FOLLOW THE GOLDEN RULE

Ethics play a significant role when superintendents change jobs

Inside:
- Builder Excellence Awards
- Soil analysis
- Chemical inputs
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FEATURES

Industry profile
22 WORKING THE TRENCHES
Industry veteran Willie Pennington says friendships drove his stellar career.

COVER STORY:
Business ethics
30 FOLLOW THE GOLDEN RULE
Ethics play a significant role when superintendents change jobs.

Soil management
34 A NUTRITIONAL BALANCE
Soil tests pinpoint subsurface needs.

Turfgrass management
78 FACTOR IT IN
Expectations, weather and turf health determine the amount of chemical inputs superintendents use.

RESEARCH

86 HOW THEY MEASURE UP
A lab study analyzes physical properties of bunker sand.

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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.

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THE LESSER OF TWO EVILS

Politics are annoying. There's too much bickering, pandering and hot air to withstand for any length of time. Politics also can be entertaining, much like watching a sporting event. You cheer and root for the person you want to win as he or she delivers snappy rebuttals during televised debates. Politics might be annoying and entertaining, but they're also important because they impact people's lives and how businesses operate.

Politics have been dominating the news lately because it's primary season. The media analyze each and every word of the candidates like they actually mean something. They like to predict winners, too. Despite the media buzz, I often ask, "What are the details?" and "Where's the substance?" as politicians drone on about changing the country by implementing their new policies. Campaign speeches are examples of the familiar saying, "all sizzle and no steak."

Many politicians — not all (it seems the good politicians rarely last on the scene and understandably leave to enter the private sector) — are power hungry and egocentric. They claim to want to help citizens and better the country, but it's difficult to believe them most of the time because they don't seem genuine. Come to think of it, politicians are the antithesis of golf course superintendents — something of which you should be proud.

So, being an election year, we'll soon vote for the 44th president of the United States. For most informed, logical voters, it comes down to two candidates — the Democratic party nominee and the Republican party nominee — even though there are more than two choices. For many, no candidate is ideal, and they vote for who's considered to be the lesser of two evils.

In the context of these political musings, think about the golf industry and its use of people, pesticides, fertilizers, water and land and juxtapose that with legislation the Democratic and Republican parties have sponsored and passed into law. Democrats tend to promote expanding the federal government and implementing tax-burdening philosophies, and Republicans tend to promote shrinking the federal government and futhering pro-business policies. It's clear which party's policies, in general, benefit the golf industry more.

During the next seven months, we're going to see shifts in the political landscape from our TVs, newspapers and computers. Voters are going to form more educated opinions about the candidates. Recently, I've talked to some in the industry who already are preparing and planning for what they view as the worst — a Democratic president who won't be kind to the business interests of the golf industry — with chemical/fertilizer and environmental regulations being the two biggies. Taxes, economic policies and immigration are a few other issues that come to mind. Granted, Republican-driven immigration reform might be more damaging to certain golf course businesses than a Democratic-driven one, but I think we all can agree law and order is much needed in that area.

Those in the golf industry who intend to vote for the Democratic party's nominee for president should ponder two questions: "Why is a Democratic president better than a Republican one when it comes to environmental policies that impact the golf business?" and "Why vote for the same candidate environmental activists vote for?"

Like I said, neither realistic candidate is going to be ideal for many voters, but it's quite clear who the lesser of two evils will be for the golf industry. GCI

John Walsh
Editor
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ASSISTANT'S VIEW

MAKE SURE YOU’RE PREPARED

If you ask yourself whether you’re ready to be a golf course superintendent, you’re probably not. Being ready to be a head superintendent isn’t something that magically happens one morning after a couple of years as an assistant. It takes time, effort and dedication.

The job market has changed during the past 20 years. Back then, if you were an assistant, you were likely one for less than a year before moving up. Now, the job market is full of well-qualified superintendents and assistants looking to move. Assistants have to be prepared to interview along with experienced superintendents to secure the job. You must do your best to prepare yourself to make the successful move and be a step above others applying for the same position.

Among the best ways to prepare to be a superintendent are being involved, networking, asking for more responsibility, being assertive and always being prepared.

Become involved with your local, state and national associations so you can network with peers and members. Being involved with your association is more than just showing up to play golf and knocking a few back. Volunteering, serving on the board if your association (if possible), and writing articles for newsletters and trade publications are a few ways of becoming more well known.

If your employer doesn’t provide the funds for membership, pay for it yourself. The pros far outweigh the cons. You need to be able to say you’re an active member because this allows you to track your education and involvement. If you break it down over a year, the cost is less than a soda a day.

Becoming involved in the associations helps to keep you more in the know. The more you can make yourself visible, the better your reputation and perception will be. This allows you to be prepared to take the next step.

Vendors, USGA agronomists, salespeople, golf professionals, general managers, etc., are all people you need to know. You should also get to know members and/or active golfers. The problem is you might know a wealth of people and be able to call them by name, but if they don’t remember you when discussion of a potential job arises, your networking isn’t effective. Nowadays, it’s not who you know, but who knows you. The best thing is to stay visible. Make sure you use every chance you have to make contact, say hello and participate in a conversation. When you’re prepared to make a move, make sure those in your network know. Getting the word out that you’re in the market for a position only helps you stay on the tips of the tongues of people who might help secure an interview for you.

We all know how to grow grass and run a crew, but you need to be proficient communicating with members or golfers, general managers, golf pros, etc. You also need to deal with the human resource aspect. Ask to help plan the operational budget and capital budget. Ask to help with invoicing and ordering. Work with the mechanic to improve your aptitude with equipment repairs. To be a successful superintendent, you have to be able to do the jobs of everyone who works under you.

Try to get involved with more than the daily jobs and supervising the crew. If you believe running a crew and working on projects is all you need to be a superintendent, rethink your plan. Be as involved as your boss and improve your time management to be able to complete all your regular tasks, plus the new ones, successfully.

Superintendents should be more than willing to let their assistants try their hand at these tasks. It makes sense if they feel you have what it takes to succeed in the industry.

Sometimes, you have to keep asking and asserting yourself to be able to take on some of these tasks. Explain to your boss your intention is to improve yourself. If your boss is against the idea completely, ask for copies of a budget or meeting minutes and read over them all in detail at the least. If your boss is against helping you learn and grow, find another job. Working for someone that doesn’t believe you need to have a well-rounded experience and isn’t willing to help you learn does nothing to help prepare you for the next move.

Always be prepared for the big interview. When you feel you’re prepared and ready to take that next step, prepare more. Interview for some jobs, even if you have no intention of taking the position. You don’t want to go into the interview for the job you really want and stumble around because you aren’t ready. You can read all the articles you want about interview preparation, but nothing prepares you for sitting a table with an interview team questioning you. You need to perfect your strategy and become accustomed to the pressure. Take a folder with examples of procedures and projects you’ve initiated to show your ability. You must be able to sell yourself and your abilities to secure the job you want. These steps can give you the upper hand when that job comes around.

Take the time to start developing strong skills to make you the most desirable candidate. Make a plan for the next five years of what you want to achieve and what steps are needed to achieve those goals.

Becoming a superintendent takes more than checking greens and trenching drainage. You need to prepare yourself, not just your work techniques, to become a successful superintendent.
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OFFERING REAL ADVANTAGES

Jeff Brauer and I have been friends for a long time. He grew up in Toledo, and I grew old in Toledo. So, it’s not unusual for us to talk nothing but golf while we try to break 100 on some of the world’s most difficult courses. Aside from the wonderful camaraderie we share, my discussions with Jeff also have a great side effect: They help make me a better golf course architect.

The American Society of Golf Course Architects affords its members similar benefits – only on a much grander scale. Through the ASGCA, members such as Jack Nicklaus, Pete Dye and Tom Fazio are able to use each other as natural resources to foster professionalism, support design excellence and, ultimately, help grow the great game of golf.

Gaining individual knowledge from collective experiences affords ASGCA members the insight necessary to plan and assist in successful course development and renovation projects. Working with an ASGCA member eliminates much of the guesswork in choosing a qualified architect. That’s why many potential owners, superintendents, managers and developers use ASGCA as their source for seasoned architects for their next course projects. As the ASGCA president, I’m proud to say as many as 88 percent of PGA, LPGA and Senior PGA Tour events are played on ASGCA-designed courses in a given year. That statistic speaks volumes.

ASGCA architects have a thorough knowledge of the game, valuable expertise with financing and permitting, and a sound understanding of how to cultivate the landscape properly to preserve the beauty of the natural environment within a course design. They have a familiarity with heavy construction, agronomy, hydraulic engineering, soil science, geology and civil engineering. With such a diverse skill set, ASGCA professionals are able to preside over an entire project, maximizing a course’s full potential.

It’s also safe to assume ASGCA architects have been around the block because membership in the organization demands it. Our requirements ensure ASGCA membership candidates have spent a minimum of eight years practicing golf course architecture and developed at least five 18-hole courses (or the equivalent) from beginning to end. However, the vast majority of members have experience that far exceeds these initial minimums.

Membership candidates have their work meticulously scrutinized by other ASGCA architects in what often amounts to a two-year process. First, candidates attain sponsorship from three current members familiar with their work. Then, four of the candidate’s representative courses are evaluated by other ASGCA members via a course walkthrough or a round of play. These reviewers also discuss the course design with professionals who know it well (the owner, superintendent or local pro) to attest to the ASGCA candidate’s involvement in the project and his influence on the course’s inherent strengths and weaknesses.

Following a candidate’s course evaluations, a panel interview is conducted where select ASGCA members question an applicant about his experience, design philosophies and goals. During the interview, candidates must demonstrate a firm grasp of design techniques and best practices. It’s not an inquisition, just an opportunity for veteran ASGCA members to truly understand a candidate’s unique insights on the many aspects of course design and development.

Once admitted, new ASGCA members abide by a code of ethics and continue professional development by attending various educational seminars presented throughout the year that keep our members abreast of the always evolving art of modern golf design and construction. At the annual meeting, industry insiders introduce ASGCA architects to new innovations and design trends. Perhaps just as importantly, we engage in informal social gatherings where members readily feed off each other’s shared experiences – both good and bad.

The ASGCA’s educational events often have a direct impact on clients. I look no farther than my friend Jeff, who relayed a specific example of how new erosion-control strategies presented at a recent ASGCA meeting helped save his client money, avoid fines and better preserve the construction site and surrounding lands of their course.

With the creative and highly-specialized nature of the profession, it’s almost impossible (and likely not prudent) for a governing or licensing body to exist for golf course architects. However, through the detailed application process and varied professional development activities, the ASGCA does its best to provide a reliable starting point for those seeking an accomplished architect to aid in their upcoming projects. If your vision includes the design of a new course or the renovation of an existing one, ASGCA architects offer value, expertise, and best of all, peace of mind.

Working with an ASGCA architect is a comfortable and often enjoyable process – like breaking 100 with an old friend.
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GOLFS ABSOLUTE STANDARD

Did you ever wonder what the world’s most beautiful woman, diamond or flower looks like? I’m sure many of us have wondered about those things from time to time. However, the problem we face when contemplating whether any one thing might be the best of its class is there are no established absolute world-class standards to measure against. Because all polling is subjective and opinion driven, mankind never has been able to universally designate one thing or that as the very best of its kind. However, there’s an exception to this premise, and it exists in the golf world. First, some history.

Shortly after I became the GCSAA executive director during the fall of 1980, I met with headquarters staff to develop the editorial schedule for the following year’s association magazine (then known as the Golf Course Superintendent). However, because the GCSAA automatically dedicated its annual March issue to the Masters Tournament – and had been doing so for many years – a problem arose quickly. What writing theme should we adopt for the March 1981 issue? A fresh writing angle was and still is difficult to come by year after year.

I suggested we talk to GCSAA members and staff who attended the Masters the previous year or two and ask them for ideas about the subject based on their visits. Silence fell across the room. I didn’t know GCSAA members and staff weren’t granted access to the Masters, and this surprised me. When I looked into the matter further, I found out the Masters granted PGA and CMAA officers and heads of staff total-access season passes for the full week, free grounds access to the top class of each association’s membership, and issued the PGA and CMAA annual $2,500 checks for each association’s scholarship foundations. The GCSAA was extended none of these courtesies at the time.

