plants weak. He plans to apply different amounts of liquid fertilizers and organic combinations before start tining to keep plant vigor up to improve recovery.

Lambert also is experimenting with applying Companion and Essential together late in the season, around December. As a result, he has seen tremendous root growth in the spring.

"They're the best roots I've ever seen," he says. GCI
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INSIDE THE ROPES

Q What cultural practices did golf course superintendent John Zimmers implement at Oakmont Country Club this past June to reach firm greens, and how long did the process take?

A The USGA maintains U.S. Open Championship putting surfaces firm and fast. Because the club has 100-year-old soil greens, the draining capacity required improvement and firming for daily play and championship guidelines. Immediately after Zimmers arrived at Oakmont, he began a five-year, subsurface soil modification program. This process, which is ongoing at Oakmont, includes:

1. A deep drill-and-fill process for all greens. The holes created are back-filled with sand.
2. Deep-tine aeration with three-quarter-inch solid tines.
3. Standard hollow coring using pedestrian aerifying units. All cores were removed and holes were filled with sand topdressing, which was hand brushed into all holes.
4. Sand injection using the Dryject units that produced aerification holes in the root zone and filled them with the sand material.
5. After coring, green surfaces were verticut with a less aggressive unit using the smallest width cutting blades to reduce the impact to mounding and surface contours and avoid scalping.
6. To move water down further and away from the surface, Zimmers hired a contractor to install the subsurface drain lines to pick up all water before it reached the low points of each green. For those who watched the U.S. Open, the nongreen lines visible on the surface were the subsurface drain lines.

Q What steps did Russ Myers, CGCS, take to reduce the heat stress to the putting surfaces as he prepared Southern Hills Country Club for the PGA Championship?

A Southern Hills is situated in a “pocket” with trees surrounding many of the putting surfaces throughout the golf course. Of course a critical element contributing to healthy putting greens in the heat and humidity typical of Tulsa is proper air movement across each surface. Myers had less than a year to remedy the issue. While the club agreed to remove a certain number of trees, there still was a need for increased air movement. Additionally, Tulsa experienced its wettest season in many years. The solution was to install large fans for air circulation. However, the challenge was to provide power to operate the large fans. Myers resolved the issue by following this process:

• First, he initiated a limited tree-removal program near greens that had the poorest growing environments.
• Next, he researched the costs to install power and wiring. Evaluation of equipment, boring, wiring, labor and scheduling costs was six figures.
• Following this thorough investigation, Myers decided Southern Hills should purchase the boring equipment. He mapped a route, contracted an electrician, positioned the fans based on a sunlight/shade impact study. And for championship requirements, he provided mobile fan units to be removed during play and repositioned each night, if necessary, to avoid any Rules of Golf concerns.
• Since the greens are built to USGA guidelines, he installed subsurface air conditioning to aid venting air through the subprofile.
• Finally, Myers increased his aerification program to reduce and modify the organic matter build up and increase gaseous exchange within the putting green profile.

Q At the 2006 U.S. Open Championship at Winged Foot Golf Club, the USGA instituted its successful graduated rough concept to balance the penalty for missing the fairway. Even at a lower height of cut, the primary rough still produced a stiff penalty. What was superintendent Eric Greytok’s program for rough renovation?

A A thorough tree survey was conducted for the entire property, evaluating the short- and long-term health of the trees, as well as the planned rough renovation. With membership approval, all dangerous, diseased, damaged, selective evergreen and nonindigenous species were removed gradually to produce a better growing climate.

Championship fairway and rough contour lines were established to serve as a guide for Greytok. The fairway turf to be converted to rough was stripped, removed and resodded to match the upcoming rough turf selection. The plan included a sighting process, as well as an overseeding program.

Surface preparation began, starting with a proper nutrient plan, drainage installation and additional irrigation (drainage and irrigation was difficult because of the rock ledge under the turfgrass) for the overseed to establish.

Multiple overseeding, using perennial ryegrass and Kentucky bluegrass, was conducted in the fall and the spring of each year leading up to 2006, beginning in 2003.

The 2004 U.S. Amateur served as an evaluation to review fairway and rough contour lines, which would be modified further for the 2006 U.S. Open. All changes were finalized by fall 2005.

Mowing widths and heights of cut were established by the USGA in the fall 2005 and tweaked slightly in spring 2006.

Entering the U.S. Open, the rough was healthy, thick and ready. The first pass of graduated rough was mowed each day at three inches, the next step at six inches, and beyond that, the rough was not cut for the entire championship.

Editor’s note: If you have questions about course set-up or maintenance related to golf tournaments or events, e-mail Tim Moraghan at tmoraghan11@comcast.net.
WHY IS ALL THE CHATTER ABOUT BANNING PESTICIDE AND FERTILIZER USE WHERE YOU LIVE SO HEAVILY WEIGHTED TO ONE SIDE?

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Pick it up and go

Building a grass-clipping cart with used materials already in inventory can make collecting and transporting grass clippings easy and inexpensive.

Rich Reimers Sr., equipment manager at Sunnybrook Golf Club in Plymouth Meeting, Pa., used the front tires, wheels, bearings and axle from a 1970s Jacobsen Greensking triplex greensmower as part of the cart. Reimers used a driveshaft as a tongue-and-hitch combination to hook the cart to the tow hitch on the back of a Jacobsen LF 3400 fairway mower. To hold the trash container in place, he welded a metal bracket made out of used bedknives, 1.5-inch-by-1.5-inch angle iron and three-quarter-inch-diameter steel pipe. The plastic trash container was bolted onto the metal bracket with five-eighths-inch diameter bolts, nuts and flat and lock washers. The container was purchased 10 years ago from Bayhead Products Corp. in Dover, N.H., for $100.