Consequently, I picked up the phone and called then-Masters chairman, the late Hord Hardin, to talk about the matter. Quickly, Hardin advised me he was completely unaware of the GCSAA circumstance and offered to correct the situation immediately. He did and the GCSAA has enjoyed equal footing with the PGA and CMAA ever since.

Now, I want to encourage as many GCSAA members (class “A” and “A Retired” are granted free admission) as possible to make a determined effort to attend the Masters as early in their professional careers as possible and tell them why. But first some personal observations/recommendations relative to attending the Masters:

1. Make hotel reservations up to a year early because available hotel space is always scarce;
2. Make sure to visit the course maintenance facility to see an unbelievable level of human and equipment organization;
3. The best days to walk the Augusta National course are during the practice sessions (Monday through Wednesday, after which most superintendents then go home) when the final agronomic fine tuning of the golf course is under way; and
4. Wednesday afternoon (when the Par 3 tournament draws the players and gallery elsewhere) the Augusta National golf course literally becomes a living laboratory where you can see the grounds crew applying final grooming touches to the course for the next day’s start of play and hundreds of golf course superintendents walking the golf course (alone or in small groups) taking pictures and notes and asking grounds crew members a wide range of questions.

5. A Masters visit is a submittable, educational employer expense.

Golf course superintendents should attend the Masters Tournament early in their careers because they’ll see a standard of maintenance excellence that’s not available anywhere else – and unless witnessed wouldn’t be believed possible.

Augusta National might be the only place on earth where it’s abundantly clear to all that an absolute world-class standard has been created and is maintained every year.

Once visited, Augusta National will burn a standard of excellence into the minds of every visiting golf course superintendent that will drive his or her career forever. Granted, no golf course superintendent will ever have the Masters’ budget or be able to close a course for several months each year to further maintenance practices, but that’s not the point. The point is every GCSAA member who visits Augusta National will be reaching for the “impossible dream” (the Masters dream) forever, never realizing it but becoming a better golf course superintendent for life because of the pursuit.
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THE PERFORMANCE APPRAISAL

The only thing managers dislike more than firing employees is conducting a performance appraisal. Why is this, and what should a golf course superintendent do?

Performance is evaluated during appraisals, but the problem is, in most cases, the appraisal becomes the goal. Although valuable, appraisal isn’t the goal. Instead, the goal is to improve performance and enhance job satisfaction. Too often, the performance appraisal is an end instead of a means to improving performance.

Let’s look at an analogy. Few of us look forward to an annual physical because it’s an appraisal of our bodies’ health. We find out if we have any problems, but we rarely leave with ideas and a commitment to improving our health. Again, the appraisal is the end, not a means, to a healthier body. What we need and might even look forward to is a system for improving our health.

Similarly, for the performance appraisal, we need to replace, refocus or supplement it so we have a system that enables maintenance staff employees to improve their performance continuously. The focus of such a system must be improved performance that also results in greater maintenance staff job satisfaction. To meet the goal of improving performance (and job satisfaction), the system must have two key characteristics:

- It must happen when performance occurs – throughout the year; and
- It must be a collaborative engagement between the superintendent and the maintenance staff member or team.

The cornerstone of the system I suggest in my teaching and implement with my clients has two components. The first is providing quality feedback continuously – when the performance occurs. The second is frequent performance management coaching sessions between the supervisor and the employee or team of employees. I typically recommend a monthly meeting, which can be less formal than a performance appraisal. My suggested agenda for the session is:

A. Two coaching questions: What went really well in the last month, and what could be improved?
B. Discuss the specific measures of performance comparing actual performance to expectations. Review performance for the month, and discuss the performance measures one at a time, concluding with setting the expected value for the next month.
C. Discuss specific issues for the next month.
D. Other items.
E. Ask how the coaching session can be better next month.
F. Adjourn.

I’ve found the two coaching questions to be extremely effective when involving the maintenance staff individual or team and making the system collaborative. The first question (What went really well in the last month?) focuses on the positive and sets a great tone for the session. The second question (What could be improved?) has two advantages. It doesn’t put the employee on the defensive because it doesn’t ask what went wrong, and you can insist on an answer because there are always areas for improvement. Try it. When asked sincerely and patiently, you’ll be amazed by what you learn and the employee engagement that will result.

The actual performance compared to expected performance is the heart of the system. You must work with the employee or team to develop specific performance measure and expected performance goals for each month. The comparison should have a coaching and forward-looking tone. The primary objective is to improve performance, not simply determine whether the goal was met. If the goal wasn’t met, view it as being behind 2 to 1 after the third inning of a baseball game and figure how you’re going to tie the game and take the lead.

Discussing how the session can be better next time provides opportunities to improve the session continuously. You might go months without any input, but then, a great idea emerges. Keep asking, but don’t pressure.

E-mail me at rmilligan@trsmith.com for a Word file containing the agenda and a worksheet to assist with the expected compared to actual performance levels.

I realize many of you are required to complete an annual performance appraisal. In my use of this performance coaching system, an annual meeting is still required and valuable. The focus of this meeting, the annual meeting, is on the long-term issues of training/professional development and career development. For your seasonal workers, it should focus on the opportunities they will have (or not have) if they return for another year. For year-round employees, it will focus on their continuing professional development needs and future opportunities at the course or club.

The bottom line: Performance improvement requires a system that operates every day an employee is employed.
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ADVANCING TECHNICIANS

Every year, hundreds of golf courses managers or owners find themselves looking for qualified golf industry equipment technicians, and every year there seems to be fewer available. Many of the equipment technicians in our industry have made the move from the automotive industry or military, while only a select few end up attending college to prepare for the profession. Of those few who attend college, a low percentage seems to stay in the business. Why is that?

For many years, the golf industry looked at technicians as the mechanics, and many course managers and owners throughout the world still have that same view. However, this perception is changing slowly. With the technological advances in equipment and the evolving role of the golf course superintendent, the position is changing rapidly from mechanic to equipment technician — and for some, equipment manager. The old image of a guy holding a wrench just waiting for something to break down is growing into the image of a professional individual who prepares his own budgets and manages a staff, safety programs, facility, etc. The appeal of the position should be changing, yet we haven’t seen an increase of the number of available technicians.

One of the biggest issues is the lack of career awareness. Many people have no idea what a golf course equipment technician is or does. Many people in our industry entered the business by sheer luck or because they knew someone who needed a technician. It’s rare to find someone who knew he wanted to be a golf course equipment technician and took such a direction. We need to encourage qualified individuals to take a serious look at this area of the business.

A second issue is the realization of what the industry is demanding of equipment technicians these days. Many equipment technicians and equipment managers need to have a broad skill set. If you work in the automotive industry, for example, you’re generally working in one specific area, such as oil changes, engines, electronics, transmissions, etc. However, at a golf course, you need to be skilled in all those areas as well as welding, reel set-up, hydraulics diagnosis, electrical systems, computers, etc. Also, think about this: What businesses require someone to be in charge of more than a million dollars worth of assets for an average salary of $35,000 to $40,000 a year? But this isn’t about pay, it’s about making people realize what the industry is asking of technicians. This isn’t something that can be fixed because this is a requirement of the industry. However, identifying demands often can change the sense of urgency.

A third issue most technicians face is poor communication with their supervisor. Take all the aforementioned skills, remove communication, and you have a typical golf course equipment technician’s job. At many facilities, being an equipment technician is a thankless job. One of the rewards is being able to see a beautifully manicured golf course that you helped condition, and for many, that’s all they need. However, when communication doesn’t exist in an operation, you rarely find yourself able to enjoy the results of your work because of time spent scrambling to get things done. This causes frustration and the development of the dreaded “I wish I didn’t have to go in to work today” attitude.

With all this said, how do we address these issues? I’ve always learned that we can’t solve worldly issues until we start at home first. Fixing communication breakdowns, building career awareness and improving attitudes always starts at home. Once technicians see they’re an important part of the team, they become more reliable and are more willing to get things done, and an operation runs much smoother. Superintendents can help technicians by encouraging them to become involved in associations, educational opportunities and equipment decisions. Superintendents should make technicians feel valued. Superintendents will be surprised by how these simple things can elevate an operation from mediocre to excellent.

For those thinking, “I’m not sure about that,” keep this in mind: If you grow the healthiest, most environmentally friendly, greenest turf in the world, how much does that mean if it’s not cut well? That technician is integrally responsible for giving members or guests that impression of “Wow!” or “Man, did you see how bad that looks? I can’t believe we paid to play this course.”

It doesn’t matter if you’re employed by a top 100 course or a 9-hole public facility — they can all be great, but not without everyone working as a team.

It’s the responsibility of every equipment technician and superintendent to ensure that our industry grows and is successful. We need to recruit people to our industry and demonstrate how rewarding it is. However, if we can’t tackle the small issues at home, we can’t expect to grow the industry for the future.

Stephen Tucker is the equipment manager at the Ritz-Carlton Members Golf Club in Bradenton, Fla., and past president of the International Golf Course Equipment Managers Association. He can be reached at 941-309-2513 or stephen.tucker@ritzcarlton.com.

One of the biggest issues is the lack of career awareness. Many people have no idea what a golf course equipment technician is or does.

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E-commerce, or purchasing goods and services through the Internet, is growing at a faster rate than the total U.S. economy. A report released in May 2007 by the U.S. Department of Commerce (regarding all consumers, not just golfers) indicates total U.S. revenue increased 8.1 percent from 2004 to 2005, while e-commerce revenue increased 17 percent during the same period.

With 27 percent of sales online, U.S. manufacturers rely more heavily on e-commerce than distributors or retailers. Business-to-consumer retail e-commerce increased from $76 billion to $96 billion, or 22 percent, from 2004 to 2005. However, e-commerce sales at retail outlets are modest at only 2.5 percent of total retail sales.

Forty percent of core golfers with Internet access indicated they visit golf-related Web sites at least monthly, according to the National Golf Foundation's 2007 golf consumer profile. While that's a substantial figure, it's less than the percentage who read golf-related magazines or watch golf on TV at least monthly – 60 percent and 82 percent, respectively.

When looking into golf-related Web sites, golfers are much more likely to read about or research equipment than to make a purchase. No doubt many do their research online then purchase at a traditional outlet. So, the Web continues to be a critical sales tool for manufacturers and retailers, even if all the clicking doesn't lead to an online purchase.

As with the overall U.S. economy, business-to-consumer e-commerce in golf has increased. Companies plying the equipment trade on the Web include traditional bricks-and-mortar retailers along with dedicated e-tailers. And core golfers are logging on to make their purchases because of the convenience, prices and ability to conduct research.
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Working the trenches

Industry veteran Willie Pennington says friendships drove his stellar career.

By Pat Jones

Ask Willie Pennington about his favorite memories from 35 years of selling chemicals in the ag and turf industries, and he doesn’t say a word about his successes with products, all of the marketing milestones he’s achieved or his sparkling track record with BASF. Instead, he’ll start talking about people.

“Everyone says this is a ‘relationship business’ but my goal is friendship,” he says. “I really want to get to know a person as a friend before I ever start to do business with them. That’s been the secret to my success. Not much of a secret really. To me, it’s common sense.”

Pennington, now 59, grew up in tiny Lismam, Ala., a rural burg in the heart of cotton country. Talent as an offensive lineman on the football team earned him a scholarship at Tuskegee Institute, the traditionally black college best known for being home to both George Washington Carver and the famed Tuskegee Airmen of World War II. He was all-conference at offensive guard for four straight years, and even had a few tryouts with NFL teams following graduation. “I earned a grand total of $200 in my pro career,” he recalls. “I went to camps with Miami, Green Bay and Atlanta before I got hurt. That was the end of it.”

The NFL’s loss was the golf industry’s gain as Pennington turned his attention to a career that began with a production management job at a BASF ag chemical plant in Atlanta. Even in the ’70s, he was one of only a handful of African-Americans in the business and thus started a lifelong interest in recruiting talented young minority candidates for the company. He soon switched to the sales side and, despite having little hands-on ag experience, “immersed” himself in the business.