The total labor time to make the cart was about four hours, and there was no cost for the used materials already in stock.

Identify it easily

During new golf course construction, greens, tees and turning points on the par 4s and 5s usually are identified with 4-inch-diameter PVC pipe monuments placed vertically 20-feet high so they can be seen from a distance.

The PVC pipe is slid over a snow-fence-type metal post. The top 1.5 feet of each PVC pipe is colored-coded: blue for tees, red for turning points and green for greens. Usually, the hole number is written on the sides of the pipe with a Sharpie-type felt pen, but it can’t be seen from a distance, so a person has to walk or drive to any of the poles to verify what hole they’re on.

I developed this hole-numbering system — using a Roman numeral concept — so the hole number can be seen from a considerable distance. The larger black bands at the top of each PVC pipe represent the number five, and the smaller black bands represent the number one. All a person has to do to know what hole he’s on is total the number of black bands.
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* Denotes regional advertisement
AU REVOIR, STEVE

True to form, Steve Mona called me exactly at the appointed time of our scheduled call. I'm sure he's been late for things during his 14 years at the helm of the GCSAA, but I've never witnessed it.

He's doing his farewell tour with the media and the GCSAA's various constituencies before he moves on to bigger — or at least the GCSAA, but I've never witnessed it. I'm sure you've read or will read several articles in which he recaps his time in Lawrence. It's a no-brainer topic for those of us in the media.

So I contacted him to get a different take on his transition from the world of turf to the World Golf Foundation. As usual, despite me not always being a cheerleader for everything the association does, he obliged me willingly. I was certain he'd have prepared notes for our call. I also knew that he'd have three things in mind. Having three talking points is, perhaps, Steve's trademark.

A little history: I knew Steve before he moved to the Emerald City in 1994 to take the reins of a troubled association for which I had then worked for seven years. I met him at various golf events in his role as head of the Georgia State Golf Association. All I knew before that was I liked him. He was smart and looked like Opie from Mayberry.

The GCSAA was going through a tumultuous transition at the time. The previous c.e.o., John Schilling, was on his way out. John was a good man who'd taken an association on the verge of bankruptcy, legal peril and general calamity and built it into a quite respectable and profitable middle-size player in the industry. Unfortunately, he had worn out his welcome, and the board was seeking a replacement.

I'll never forget the weekend of the contentious and bizarre first-ever chapter delegates meeting at the fancy new headquarters building in Lawrence. I was the only staff member allowed in the building — and that was just to give tours to delegates — and I was hiding up in my office trying to ignore the hollering and harrumphing occurring downstairs. All of the sudden, I saw someone familiar walking by my office with a couple of GCSAA board members. It was Steve Mona. The proverbial lightbulb went off over my head, and I realized a new era had begun. That new era included:

- A much more buttoned-down, business-like atmosphere;
- Growth from 70 employees to a high-water mark of more than 120 employees;
- Commensurate growth, then leveling off, of revenues and membership;
- An emphasis on chapters and their needs;
- The evolution of the GCSAA Show to the GIS;
- Massive expansion of the GCSAA's foundation, now called the Environmental Institute for Golf; and

But the organization stabilized, grew, matured and prospered under his leadership. Every member benefited from that.

- A governance transition from the board/committee-driven model that started in 1994 (which was killing the jobs of many volunteer leaders) to a staff-driven model with metrics and benchmarks.
- But, the era included several challenges:
  - Awkward relationships with the industry that pays the bills for its operations;
  - Increased competition from independent magazines and decreased spending on marketing by manufacturers;
  - Turnover among the staff, particularly the sales and marketing group that fuels the operations of the association; and
  - An ongoing sense the staff remains insulated from the real world of the rank-and-file members.

But when we talked a few weeks ago, instead of reviewing the collective organizational accomplishments or shortcomings of his tenure, I asked Steve what he felt most proud of in terms of his personal leadership. Predictably, he talked about three things:

First, the association's stature within the golf community: "It has improved dramatically. It's gratifying to see the respect the association commands now and how that's helped how our members are perceived. I've said it a million times — a rising tide lifts all boats."

Second, the way the staff relates to members: "We have 110 people who get up every day thinking how they can help members. When I go to a superintendent gathering, 99 percent of comments are about how great the staff is and how responsive they are."

Third, successfully recruiting major figures from outside the golf course maintenance industry: "We were able to look outside and find people (Greg Norman, Herb Kohler, etc.) who were very interested in what we were trying to accomplish and were eager to help. The fact that we now have so many friends from so many walks of life throughout the golf world is gratifying."

Steve is the last person to claim his time at the GCSAA was perfect. The last several years - he was challenged to meet the board-mandated benchmarks and began to explore other job opportunities — probably weren't comfortable. But the organization stabilized, grew, matured and prospered under his leadership. Every member benefited from that.

He'll be at the Golf Industry Show to cap off his farewell tour, but his successor might not be named by then. He frets a little about causing a hiccup in continuity of management even though he gave the board six-months notice. Nonetheless, he seems ready to go.

"It's the right time for someone else to come in with new ideas and reenergize things," he says. "That said, a huge part of my heart will always be with the GCSAA and our members."

And part of ours will always be with you, Steve. Thanks ... and au revoir.
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