At the time, the specialty turf and ornamental segment was a tiny, almost unknown fraction of the market at BASF and other basic manufacturers. Yet, Pennington was attracted to the “urban agriculture” market and jumped over to work the Christmas tree segment before eventu-
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ally landing in turf. "When I first started in the '70s, the competition was petroleum companies like Amoco, Gulf, DuPont, Shell and Uniroyal. Application rates were sometimes hundreds of pounds per thousand. Now, we're using micrograms per thousand. The innovation has just been amazing."

Over his four decades in the golf/turf market, Pennington was best-known as "Mr. Basamid" as he became the company's in-house expert on the use of the fumigant to renovate golf courses. When BASF handed Basamid off to Advan LLC a few years ago, he returned to his roots as a sales rep in the Carolinas. He finally gets to see his wife of 40 years, Aris, almost every day. ("She never complained about my travel schedule over all those years. Not once. What a woman!")

His 35th anniversary in the market - a benchmark reached by very few salespeople - seemed like a good moment to talk with Pennington about the changes he's seen, the challenges we face and the experience of being a black man in a nearly all white market. As always, the former lineman was more than willing to talk freely about his time in the trenches.

**What's the biggest challenge facing the ag and turf chemical business right now?**
There just aren't many new compounds. You want to give the superintendent something he's looking for, but it won't often be something "new." The challenge we're facing is to find new ways to deliver value. If you look at what has happened in ag with (genetically modified crops), the market is basically a single compound - glyphosate. The ag market hasn't so much declined as it's become dominated by one compound. It's the sad truth...

Turf is in better shape because it offers better profitability than ag, and there's probably more business than everyone can handle. Some customers are obviously going generic, but by and large, they support the basics that bring value and innovation to them.

**How has your approach to day-to-day sales changed over the years?**
I look at it this way: I change my approach on every visit. When you invest in people - which is what I do - you don't just walk in there and ask what they need and try to sell them what you have that might work. I just listen to their problems and issues. It's like going to a palm reader. They listen and then feed it back to you. All I do is talk about features and let the super derive the benefit he's looking for. I don't take the same "cookie cutter" approach to everyone.

**In your experience, what do superintendents really want from suppliers?**
The two things that stand out are continuity and trust. Continuity in the relationship means you've been around long enough that those who
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know you trust you. After they feel you out and know who you are, then they may be ready to do business. It’s the trust factor. You have to know what they’re up against. Someone is trusting them with $20 million worth of real estate. He’ll know how knowledgeable you are within a few sentences, and decide whether to trust you with his $20-million piece of property. It may take two to three years to get to that point.

It all goes back to investing in people. I’ve never considered myself a salesman. I make friends who I sometimes do business with.

You seem to know everyone in the business. How do you manage to keep track of all the contacts you’ve made?

I may not remember the name right away, but the mental Rolodex starts turning and it usually comes to me. People in this industry tend to stay in the industry. They may change titles, but they stay in the business. It’s a love thing... they stay because they love it.

How have you seen superintendents evolve and change during your career?

The relationship hasn’t changed for me. Young or old, I’ll get to know what his wants, needs and desires are before we ever talk product. We may talk politics, sports, family; whatever. I have to know what makes him tick. People in sales spend too much effort trying to offer a product rather than what they can offer as a person. A lot of young sales guys don’t realize that potential customers are still just people. We’re very social beings. People do business with people, not companies.

You’re one of only a handful of African-Americans in the industry. What kinds of challenges has that presented?

In the early days, it was a challenge. It became a personal challenge to me. But I kept pushing and got past it with almost everyone. My philosophy was, “I gotta feed my family and you gotta feed yours.”

Why are there still so few non-whites in the business?

There are a lot of things tied into it. One is the old myth that golf is a game for rich people. Good minority candidates may have already perceived that and dismissed it as a career. I never looked at it that way. You get past the racial thing pretty fast. It’s just a sport... it baffles me why it isn’t of more interest to young blacks and others. It’s like the presidency... wealth isn’t a requirement, but how many people honestly believe they could ever do without money? It’s the same thing in our business. The perception of the game crosses over to the business. But the truth is that agronomy is agronomy. It doesn’t matter what color you are as long as the course is green.

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IMPRESSIVE & AFFORDABLE! WHAT SUPERINTENDENTS HAVE TO SAY...
Are there things the industry can do more to “look like America”?
I’ll just say that I don’t see the world through rose-colored glasses. I’m a realist and I want to work with the best and the brightest. If you feel that you’re the best and want to be the best, then you can be on our team. We’ll invest in you and make you better. It’s not out of reach for anyone. Sure, diversity is a mandate within our company and I think within the industry; but we don’t pursue diversity because it’s required. We do it because we want to and because it’s the right thing to do.

You were Mr. Basamid for a long time. What’s it like to not work with that product every day now?
I look back and think about the great superintendents I worked with every day during those years. I discovered pretty fast that they were tinkerers by heart, so I became one too. Basamid made me constantly tinker and think. That helped us figure out a pile of different ways it could be used. That product is a perfect example of the old saying that there are always different ways to skin a cat.

What’s your advice for a superintendent who wants to make the jump into sales?
You have to have a unique ability to balance the practice of selling with investing in people. You have to be willing to turn over a lot of rocks. You’re not growing grass anymore, but if you rely on that ability you used on the course to manage people and be patient, it’ll work. There’s an old adage that people like to owe you a favor. Cash in on a couple of those – give a couple back – and you’ll win.

I’d estimate that very few superintendents – maybe less than 10 percent – make the jump successfully. They just aren’t ready for all the meetings, the reports and the changes that will come in their routine. Sometimes they also don’t listen to the clues that customers give them. One of the practices I’ve used over 35 years is that I very seldom just hand out a (business) card. I wait for the customer to ask for one. It’s a clue that they want more. It says, “I want to know more… I want you to come back.”

Final thoughts?
I just want to thank all the people I’ve known through the years who’ve added so much to my life and success in this business. They’re the ones who made me. A lot of people don’t understand how those relationships shape a sales rep and make them the best they can be. All those friends have defined a 35-year career. I wouldn’t change that for anything. They inspire you to do better. I want what’s best for them and they want what’s best for me. That’s the bottom line.

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The golf course management industry is a close-knit business. Therefore, when it comes to getting a new job, leaving one, or firing or hiring golf course superintendents, the Golden Rule applies.

"What we're trying to do on a national level is keep this from being a cutthroat profession," says Scott Woodhead, the senior manager of governance and member standards for the GCSAA. "Have respect and integrity for your peers. Treat them like you'd like to be treated."

In that regard, the GCSAA has a code of ethics and professional conduct guidelines. The code of ethics is a governing document established in the GCSAA bylaws for its members that outlines the highest professional standards. However, they're standards, not laws.

Anyone has the right to work, but the GCSAA discourages applying for a job that hasn't been posted, for example.

"If that member who's seeking employment does so in such a way that he or she is making slanderous or inflammatory remarks, it can be deemed a violation of the code of ethics," Woodhead says. "That's something that can be taken to court. But unless there's defamation of character that has occurred in seeking employment, then it's not a violation of our code of ethics. That basically keeps everyone from breaking the law in terms of seeking employment."

Ethics play a significant role when superintendents change jobs

By T.R. Massey
But the code doesn’t come into play the majority of time, Woodhead says.

More nebulous is when one superintendent visits another’s course as a consultant or when looking for a job.

“The first statement under the professional conduct guidelines is that a member should always contact the superintendent regardless of the intention of the visit,” Woodhead says. “That covers everything from looking for a job to getting a free round of golf.”

And applications for employment should be tendered only if the current superintendent is aware of it.

“We won’t advertise a job opening for an employer until we have notification the current superintendent has been told his job is being advertised,” Woodhead says.

It’s not against the law to visit a course without prior notification, and being approached by an employer and asked to visit a course and give an opinion isn’t a violation of the code of ethics, Woodhead says.

“But the GCSAA doesn’t condone that sort of behavior,” he says.

If an employer contacts a potential candidate, Woodhead says that person should call the current superintendent to let him know that he has been contacted about his job.

“Those are the types of things we can’t enforce with sanctions, but we’re trying to get our members to abide by the guidelines,” he says. “Would my actions meet the approval of my peers? If what I’m doing is on the up and up, it shouldn’t matter if the next guy behind me comes in and does the exact same thing.”

Woodhead says if a superintendent tells the GCSAA a consultant came onto his grounds without previous contact, the organization will write a letter with a copy of the guidelines and ask the consultant to review the professional conduct guidelines and abide by them.

“We’re not a union,” Woodhead says. “We can’t guarantee a job. We don’t have any powers to prevent anyone from doing anything other than to provide them what we see as a professional way of doing business. If it’s illegal, we take similar action to a defamation suit, if it got to that point. Otherwise, it’s a matter of helping the superintendent find that next opportunity and sometimes going to the person who’s doing the incorrect action and getting them to do the right thing going forward.”

GET IT IN WRITING
Gary Reeve, a partner at the law firm Kennedy Reeve & Knoll in Columbus, Ohio, is a certified specialist in labor employment law. He says superintendents are like any other employee and can be fired for almost any reason at all.

“As long as they don’t have a contract or union affiliation, they are at-will employees,” Reeve says.

That means they can’t be fired for age, race, gender, disability or national origin, and depending on the size of the staff (if there are more than 50 employees), the Family Medical Leave Act.

“At-will employment works both ways,” Reeve says. “An at-will employee can up and quit, and there’s no legal recourse.”

For a superintendent to have a contract dispute, the contract must specify a duration of time of employment, Reeve says.

“It can’t be an offer letter that details compensation,” he says. “That’s not an employment contract. It has to have a duration of time in it. If it says June of 2007 to June of 2008, and 60 days we’ll notify if we wish to renew, then we’re talking about a contract of duration.”

The GCSAA would like for its members to have duration contracts, but it doesn’t happen nearly as often as it does for general managers or head pros in the industry. Lyne Tumlinson, director of career services at the GCSAA, says her unofficial research shows that about 25 percent of GCSAA Class A members have a contract for duration compared to almost 75 percent for general managers or pros.

“When I was hired, the general managers were friends,” Tumlinson says. “They had someone call me so I could call them so he could say he didn’t call me. The professional thing to do is have the general manager call the other general manager and ask if he has any objections. The correct protocol would be for someone at one club to contact someone at the other club.”

When employees leave, the hope is that everyone keeps a professional attitude.

“Everyone is trying to improve themselves,” Mangum says. “You might not want them to go, but how can you hold them back? How can you be angry at them for looking to get a better job?”

But firing is an entirely different situation.

“How do people get fired?” Mangum asks.

“The three top reasons would be: One person got in power and didn’t like someone, and one person got rid of somebody — you see that a lot. Second, someone says, ‘We want to go to the next level.’ They perceive the person they have can’t take them there, when in fact they don’t know what level they’re at. Third is when a new

“Managing golf courses is big business. It’s sad to say, but anything goes. It’s like any other part of corporate America.”
- TOMMY WITT, CGCS

cent of GCSAA Class A members have a contract for duration compared to almost 75 percent for general managers or pros.

“A lot of superintendents don’t think to ask for one,” she says. “I wish a whole lot more had contracts that stipulate a time.”

THE RIGHT FIT
Contracts aside, the most important thing when hiring a superintendent is quantifying the facility’s needs, Tumlinson says.

“What’s good for Augusta might not be good for your facility,” she says. “Look at a marketing plan, strategic direction and the maintenance standards at your facility. You need to have the perfect person for your golf facility. That might mean looking through hundreds of resumes, and it might not be a person with a big name.”

Yet, superintendents should have their own career goals.

“Being at a high-profile club might not be right for you,” Tumlinson says. “When I help superintendents write cover letters and resumes, I ask them to check and see what challenges are there at the job and find the challenges they’ve faced before and how they fit.”

MAKING A CHANGE
Ken Mangum, the director of golf courses and grounds at the Atlanta Athletic Club, says it’s been his experience that friends in the industry can help with a job search.

“When I was hired, the general managers were friends,” he says. “They had someone call me so I could call them so he could say he didn’t call me. The professional thing to do is have the general manager call the other general manager and ask if he has any objections. The correct protocol would be for someone at one club to contact someone at the other club.”

When employees leave, the hope is that everyone keeps a professional attitude.

“Everyone is trying to improve themselves,” Mangum says. “You might not want them to
general manager comes in and wants to bring in his own people. That’s OK as long as he gives a
guy a chance for a couple of years to show what he can do. Many times, the guy doesn’t get that.
They don’t get the full benefit of the doubt.”
Mangum has seen a lot of bad blood result
from firings.
“You find out how unprofessional people are,” he says. “I saw a situation in which a single
owner hired a guy, and he was set to go to work on Tuesday, and the owner hadn’t told the old
person. The new guy called the old guy on Friday
to tell him he’d be there, and the old guy didn’t
know he was gone.”
It’s a shame when a club decides it wants a
new set of eyes without telling an employee
about current expectations, Mangum says.
“A guy has given a club 30 years, and he had to
leave after 30 years without fond memories of the
club he’s given his life to – without a single
written documentation saying, ‘You need to
do this or that.’ They don’t sit a person down
and say, ‘We don’t like this or that.’ If I’m not
doing something, and I don’t know it, how do I
fix it?”

CONSULTANTS
Another scary aspect about the business is the
advent of consultants, Mangum says.
“Many times clubs will bring someone in to
do their dirty work,” he says. “Unfortunately, the
clubs bring in outside consultants and decisions
are made. Is that coincidence or by plan? Every-
one has to draw their own conclusions. When
you walk into a meeting, and there’s a consultant
there, and you had no prior knowledge of it, you
better get your resume ready.”
A consultant’s job can be easy because he can
point out flaws, then leave.
“You can go into any golf course on any given
day and find things that aren’t done,” Mangum
says. “Is it a leadership issue? Is it a budget issue?
What’s the real problem?”
Instead of hiring a consultant, Mangum
prescribes bringing in friends and associates
for their advice.
“If you’re proactive, the chances of bringing
in a consultant are less,” he says. “Consultants
can be perceived as a person who can make
problems go away. You always have to look at
the track record of consultants. You need to do
some reference checking and follow up on them.
You’re assuming the consultant has a proven
track record in the area, the business, longevity.
You are assuming a lot of things.”
One also can take advantage of free advice
from the USGA’s Turf Advisory Service.
“They see many golf courses in your area,”
Mangum says. “They’re regional, and the USGA
is respected by people in golf. They aren’t sell-
ing anything. They make no money on outside
products and equipment. They’re not biased,
and they provide a lot of information. And they
aren’t there to bury the hatchet in somebody.
They’re there to help.”

Randy Nichols worked at Cherokee Town and
Country Club in Dunwoody, Ga., for 27 years
and now has his own consulting business. He
agrees with Mangum that employees need to
understand the expectations of employers.
“If someone does it wrong the first time, I feel
like it’s my fault that I haven’t told them exactly
what my expectations were,” Nichols says. “I’d
sit him down and give him 90 days.”
As a consultant, Nichols says he would never
go on a property without first telling the super-
intendent.
“I tell them right up front, if you don’t want
me there, I won’t be there,” he says. “I try to help
superintendents. I’m not there to fire someone.
It’s not my ambition to fire someone. I’m on the
side of the superintendent. I’m there to help
him keep his job.”

ON THE UP AND UP
Tommy Witt, CGCS, director of golf course
operations at Northmoor Country Club in Chi-
cago, says there are many superintendents of
noble character and integrity who will always
try to do the right thing when it comes to pur-
suing a job.
“And likewise, there will be others who aren’t
as committed to fairness, if you will, and might
try to prosper at the detriment of others,” he
says.
The business isn’t as bad as many other profes-
sions in the world, but it’s not like it was 20 or
30 years ago, Witt says.
“Managing golf courses is big business,” he
says. “It’s sad to say, but anything goes. That’s
the evolution of our business. It’s like any other
part of corporate America. There are superin-
tendents who will try to get a job someone else
already has. There’s no positive attribute about
a person who would do that. But the GCSAA
can’t suspend or exile them. The right way to
look for a job is – whether local, national or
international – to set up a good network. Look
at the GCSAA employment service. It’s your
network of people across the country. You’re
aware of when things are going to happen. When
it happens, you apply for it.”
A disturbing undercurrent in the industry is
typified by Witt’s unidentified friend.
“A friend of mine was trying to get a certain
job, and I said, ‘That job isn’t open yet. They
haven’t terminated that superintendent. It’s
not a job yet.’ And he said, ‘If I don’t go for it,
somebody else will.’”
Witt asks if anyone would want to be treated
that way.
“If you apply correctly, get your credentials,
support material, letters of recommendation,
resume, work history, curriculum vitae and pho-
tos and send them in, you’ll get a look,” he says.
“I understand people can be desperate for jobs.
It’s easier to understand why someone might do
that, but desperation attempts rarely work.
“You may land a position under somewhat
suspect practices, but there’s a good chance that
it will take you a long time, if ever, to outgrow
what you’ve done with superintendents in the
area,” he adds. “There’s a good chance that you
would be an outcast because that’s not what
most guys are about.”

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A NUTRITIONAL BALANCE

Soil tests pinpoint subsurface needs. By T.R. Massey

There are many nebulous factors working in tandem when keeping turfgrass healthy. Water, fertilizer, pesticides and mowing programs are important. But looking out over a verdant stretch on a golf course tells only part of the story of what's happening with the turfgrass growing there. The true tale lies in the soil beneath the surface.

For a healthy turf stand, the soil must be in proper balance, and even more important are the nutrients contained therein. The proper mix of food for turfgrass plants must be in harmony. This is determined through soil and nutrient analysis – an effective tool used by superintendents.

(continued on page 68)
BUILDER EXCELLENCE AWARDS

Chambers Bay Golf Course in University Place, Wash. Photo: Aidan Bradley

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— Bob Farren, CGCS, Golf Course and Grounds Manager

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The GCI staff presented the 2008 Golf Course Industry Builder Excellence Awards at the Golf Course Builders Associations of America's awards dinner, which occurred in conjunction with the Golf Industry Show in Orlando, Fla., in February. Four awards were presented. Frontier Golf won the Affinity Award for best environmental project with the restoration of The Old Course at Bedford Springs Resort in Pennsylvania. (See page 4B.) Genesis Golf Builders took home the Legacy Award for the best renovation project with the OSU Scarlet Course in Columbus, Ohio. (See page 10B) Seaside Golf Development earned the Heritage Award for best reconstruction with the Pensacola Country Club in Florida. (See page 18B.) And Heritage Links won the Creative Award for the best new construction project with Chambers Bay Golf Course in University Place, Wash. (See page 26B.) The following four articles depict these award-winning projects.

FROM THE GCBAA

The Golf Course Builders Association of America's members are dedicated to the professionalism of golf course construction and renovation. For more than three decades, they've been providing golf development with the best built courses in America. GCBAA members are proud to participate in the annual Golf Course Industry Builder Excellence Awards that recognize the best builders in four categories: best new construction project, best reconstruction project, best renovation project and best environmental project.

On behalf of the GCBAA's entire membership, I would like to congratulate the 2008 Builder Excellence Award winners and Golf Course Industry for this excellent program recognizing these outstanding builders and providing this competition to strive for these prestigious awards. The program also provides an incentive for an entire team of builders to strive to be the best at what they do.

Bob Pinson, GCBAA president
President
Course Crafters
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A river runs through it

A stream dictates the restoration of a historic course in Pennsylvania By John Torsiello
Like a Renoir or Monet painting that has had its beauty stolen by years of neglect and mishandling, the historic Old Course at Bedford Springs Resort in south central Pennsylvania was a sad sight just a few years ago.

Undermaintained and victim to the ravages of a stream run amok, this unique work of three notable architects – Spencer Oldham, A.W. Tillinghast and Donald Ross – retained only a visage of its former style and beauty.

The new owner of the resort, Bedford Resort Partners, decided something had to be done to save the masterpiece and to bring its property into the pantheon of great Northeast resorts. In the spring of 2005, it hired Ron Forse, a golf course renovation expert, to plot the rebirth of The Old Course. Now, the “new” Old Course at Bedford Springs Resort has reemerged with a remarkable luster and vitality.

“The course almost was in a comatose state when I was asked to look at it,” says Forse, who has reworked Salem Country Club in Peabody, Mass. (an original Donald Ross) and Newport Country Club in Newport, R.I. (an original A.W. Tillinghast). “I saw a course that was unkempt and old but one that was well loved by the people of the region. When I saw the features that were still there – the green complexes, bunkers and mounding – it was fascinating. It stoked our fires and got our creative juices flowing. It was a good opportunity to do something special.”

Forse collaborated on the restoration with Jim Nagle, a design associate with Hopwood, Pa.-based Forse Design.

The course’s architectural intrigue lay in the fact it was a merger of three classic styles: Oldham’s chocolate drops and geometric S-curved and donut bunkers; Tillinghast’s classic touches that included Tiny Tim, a storied par 3; and Ross’s classic springs course with small, raised greens. Oldham designed the original 18-hole course in 1895, and Tillinghast’s redesign changed the layout from 18 to nine holes in 1912. In 1923, Ross redesigned and expanded the course back to its original 18-hole layout. In 1984, the course was designated a National Register Historic District.

“We realized when we took over here that for us to be at a level where we wanted to be, in competition with The Greenbrier and The Homestead, we needed to have a golf course of the quality guests would appreciate,” says Keith Evans, managing partner of Bedford Resort Partners. “Our objective was to celebrate the history of the golf course. We knew Ron Forse and his firm had done a lot of work on historic courses and he had a passion for it.”

A QUICK ONE

The owners spared little expense making their dream come true. About $7 million was earmarked for the project, which started in June 2006. Because the owners wanted the course to be operational as quickly as possible for its guests, the project had a remarkably short time line. It had to be completed by October 2006 and be playable by July 2007 when the resort reopened.

“It was a quick completion date,” says Nick Mazzella, business manager of Jones Mill, Pa.-based Frontier Golf. “We had more than 100 employees working on site sometimes, and we worked two shifts. We did some cart path work under the lights, and it was nothing short of amazing how smoothly things went. We got a big break with the weather, which was good for the most part.”

RUN, SHOBERS, RUN

A complete overhaul of the course was called for, from the irrigation system and drainage to fairways, greens, bunkers and tees. One of the most vital components of the project was the restoration of Shobers Run, which dissects the course. The stream had become severely eroded and filled with sand and silt. It often flowed out of its banks during heavy rains and was causing considerable damage to the course, as well as making it almost impossible to keep the course open on days when it rained heavily.

“The project couldn’t work without the stream restoration being a major part of it,” Mazzella says. “It was absolutely the single greatest factor to finishing the golf course the way we wanted it finished.”

Every day, the stream was struggling to stabilize itself, Forse says. The erosion, silt and sand buildup raised the level of everything. Superintendent Dave Swartzel knew the stream was at the root of many of the course’s problems.

“Every time we received an inch of rain, the course had to be shut down,” Swartzel says. “Without doing the stream work, it didn’t make sense to put all that money into a renovation.”

Bedford Resort Partners called in Lititz, Pa.-based Land Studies, an environmental restoration and planning firm, to prepare an analysis of the stream and devise a game plan. It proposed to remove layers of silt and sand from 18 inches to 4-feet deep on the stream bed, as well as create an 80-foot buffer zone on each side of the
stream serving as wetland habitat for a variety of flora and fauna and helping to protect the course from flooding.

The stream work cost $1 million and was spread out over 6,200 linear feet. The stream project, which included the building of several new bridges over Shober’s Run, received fast-track approval from various state and federal agencies because it was seen as enhancing and protecting the natural environment of the property.

“Once the government agencies came to the site, and we explained exactly how it was going to work, how the water flow was going to be and the wetlands that were going to be created, they got on board,” Evans says. “I remember walking out of the meeting we had about the issue and thinking what Land Studies wanted to do was pretty radical. There were going to be no retaining walls, and it was going to take the stream back to where it was 200 years ago. Now, we couldn’t be more pleased. We have a gold medal trout stream where the native brook trout are returning in numbers, new wetlands and an unbelievable scenic ribbon of beauty passing through the course.”

“We created 11 acres of wetland with the new flood plain, and we have all kinds of wildlife in there, from blue heron to deer,” Swartzel says. “It’s a big win for the environment, for us from a maintenance standpoint, and for the golfers with the way the stream comes into play on a number of holes and adds to the beauty of the course.”

The only real surprise Mazzella’s workers encountered during the project was new, natural springs they kept unearthing.

“Natural springs are littered throughout the course,” Mazzella says. “What we did was channel the spring water into the stream corridor, which allows the golf course to function better from a drainage standpoint.”

HISTORICAL INTEGRITY
A considerable benefit of the stream work was the excavation of about 65,000 tons of valuable fill for use on the golf course and driving range.

“We were able to raise almost every green using the footprint of what was there for historical integrity,” Forse says. “Every green was sitting too low and had too much pitch for today’s green speeds. We were also able to use the fill to build up some of the fairways as much as three feet.”

The team chose A1 and A4 bentgrass for the greens, a mix of SR1119, MacKenzie and Southshore bentgrass on the fairways and tees, a blend of five types of Kentucky Bluegrasses for the rough, and various fescues for the second cut of rough and the native rough.

What the judges said

“This project was successful primarily because of the creek restoration, which allowed them to recapture a capacity for storage during storms and to eliminate floods. It also gave them a place to drain the golf course features they were working on to make the project work. It was something they hadn’t done before, but it was very well done. They were able to deal with the environmental compliance issues, especially those related to the fish that were saved. The problem-solving ability of the contractor and its ability to plan the work well and aggressively solve problems was important.”

- Ray Davies, director of golf course maintenance and construction, CourseCo

“They had to deal with a creek that ran through the property, reconstructing that creek and creating a large, significant flood plain following that creek. They handled dealing with the environmental restrictions and the permits and approvals required for that very well. They made it all work. It sounds like the benefits of what they did turned out well in terms of aesthetics and being able to handle floods better.”

- Chris Wilczyinski, principal, Arthur Hills/Steve Forrest and Associates

“They did many creative things dealing with the creek that runs through the property. The work they did to restore the creek bed and create the flood plain runoff storage was an excellent thing to do. It looks like they learned on the job. The original subcontractor that was brought in did the first the first 100 feet, and Frontier did the rest of the 4,900 feet. It was an extensive piece of work, and they did a great job.”


“Frontier increased the flood plain by restoring 5,000 linear feet of stream bank 80-feet wide, which increased the stream elevation. They also used all of the excavated material that deposited throughout the years of flooding as topsoil throughout the facility and didn’t haul anything away.”

- Jim Roney, director of golf courses and grounds, Saucon Valley Country Club in Bethlehem, Pa.

“Frontier was able to handle some unforeseens on the project and was able to offer solutions, value engineer the situation and come up with positive solutions to get around the problem and make everything great at the end of the day.”

- Rex VanHoose, senior v.p./managing architect, Jacobsen Hardy Golf Course Design
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"We went with bent for the greens, fairways and tees because of its resistance to dollar spot, which is one of our biggest disease issues in the Northeast," Swartzel says.

**A UNIFIED FEEL**

One of the most significant commitments Forse made to the project was to create a course that, while reflecting the varied styles of the three original architects, had a unified feel.

"We wanted to retain the authenticity of the original designs but also create a state-of-the-art resort course," he says. "It was the kind of project you could really sink your teeth into. I would think about the design at all hours of the day and night. We have worked on more than 40 Ross courses and 10 Tillinghast courses but never one designed by Spencer Oldham, who was a pro from Baltimore. We were able to tie everything together through research and great care."

Holes 17 and 18 were reinstated because when the practice range was constructed in the 1970s two finishing holes, a par 3 and a par 4, were removed, Noble says. Holes 16 and 17 were added, and the current 16th played as the 18th. Noble and Forse decided to bring back the 1923 course, which included the finishing holes as played today. The two holes were part of Tillinghast's work.

"One interesting thing we found was several of the greens at The Old Course, the eighth and the ninth, are mirror images of other holes Ross did around the same time," Forse says. "It was fascinating to see certain specific ideas that Ross had at the time and how he made them work."

Frontier Golf has worked with Forse a lot during the past 16 years, so it understood his style and what he wanted.

"When he said, 'I want to do on this hole what we did over at Sunnehanna (Country Club, a Tillinghast course in Johnston, Pa.)' or 'I'd like to see the same thing here as on that hole at Kahkwa (Club, a Ross course in Erie, Pa.),' we knew exactly what he meant," Mazzella says.

**WHAT'S BEST**

All involved in the restoration praised the teamwork of the various parties involved.

"Some owners might have been tempted to spend enough money on the course to say they did something, but not here," says Swartzel, who joined the staff two years ago as work was being planned. "We did everything the right way, and we addressed every issue as a team and with the thought of what was best for the golf course. It comes down to the new maintenance equipment, staffing and operations budget we have so that we can continue to maintain the course at a high level." GCI
pleasurable golf course is not necessarily one that appeals at first
sight, but rather one that grows on the player like good music,
a good painting or good anything else . . . ”

- Dr. Alistair MacKenzie

The redesigned bunkers feature high
sand lines and thin or lacy grass fingers.
Photos: Windfall Golf

Capturing the
essence of the past

The OSU Scarlet
Course renovation
reflects Alistair
MacKenzie’s
intentions

By David McPherson

Dr. Alistair MacKenzie – the mastermind behind Augusta National and Cypress Point
and known as the "course doctor," – died in 1934 before seeing his vision for the Ohio
State University Scarlet Course in Columbus come to fruition. He completed the original
drawings and supervised the work of contouring the greens, but what the course eventually
became didn’t feature his distinct design traits. The famed architect from the Golden Age of
golf course architecture would be pleased with what the Scarlet Course has become, especially
after it underwent a considerable renovation in 2006. Thanks to a renovation lead by Nicklaus
Design, the Scarlet Course is now, more than ever, a pleasurable course that grows on players
like fine art.

The renovation plan was discussed first in the late 1990s, but nothing was done until 2004
when Nicklaus Design was chosen to redesign the course. The $4.2-million facelift was paid
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Developing the bunkers correctly was challenging because of the “bull nose” look and the high, steep faces.

Photo: Windfall Golf

for by the Al and Martha Phipps Ohio State Golf Course Improvements Fund established by an OSU alumnus.

“This is a dream come true for me,” says OSU men’s golf coach Jim Brown, who has been at the helm of the university’s golf program for 35 years. “I have so much passion and love for the Scarlet Course that I’m elated to see what Jack Nicklaus has done. We now truly have a MacKenzie course, complete with his greens and bunkering.”

Jack Nicklaus and his team of designers worked collaboratively with Brown and his staff to restore the course to the way they believed MacKenzie originally intended it to play.

“They kept us involved with what they were doing and wanted us to approve everything that was going to happen,” Brown says.

One of the key things Nicklaus Design wanted from the outset was input from coach Brown. “He was interested in being able to have the top collegiate course in the country,” Nicklaus says. “Ohio State has always had a reputation of being a strong venue for the NCAA and other events, and coach Brown was interested in making sure the golf course had as much spice in it as it could.”

Because MacKenzie left little of his design on paper, recapturing his vision was one of the Nicklaus design team’s biggest challenges during the restoration.

“We had an initial routing plan to reference, but no working drawings,” Nicklaus says. “Our team studied MacKenzie’s work throughout the world, and our staff even visited certain courses to gain a better knowledge and sense of his design philosophy. Then, we tried to take what he would have envisioned, apply it to the design that was already there and work from it.”

To get a better understanding of a possible bunker style that MacKenzie might have developed, Genesis Golf Builders’ lead shaper Steve Page went on a tour of the remaining West Coast golf courses that still show the MacKenzie influence. During that tour the “what would MacKenzie have done” or the new Scarlet bunker style was developed, says Ron Freund, president of Genesis.

CLASSIC BUNKER DESIGNS
First, the bunkers were redesigned to appear more like classic MacKenzie bunkering designs at his other championship courses, which typically feature high sand lines and thin or lacy grass fingers.

“The bunkering at Scarlet changed over the years to be the fairly simple, round or oblong bunkers you see on many golf courses today,” Nicklaus says.

The position of the bunkers also was altered to modernize the course.

“Previously, the fairway strategy was a bit dated, and the bunkers were easily carried by today’s long hitters,” Nicklaus says. “The bunkers we did as part of the restoration were placed more in line with today’s carries.”

The biggest challenge (besides meeting the May 2006 opening after starting in May 2005) was recreating MacKenzie’s bunkers – more specifically, the bunker edge or lip – says con-
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consulting agronomist Mike McBride, president of On Course Management.

“These lips have a particular rounded or what we called a ‘bull nose’ look,” he says. “This bull nose lip, along with the high, steep bunker faces, presented a problem to develop correctly and ensure they could be maintained properly. We knew the bunkers were going to be high maintenance, so ProAngle sand and an over-engineered drainage system were required. We also installed SandMat bunker liners on all the faces to eliminate clay and soil contamination from the subgrade.”

Then the question became how to form and maintain the bull nose lip around the bunkers.

“It actually protruded out over the bunker face a little,” McBride says. “At first, we tried a fabric tube sock that set in a V-groove around the bunker. This became impractical because of the time it took to fill the sock with soil and the weight of the sock to place it around the bunker edge.”

Genesis Golf Builder’s project superintendent Bill Sanders and McBride finally figured out a way to form this detailed edge by shaping it by hand, taking the SandMat bunker liner up the bunker face around the bull nose and underneath the Kentucky Bluegrass sod. This method stabilized the bull nose and protected the sand flash at the same time. It all became one unit – the roots of the Kentucky Bluegrass knitted through the SandMat and the problem was solved, McBride says.

Brown can’t say enough about how the bunkers turned out.

“They’re fabulous,” he says. “They look like MacKenzie bunkers, and when we took the sand out of the old ones, we could see the original design. The bunkers are more MacKenzie-like now than they were before, and the course is much more difficult. All the fairway bunkers are from 285 to 315 yards out, which has tightened the driving area. The greenside bunkers are very deep, and some have two to three levels.”

Gary Rasor was the golf course superintendent during the restoration, but he left at the tail end of the project and was replaced with the superintendent Dennis Bowsher. Bowsher’s first day on the job was eight days before the official rededication of the course by Nicklaus and nine days before the NCAA Women’s National Championships. Yet Bowsher agrees with Brown that the bunkering has recaptured Mackenzie’s vision and made the course what it is today.

“They are very big and dramatic, and the ProAngle sand allows for a very firm bottom with minimal erosion,” Bowsher says. “There’s also a geofabric liner on the slopes to help prevent erosion.”

While the bunkering has beautified the course, it’s also made the Scarlet Course more difficult for players and added increased labor and maintenance costs to Bowsher’s department.

“Because they’re so deep, there’s a great deal of difficulty when playing,” he says. “This also makes it difficult for some of our elderly members to physically walk into and out of the bunkers.”

The bunker maintenance is labor intensive because the slopes are mowed with Flymo hover mowers and the clippings have to be removed from the sand. Mowing them once a week, trimming the edges, then blowing and raking them requires about 120 man-hours, Bowsher says.

“There’s a tremendous amount of labor to maintain the bunkers,” he says. “A minimal touch-up requires at least 32 man-hours,” he says. “There’s also an added labor cost to irrigation. The slopes and crowns around the bunker demand precision hand-watering with a hose. We also try to enhance the water infiltration by using wetting agents.”

### What the judges said

“Genesis did an outstanding job with a very difficult situation: a total change in scope about half way through the project that required them to adapt very quickly and work through the winter in a pretty tough climate. The results look outstanding. It must have been fun to try to anticipate what Alister MacKenzie would’ve done. I’ve seen a lot of MacKenzie courses, and it looks like they accomplished that. Ohio State accomplished the goal of being the No. 1 college course in the country.”


“Genesis employed ‘a what would MacKenzie do’ concept. As a result, they sent their lead shaper to visit some MacKenzie golf courses to become accustomed to the design style to show they really did their homework. Dealing with the university’s prevailing wage and the state of Ohio for funding always adds some challenges.”

– Jim Roney, director of golf courses and grounds at Saucon Valley Country Club in Bethlehem, Pa.

“Genesis had many challenges to meet on the project. The first one was four months into a six-month project. The scope increased 40 percent, and they had to regroup and get the job done on time and on schedule to allow for the NCAA Women’s Championship to be played the following month. They met these challenges. They provided value engineering to get around the difficulties that were presented to them. They were trying to bring back the vintage MacKenzie bunkering, and they captured that. They spent time researching to get that done, working closely with the architect, who didn’t give them the proper scope to begin with. They had to regroup and work those things out.”

– Rex VanHoose, senior v.p./managing architect, Jacobsen Hardy Golf Course Design
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- Shawn Myles, GCS
Traditions Golf Club, College Station, TX

Cup-Cutter Profile from 4-1/2 Year Old Emerald Dwarf Green at Traditions Golf Club
looked at where the previous green was, and jammed against out of bounds and houses," he says. "I felt to take the golf hole off of the houses and into an area not being used at the time, and then utilize the lake to get a par-5 length out of it was the right thing to do.

"Not only did the previous hole play very short, the new hole is more interesting because the second shot plays over water to the second landing area and the green complex has bunkers adjacent to the water," Nicklaus adds. "Definitonwise, it's the best new hole out there."

TIMING IS EVERYTHING
McBride, who is responsible for design calls in the field for Nicklaus Design, was in charge of the cost implications and grow-in strategy. The course was set to host the women’s NCAA Championship in May 2006, so a drop-dead date set the tone for some of the key decisions.

"Everything had to start with that tournament and work backwards to make sure it would meet the standards for the event,” McBride says. "The project had to shut down sometime in mid-December 2005 for about six to eight weeks. That’s not unusual for Ohio, but with many change orders in the summer and fall, we needed all the quality days we could get. Because of this, much more Kentucky Bluegrass sodding was done in the rough areas rather than the original plan to seed the rough areas."

"Somewhere within the university a decision was made after construction had begun to host the Women’s NCAA Championship the following spring," Freund says. "Under most circumstances, this is just another day in golf course renovation work, but in this case, we were to have originally seeded all of the disturbed fairway and rough areas. But because of the decision to hold an NCAA tournament in the spring, seed-

ing had to be changed to sodding. Unfortunately, the university’s budget only allowed for half an acre of sod when 30-plus acres were needed and winter was just around the corner."

Despite the added labor costs and difficulty, since opening in the spring of 2006, the rejuvenated Scarlet Course has received rave reviews from amateurs and professionals alike.

"Only one man truly knows if we hit the mark or not, and he’s no longer around," Freund says of MacKenzie. "Regardless, we’re proud to have been given the opportunity to be involved in such an honorable restoration."

Brown couldn’t be happier with the results of the renovation.

"My players love it,” he says. “They feel it plays about two to three shots harder, and it’s much more difficult to get it up and down, especially out of the bunkers. It also has helped recruiting. This course teaches you how to play.”

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Going all in

Members take a risk after a hurricane and rebuild their course to revitalize their club By Michael Coleman

Just a few years ago, you could have bought swamp land in Pensacola, Fla., a few years ago - along with a golf course on it - for very little. But now Pensacola Country Club members wouldn’t sell their club if they were threatened by a hurricane. They’ve been there and survived that. In the aftermath of Hurricane Ivan in 2004, the club was faced with a decision: wade back into business by just rebuilding the smashed clubhouse or jump in with a major splash to rebuild the course, clubhouse and membership base.

“That’s when the leadership said, ‘We’ve got to do something,’” says Steve Dana, an architect with Jerry Pate Golf Design.

Club members, including U.S. Open champion Jerry Pate and his brother Scott, decided to take the risk and go all in. It’s paid off in terms of a revitalized club.

Pensacola Country Club lost 4,000 trees after Hurricane Ivan ripped through the area, leaving the course more open. Photos: Seaside Golf Development
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Off-site water runoff is contained in 11 on-property lakes and pumped right back on the golf course, solving a runoff issue. Photo: Seaside Golf Development

“The nicest thing is the membership loves it,” Dana says. “Everybody is excited to be here.”

The club, declining for years as the membership base aged, went from struggling to bustling as the reconstruction took off. From a low point of 275 members to 540 now, the club has grown with passionate, loyal believers. A number of doubtful members left the club after the hurricane rather than pay the $8,000 assessment to invest in its future. The assessment was added to insurance proceeds and bond revenue to pay for the improvements. The $3.8-million golf course redesign and reconstruction was part of an overall project. With a new clubhouse, which recently opened in January, and new maintenance facilities, the total cost was about $16 million.

HURRICANE DAMAGE
In September 2004, Hurricane Ivan ripped through Pensacola, destroying homes and businesses, tourist stops and infrastructure. The only thing it didn’t take out was the soggy, flat land the club was built on in 1902. Ivan tore out 4,000 trees, leaving just enough weakened longleaf pines behind to ignite a deadly pine beetle infestation in the spring of 2006.

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“To be honest, losing the trees was the best thing that ever happened,” Jerry Pate says, adding it was previously one big agronomic challenge because of a lack of air movement and sunlight. “When we lost the trees, we had all the sunlight we never had, and we had the wind.”

Member Terry Scruggs joined the board as liaison for the membership right before the hurricane hit. Ivan was brutal, wiping out many homes in the surrounding community, but the members were resilient.

“Having been totally decimated, having the membership living in trailers, and the fact membership hung together was amazing,” Scruggs says.

GETTING BACK ON TRACK
By early 2005, board members were working on budgets. By mid-year, Scott Pate’s company, Seaside Golf Development, was working on the design phase with Jerry Pate and Dana. Rebuilding began in October 2005. As the construction continued on time through 2006, the community came alive with interest.

“It was the buzz of the town,” says Scott Pate, president of Seaside.

When the club was wrestling with the challenge of rebuilding, many wondered if it could be done affordably yet with enough prestige to reinvigorate the membership and add value to the community.

“The best thing about the project is the story it tells for other clubs doing something like that,” Scott Pate says.

The course is now more open, with trees lining some fairways but with many more open spaces that facilitate a strategy affected by wind.

“The golf course plays different every day because of the wind,” Dana says.

Early on, Scott Pate knew he wanted to win the bid on the project. He bid aggressively because he sought to give something back to the course he grew up playing.

“I thought it would be something nice to leave my kids,” he says, noting his 6-year-old son is proud of his ‘dad’s golf course.’ “We took a lot smaller margin. Stuff that became legitimate change orders, we ended up just doing.”

Club members are happy with the reconstructed course.

“Jerry and Scott did a tremendous job, and, of course, Steve did, too,” Scruggs says. “The routing, everything has gotten rave reviews from the members.”

The fact Jerry Pate donated the design fee wasn’t the only boost to the project’s economics. The teams were able to work well together because of the number of projects they worked on in the past.

“The beauty about Scott is he knows exactly what I think because he’s worked with me,” Jerry Pate says.
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That synergy made construction efficient, and it didn’t hurt that both live nearby.

“He could shape it that day and get it confirmed and didn’t have to wait for another architect to sleep on it for two weeks,” Jerry Pate says.

WATER CONTROL
While the plan was coming together, one challenge threatened to drench the future of the club. The course didn’t drain well because it was too flat for water to runoff and it wouldn’t percolate through the soil.

“Before it was renovated, this course was just
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a swamp every day of the year," superintendent Jason Mills says. "A two-inch rain would close the course for days."

The Pensacola Country Club once sat on a swampy section of land surrounded by a community and highway that funneled every drop of rainwater runoff its way. All the highway runoff and all the subdivision runoff from the north ran through the club's property before the reconstruction.

"So every time it rained before this project, the golf course would turn into a lake because it was all elevation nine," Jerry Pate says. Jerry Pate knew his first lesson in architecture from Pete Dye in the 1970s was going to be crucial to the success of the project. Drainage is priority one, two and three, Dye told Pate then. Still, a course can be made to drain well, but the slopes can seem contrived if you're not careful.

"That's the challenge when you take a flat piece of property and you add movement to it," Scott Pate says. "You don't want it to look like it dropped out of the sky."

Federal regulators prohibited runoff from leaving the golf course, so a plausible solution seemed impossible. But not to Jerry Pate and his team.

"Life is a balancing act," he says. "You can take any negative and turn it into a positive. We like to look at life like the glass is half full, and we're gonna take a challenge, a negative, and turn it into a positive."

That philosophy helped the design/build team work toward a solution that helped the club and surrounding areas. The runoff had been traveling through the golf property and into Pensacola Bay adjacent to it. But by creating 11 lakes covering 10 surface acres and capturing the water, they solved the runoff issue.

"We were able to pick up all this off-site water that potentially could contaminate the bay," Jerry Pate says. "We contained it in these lakes and pumped it right back on the golf course. It percolates through the sand and filters itself. We collect it again through the groundwater, and it goes right back into the lake. It's a created cycle of reusing the same water."

With the runoff redirected to irrigate the course, the county's plan to spend $340,000 on new storm sewers in the community was scrapped.

"The golf course has become a blessing to the community and not just a liability because of the runoff," Jerry Pate says. "We used the lakes to strategically enhance the golf course. They also enhance the golf course aesthetically and enhance the community environmentally. Water control was our No. 1 challenge. It was our greatest liability in our construction and our greatest asset when we finished the job."

RE ROUTING
The reconstruction rerouted all but a few holes. The original course layout wasn't planned well because the driving range and the maintenance building were in the middle of the course, and semitrucks had to drive through the course for deliveries.

"We had to rescramble all these eggs to get the maintenance building where it should have been and the driving range and tennis located right," Dana says. "But we tried to respect the Donald Ross and Seth Raynor designs of the early 1900s."

The natural look of the course, which sits right on the bay, fits in with the surrounding terrain, from the native sandy areas created with white sand excavated from the site, to the native grasses. The Pates also replanted long-leaf pines and live oaks along with cabbage palms, Florida's state tree.

"Those were the trees that we came back and replanted to try to create the natural look this land would have had 200 years ago," Jerry Pate says.

The routing of the course took an interesting turn one day while Jerry Pate was at the club. A member asked Jerry to walk outside, and the two watched the final demolition of the old clubhouse near the bay. The member asked if a par-3 finishing hole would work. The team considered that, so the pair talked about the possibility of putting the green right where the old clubhouse was. While the design was complete, including a traditional finishing hole, Jerry Pate decided to approach the membership board with the idea. The forward-thinking board gave him the latitude to do whatever he wanted within the budget.

"To their credit, they delegated the authority to us," Jerry Pate says. "The board had enough confidence in us, and I was humbled by that and also elated."

While Scott and Jerry's father couldn't have foreseen the forces that would come together to level and rebuild the country club his grandchildren called home, his boys are glad father doesn't always know best.

"It was always our dream to renovate the golf course, and dad said, 'Son, it will never happen,'" Scott Pate says.

But it did. GC1

What the judges said

"They took a golf course that had deteriorated throughout the years and was totally destroyed by a hurricane and brought it back to life. They did many creative things on the job. They stripped a couple feet of bad soil and found sand they used to cap the entire property. They not only rebuilt, but they rerouted and relocated the clubhouse and worked extremely well with the community to complete a great project. The results look fantastic."


"The club was destroyed by a hurricane and lost more than 4,000 trees. They found support through local donations to regain the feel of the classic 100-year-old golf club. The club has made a turnaround and is in a better situation as a result, gaining 75 new members since the project finished."

- Jim Roney, director of golf courses and grounds, Saucon Valley Country Club in Bethlehem, Pa.

"They had serious drainage problems and a one- to two-foot organic layer they had to remove and bury. There were challenges with doing that and managing all of that material on sight. They had to do a series of dewatering and couldn't allow the water to discharge off site, so they had to be creative and work diligently to manage the dewatering process to be able to expand lakes and build new lakes. It was a project that had a lot of passion within the community as well as with the contractor, who was a member of the club."

- Rex VanHoose, senior v.p./managing architect, Jacobsen Hardy Golf Course Design
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A Cinderella story

An innovative development team transforms a degraded site into a USGA championship course

By Steve and Suz Trusty

It's truly a Cinderella story. A degraded sand quarry in University Place, Wash., was magically transformed into a multiuse public works project featuring a links-style golf course. And less than eight months after the facility opened, the USGA - like a fairy godmother - awarded Chambers Bay Golf Course the 2010 U.S. Amateur and 2015 U.S. Open Championships.

The course's development started with Pierce County's executive team, which was determined to bring its vision to reality. The 610-acre site, a former sand and gravel quarry, includes two miles of shoreline along the Puget Sound and borders the county's 45-acre property and water waste treatment plant. Initially, the site was considered for the plant's expansion. Public-use space was planned to be developed to complement the plant's operations to make use of its by-products - water and fertilizer.

The master planning process, which began in the mid-1990s, included reclamation of the degraded quarry.

"During the initial discussions, we determined a golf course would make sense in that location," says Tony Tipton, Chambers Bay Golf Course project manager for Pierce County Public Works and Utilities. "Through further analysis of the possibilities and input from the community, the concept was embraced as just one component of many. The bigger picture extended to open space parkland, access to beaches, public docks, boat launches and walking trails."

Feasibility studies, which began in the late 1990s, were put on hold following Sept. 11. In 2002, the process was revived and resulted in key determinations.

"Rather than try to compete directly with the existing, good-quality regional courses, we focused on a very high quality, world-class golfing facility," Tipton says. "We envisioned it would attract players regionally, nationally and..."
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from the Pacific Rim, and could provide the opportunity to attract large championship events to the area. By late 2003, we issued requests for proposals from golf course architects."

In late November 2003, members of the Robert Trent Jones II business development team visited the site and reviewed the RFP process. In December, four members of the design team, including president Bruce Charlton and project architect Jay Blasi, met with Pierce County officials for a formal tour of the site. They were captivated by the setting, with Puget Sound and the Olympic Mountains to the west and the Cascade Mountains to the east. They also were intrigued by the opportunity to turn a degraded site into an environmental plus.

"The county considered this project an economic development tool with the golf course as the anchor," Charlton says. "They wanted the golf course architects to be the lead, working as a team with the civil engineers and landscape architects to design not only the golf course but the parks, trails and all the other aspects of the project, too. We learned the mining site had been the major source for sand and gravel for golf course construction throughout the area for years. And the county had exercised the foresight to retain mining rights as part of their purchase agreement, allowing the greatest flexibility for material movement and reshaping."

The $16.7-million golf course project would be financed by selling general obligation tax-exempt bonds, so the funding was in place. The site plan was a complete redevelopment of about 250 acres from scratch while capturing the distinct components of the setting in an environmentally sensitive manner.

In January 2004, the Robert Trent Jones II design team became one of five firms interviewed with as many as 20 county representatives. The original RFP called for a 27-hole facility.

"That would have divided the space into a northern sector and a southern sector — one with 80-foot sand dunes and 200-foot elevations, and the other relatively flat," Blasi says. "We recommended integrating the elements within an 18-hole course. That change would elevate the quality of the course and allow more gallery space and a better flow of the spectators for major championship events."

The firm was awarded the project in the early spring of 2004.

**BECOMING INVOLVED**

As all participants in the project discovered as soon as they became involved, Tony Tipton and the Pierce County team had done an excellent job preparing and were highly organized and equipped to progress with timelines in place. Yet they were so dedicated to achieving their
The site plan was a complete redevelopment of about 250 acres while capturing the distinct components of the setting in an environmentally sensitive manner. Photos: Pierce County

vision, they encouraged input, weighing the implications and making decisions based on the best interests of the project. That vision became contagious as the full scope of the project unfolded throughout the year-long design process and the construction that followed.

Other players joined the team. Some were called in for their expertise demonstrated through their long-time working relationship with the architects. Some were familiar with the county and the site as identified through their input on the feasibility study. And some were selected through their response to county-issued RFPs.

“We responded to the national RFP from Chambers Bay,” says Jim Stegall, executive vice president of Northbrook, Ill.-based KemperSports, which manages the property. “Three key areas of our company’s expertise lead to our selection: our role in the development and maintenance of another links course; our understanding of the cost and environmental issues involved in working with public agencies; and our experience in presenting nationally ranked courses to the marketplace and the media.”

KemperSports joined the project in late 2004 and was involved in several onsite meetings in the predevelopment phase. One unique aspect of the Chambers Bay development process was the focus on environmental aspects to achieve Certified Silver Signature Sanctuary designation through Audobon International.

“As the management company, it’s ultimately our responsibility to sustain that status through the day-to-day operations of the facility,” Stegall says. “Thus our first full-time on-site appointment was David Wienecke, CGCS, a certified agronomist who joined the project in July 2006 when about 40 percent of the land was rough-graded.”

Also key to the development was Heritage Links, a division of Lexicon, a contractor specializing in many facets of the industrial construction sector.

“Lexicon’s size and resources give Heritage Links the financial strength to complete projects with the scope of Chambers Bay,” says Jon O’Donnell, division president. “We were awarded the contract in October of 2005 with opening scheduled for June of 2007. It was a tight timeframe to build the infrastructure of a public park with a golf course inside it.”

OVERCOMING CHALLENGES

A true links-style design was chosen to combine the elements of the natural sand, the proximity of the Puget Sound, and the northern Pacific exposure and climate reminiscent of Scotland and Ireland. Once it was decided to make it a walking-only course, other design elements flowed more freely.

Without the disruption of cart paths, the grand scale of the property could be mirrored in the dimensions of the course, with a 70-foot-tall sand dune covering seven acres, 115-yard-wide fairways and 20-yard-long tees. It gave the architects the liberty to create a more dramatic look, designing elevation changes and bunkers and greens with contours and character, and to focus on playability and how the ground factors impact ball roll. Because of no cart-traffic wear, the team selected fescues as the best turf type to provide the desired fast, firm surface.

On-site discovery brought adaptations to the design that were discussed and adopted through the collaborative process.

“When 80 acres of scrub vegetation were cleared to open a wind corridor and create land forms, we discovered an even better site for the sixth green and were able to adjust the design of the seventh tees to accommodate it,” Blasi says. “We opted to save one lone Douglas Fir, the only tree on the course.

“As sand movement began, we kept working with the expert shapers and Heritage Links on developing the 13th hole,” he adds. “Once the process clicked, the sculpting of the other dunes, bunkering and sandy play areas moved forward well. That revealed a little pocket in the dune on the 5th hole that was a great spot for a green. Again, the collaborative process led to adaptation. We added it as a second green, making two greens 150 yards apart.”

Heritage Links moved 1.5 million cubic yards of sand from the old sand and gravel pit to create contours, and about 500,000 yards of the sand was stockpiled, then screened on-site.

“It provided the perfect root zone for grow-in and insured there’d be no gravel interference for the golfers,” O’Donnell says. “A 12-inch cap of this sand was placed following the completion of the earthwork and shaping. In effect, the two expert shapers, Doug Ingram and Ed Tano, did the contouring multiple times to achieve the precise surface we all wanted.”
The earthmoving was accomplished in the most environmentally responsible and bio-rational way, Wienecke says. Additional drainage systems were installed that lead to sediment retaining ponds, bioswales and filtration basins for natural filtration by the plants and soils. Nothing flows off the site or reaches the ground water. In any new construction, the placed materials must be compacted to avoid settling.

The turfgrass is about 5 percent (by weight) Colonial bentgrass in addition to Chewings Fescue, Creeping Red Fescue, Hard Fescue and Sheep's Fescue, depending on the specific area of the course. Management practices are much different for the fescues, Wienecke says.

“They’re very drought tolerant, going from three to 10 days this summer without supplemental irrigation,” he says. “We only use two mowing heights, 0.25 of an inch on the greens and 0.5 of an inch on the other playable turf. The only way you can tell there’s a green from a distance is by the flagstick.

“We’ve adjusted the fertility program, providing a steady supply of a small amount of nutrients year round, spoon-feeding at rates of 0.1 to 0.2 of a pound of nitrogen per application,” he adds. “This helps the fescues tolerate the low mowing heights we subject them to. We’re also adjusting to the shade effect of the tall dunes on some sections of the turf.”

Heritage Links hydrosedeed about 200 acres – the greens, tees, fairways and roughs – with these grasses. Record-breaking weather conditions added to the challenge, with the driest three months on record occurring during the seeding process. The last planting was completed in mid-October as scheduled. The rains hit in November and caused massive flooding across areas of the state. Heritage Links had to rebuild some sections of the course that washed out and regrass in March to meet the June opening.

PUBLIC SPACE
A walking trail, originally the concept of Pierce County executive John Ladenburg, first opened several years before the Chambers Bay development. Thousands of people had viewed the site from the trail, so community interest was extremely high when it was integrated into the project. The expanded trail is a 3.1-mile, 12-foot-wide, paved surface that retains the panoramic vistas viewed from 250 feet above the course, then extends down through it. The trail is designed so users can experience the site, but not interfere with the golfers or be exposed to any hazards of play.

There’s also a railroad track along the 16th and 17th holes, bordering the beach area of the Puget Sound, which has been in use for almost 90 years. About 50 trains travel the tracks each day.

“At the start of our involvement, we’d applied for permits to do the necessary work within their right of way,” O’Donnell says. “The area is now fenced, so there’s no public access from the golf course, but the view remains.”

“My fervent hope is that for the next 50 years, Chambers Bay will be as successful as it’s been in its first five years, and that the golf course will always be a part of the Puget Sound region’s fabric,” he says.

What the judges said

“Chambers Bay was a very complex project as far as the scope and was much more than a normal golf course. According to Bruce Charlton, Heritage Links did a fantastic job of performing and getting the job done right. The golf course had high regards and high accolades.”
– Chris Wilczyński, principal, Arthur Hills/Steve Forrest and Associates

“This was just an amazing accomplishment. The site was basically an old gravel pit, so there were all kinds of issues to deal with right on the shore of the Puget Sound. They made very creative use on of sight materials, and they created more than golf with a jogging area around the property. They met all of the challenges of drainage and dealing with run off and so forth, and the result is just spectacular.”

“This project set out to be a tournament worthy venue for a major championship, which gives it a lot of challenges from the beginning. They had a railroad that was on sight and an easement to work around. They had to deal with utility extensions and things that aren’t normal to a general golf course construction project. They stayed within a public work budget. The site makes a big difference, but you could tell they had to create all of this golf look on the project, and that’s not an easy task to do. They were able to work out all of the technical aspects as well as the artistic aspects and came out with what already has been noted as one of the top projects for public golf.”
– Rex VanHoose, senior v.p./managing architect, Jacobsen Hardy Golf Course Design

AT A GLANCE

Chambers Bay Golf Course
Web site: www.chambersbaygolf.com
Location: University Place, Wash.
Type of project: New construction
Cost: $16.7 million
Project started: October 2005
Course opened: June 2007
Architectural firm: Robert Trent Jones II
Builder: Heritage Links
Superintendent: David Wienecke, CGCS
Owner: Pierce County, Wash.

Public park space at both ends of course will open soon, and additional projects are in development.

“The truly collaborative efforts to capture the vision by all those involved in the development of Chambers Bay have united our community in a unique, shared celebration of our environment and the dramatic, spectacular vistas it provides,” Tipton says.

Golf course architect Robert Trent Jones Jr. has been involved in the design of more than 250 courses in his 40-year career and says only a few have the ability to stretch you.

“Chambers Bay was one of those projects,” he says. “Designwise, communitywise and through the united efforts of all those involved, we captured the opportunities and didn’t let any compromises interfere with the ideal for this extraordinary site. The course reflects my personal philosophy of what a golf course should be. It’s public, not private, community based and funded, with preservation of the environment, yet full access for the community. And it’s not impacted by other issues that are extraneous to the game of golf, such as houses and streets. Never have all my critics been unanimously in favor of anything I’ve done before this.”
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SOIL MANAGEMENT

Having analyses conducted regularly can mean the difference between a green course and one with dying turf.

Mark Flock, a laboratory manager and agronomist for Brookside Laboratories in New Knoxville, Ohio, attests to the importance of testing soils and nutrients. Brookside is one of the seven labs in America accredited by the U.S. Golf Association that test construction materials for fairways, greens and tees (for those courses built in accordance with USGA specification). They test grounds for about 3,000 golf courses through 260 consultants and 36 universities throughout the world. Brookside also tests soils for municipalities, farmers, athletic facilities and others growing grass.

“We do soil testing for fertility, plant testing, compost testing, water and drainage testing,” Flock says. “Through consultants, we keep grass healthy. It’s really important to know what you have. Testing helps do that.”

The standard is to test tees, greens and fairways – fairways can be split depending on slope and condition.

“We analyze for pH, magnesium, phosphorous, salt and other things that give you a really good picture of what is going on,” Flock says. “In dry periods, it helps you head off any issues before they happen.”

Brookside also can test for fungicides, insecticides or herbicides to see if they’re in proper balance. The lab supplies packages containing screen tests that show what’s applied to turf isn’t running off into the streams on or near the golf course.

Soil tests are based on the regions of the world from which they originate.

“It comes down to the type of grass and weather,” Flock says. “There are lots of salt issues in the South and West. Water dictates issues. Drier regions are being forced to use effluent water, and water dictates chemical status of soil. You have to stay on top of it. Having someone taking soil, water and turf samples to see if the grass is healthy, those are three you can’t do without. You have to know what’s in everything after that, such as adding compost or manure. These are things consultants know. They won’t use
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Soil tests can reveal how many nutrients can be absorbed by the plant. And aside from existing conditions, organic material matters when building a green (below). It’s important to make sure you get what you paid for and to have a neutral pH.

Materials that cause issues. It’s also important to have a consultant who knows the area in which he’s working.

“You don’t want a consultant from Maine in Southern California,” he says. “You have to understand fertilizers in the area and what the superintendents there have to work with.”

**A HEALTHY BALANCE**

Soil tests generally take 48 hours or less, so superintendents can receive feedback quickly. That’s imperative for Gill Stiles, superintendent at Santa Rosa (Calif.) Golf and Country Club.

“The analysis tells us the makeup of the soil,” Stiles says. “Soil nutrient testing is done two or three times a year. That way, we get a take on nutrient availability, how much nutrients are in the soil and the pH.”

Stiles pays particularly close attention to cation exchange capacity.

“Cation exchange capacity tells us how much of these nutrients can be absorbed by the plant,” he says.

The nutrient absorption capacity of the turfgrass is another consideration.

“You have to have the nutrients in the soil and in the proper pH range for the plant to take up the nutrients, and the cation exchange capacity monitors the soil to make sure you can do that,” Stiles says. “All those things, if balanced properly, will make a healthy plant.”

Stiles tests the same six greens each time to establish a baseline. That way, he can gauge the effectiveness of his nutrient program.

“We tend to be low on calcium, so we check the same area to see if our program is improving the situation or not,” he says. “Our ultimate goal is to have the proper mixture.”

There are times when Stiles receives analysis results and applies straight calcium on the greens to keep things balanced.

“We have a nutrient program we put on the course for the year, and we derive it from the soil tests,” he says. “We adjust it and find products that meet those needs.”

Stiles uses analysis to pinpoint his program.

“You can throw all kinds of stuff at the soil, but if things are out of whack, the plant can’t take up nutrients,” he says, “Just throwing fertilizer at a problem doesn’t always fix it. It depends on what you need. Some nutrients are mobile in the soil and have to be replaced regularly. Others aren’t so mobile and are available longer.”

Stiles also must align his micronutrients and macronutrients properly. Nitrogen, phosphorous and potassium—the macros—need to be present. Micronutrients such as iron, copper, zinc, and many others must be present as well.

“It’s very much a balancing act,” he says.

For Stiles, the analysis isn’t an expensive line item in his budget.

“It depends on how extensive you want it to be,” he says. “Several tests can be done, and even...
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ery lab has its own price for its various tests."

IT'S A PH THING
Mark Lilleberg, superintendent at Eaglemont Golf Course in Mount Vernon, Wash., doesn't test soil as often as Stiles. Instead, he tests every other year.

“It depends on when they want to give it to me free,” he says jokingly. “That’s usually every other year.”

Lilleberg tests the same six greens, two fairways and several tees and averages the readings.

“I can’t afford to do the whole deal,” he says. “Usually salesmen, the main suppliers of my fertilizer - micronutrients and macronutrients - do it for me. There are two labs, and I’ve used the one here in the Northwest.”

But Lilleberg isn’t suggesting analysis is unimportant.

“I’ve never had a huge problem, so I’m not really troubleshooting,” he says. “But I like to get a rough idea of my copper, iron and calcium levels on the greens, in coordination with the pH. Mainly, it’s a pH thing, but then you can look at your other nutrients and say, ‘How can I fix that?’”

It usually takes Lilleberg one growing season to make any considerable changes.

“You can’t change your pH overnight and expect to have great things happen,” he says.

ORGANIC MATERIAL MATTERS
Aside from using soil analysis for maintaining quality turfgrass, it’s also imperative to know the quality of the materials used when building a course, says Steve Christian, national account manager for East Grand Forks, Minn.-based Dakota Analytical, one of the seven USGA accredited labs.

“For example, if a green is built to spec according to USGA recommendations and it’s topdressed with straight sand for a while, the green’s characteristics and needs change.

“Organic material matters - it’s important to have a neutral pH,” Christian says. “It’s buyer beware. You need to make sure you’re getting the quality materials that you want in your course for the dollars you paid.”

Dakota Analytical can test for almost anything a client needs.

“We can look at core samples; do a physical workup; check organic content in the top, middle and bottom of the root zone; and do a full nutrient analysis,” Christian says. “Then you can tell them if they’re using the wrong sand or not.

For organic content in greens, you should have between 4 and 6 percent in the top of the root zone, and you should see how thick the thatch is. We help solve those problems.”

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Some grasses need fine sand, but fine sand is generally a problem, says Steve Christian of Dakota Analytical. Photo: Dakota Analytical

Most of the time, the problem Christian sees with samples is that too fine a grain of topdressing is used.

"Some grasses need fine sand, but in general that's a problem," he says. "You have to know what they're growing things on. It's very important to know the quality of the organic matter you're using in topdressing. With drought conditions throughout the country, guys keep pouring on sand, and there's no soil structure left. They put more water and fertilizer on. Good organics can help you hold water, a controlled hold, so now you're building a soil structure in the root zone." GCI
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Expectations, weather and turf health determine the amount of chemical inputs

Golfer expectations and the weather. Arguably more than anything else, these two factors determine how superintendents prepare and maintain golf courses. And, depending on where you live, this has a great affect on the amount of chemicals used – fungicides, plant growth regulators and fertilizer, to name a few.

Regardless if the course is in the Pacific Northwest or along the Eastern Seaboard, superintendents agree the key to achieving the best possible conditions is establishing and maintaining healthy turf. Their methods might differ, but the goal is the same.

The use of chemicals such as fungicides is entirely based on the weather, says Darin Bevard, a U.S. Golf Association senior agronomist for the Mid-Atlantic region.

“In 2005, our region experienced a hot, wet summer,” Bevard says. “Most superinten-
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dents exceeded their chemical budgets. Last year was better, but costs increased because of price increases for these products. However, cost aside, superintendents generally will use as much fungicide as it takes to meet golfer expectations for course conditions.”

**INCREASED FERTILIZATION**

Kris Givens remembers when the approach to fertility programs for greens was “lean and mean” several years ago. Not so anymore for the superintendent of Whitford Country Club in Exton, Pa.

“Anthracnose is a bad disease in our area, and we have to control it,” Givens says. “So part of our program is fertilizing at a higher rate than we used in 2000 and 2001.”

The 18-hole private course has bentgrass/Poa annuaa greens and tees and bentgrass fairways. Givens uses EarthWorks 5-4-5 natural organic fertilizer. In the spring, early summer and fall, he applies one-half to one pound per 1,000 square feet and spoon-feeds at a rate of one-tenth of a pound weekly in the summer to maintain color and avoid flushes of growth.

To maintain healthy turf, Givens’ fungicide program includes monthly applications of a Signature/Daconil mix or a Signature/26GT mix from March through November. In the summer, it can get hot and humid, so Givens usually sprays something every two weeks to help him manage disease. Golfers don’t even notice, he says.

“We rotate Banner Maxx and Rubigan among other SI fungicides and apply Primo plant growth regulator every two weeks to maintain green speed,” he says. “We have a good fertilizer program with a strong rotation, and we’re hitting everything from dollar spot to summer patch to pythium. We really haven’t had any issues. In the summer, we have to pay attention and be smart. If the weather changes, we might have to raise the height of cut on the greens and back off on double-cutting.”

**CHANGE IN SCENERY**

When Chris Kirchner left Highlands Falls (N.C.) Country Club to become superintendent of Heritage Hill Golf Club in Shephersville, Ky., he experienced more than a geographical change. Nestled in the Great Smoky Mountains, the Highlands Falls course is at an elevation of more than

At Heritage Hill Golf Club, Chris Kirchner rotates 10 to 15 different fungicides on greens to prevent tolerance build-up. Photo: David Wolff
At Glendale Country Club, Steve Kealy, CGCS, has increased the amount of nitrogen applied to the course to keep turf healthy. Photo: David Wolff

4,000 feet. In the summer, daytime highs are in the low 80s with little humidity. In Shepherdsville, summers are hot and humid.

"I'm using more fungicides because disease pressure seems to be higher in my new area," Kirchner says.

Heritage Hill, which opened in August 2007, features A-4 bentgrass greens and collars. Tees and fairways are zoysiagrass, the irrigated rough is bluegrass, and the remainder is fescue. Fungicides are applied on greens and fairways regularly and on tees when there's an outbreak of zoysia patch.

"I'll spot spray when necessary," Kirchner says. "Most of my spraying during the grow-in was with herbicides. I rotate fungicides quite a bit, using 10 to 15 different products on greens so we don't build up a tolerance. The new products seem to last longer, even though they have less active ingredient. That's a good thing for the environment, but bad for budget purposes. It seems like I have to buy more, and fungicides are very expensive products."

**REVERSE TRENDS**

Larry Gilhuly, director for the Northwest region of the USGA Green Section, has seen expectations for course conditions climb off the chart since he joined the Green Section in 1984.

"It's night and day, but the good news is superintendents are growing healthier grass today," Gilhuly says. "The Stimpmeter led to a trend of lowering heights of cut on greens and applying less fertilizer. This caused problems with anthracnose and moss. Now we've got fertilizer levels back up and are using other tools, such as greens rollers."

In the Pacific Northwest, low humidity generally reduces disease pressure. The biggest issues are pink snow mold and anthracnose, but that doesn't mean superintendents don't use fungicides.

"The use of fungicides in our region hasn't necessarily increased," Gilhuly says. "Rates are less because products are more effective."

Gilhuly advocates target rolling for smooth greens with a desirable speed and healthy turf. (See sidebar on page 84.)

"One answer to the green speed issue consists of more rolling and rais-
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ing the height of cut,” he says. “However, rolling more than three times a week causes problems with turf wear.”

The concept of target rolling comes into play to provide a common sense approach to this issue, Gilhuly says. Golfers, generally, are poor judges of green speed, yet they desire smooth greens and judge green speed around the hole, so why not simply roll 20 to 30 feet around the hole, rather than the entire green? For example, if holes are changed six times weekly, and the greens are of adequate size, green rolling in a target manner could be completed six times weekly, which would be equivalent to rolling two or three times because the entire green isn’t being rolled every time, Gilhuly says.

“Also, putting green rollers generally increase speed from six to 10 inches, depending on the type of roller used,” he says. “Because players have a difficult time determining this magnitude of difference, and rollers make greens smoother, the golfers benefit without placing the turf under more stress.”

BALANCED FERTILITY PROGRAM

Growing healthy turf requires a balanced fertility program, says Steve Kealy, CGCS, of Glendale Country Club in Bellevue, Wash.

“We’ve got fertilization back up to a comfortable level,” Kealy says. “Seven to eight years ago we were starving the greens, applying only 2.5 pounds of nitrogen because that was the trend. Sure, the greens were fast, but we were getting every kind of weird, funky disease. The turf was stressed and half-sick. Now we’ve got nitrogen levels back up to keep the turf healthy. We apply five to 5.5 pounds, and combined with other products and practices. We’re far

Try sectional rolling for consistent green speed

Mark Cupit, CGCS, of Ironwood Country Club in Palm Desert, Calif., and Larry Gilhuly, director for the Northwest region of the USGA Green Section, have consulted about the process of sectional, or target, rolling throughout the years. Cupit explains why he uses this method and how it’s put into practice:

“Back in the good old days, I remember the first time I dropped my green heights down to three-sixteenths of an inch,” he says. “It was pretty scary. Some of you are old enough to remember the speed revolution. We used to scalp them down, withhold fertilizer and water and bring the greens right to the brink of death. Now, with the help of new equipment technology, superintendents have the ability to maintain what every golfer and turf manager wants: smooth, fast putting surfaces without starving the turf and without the damage caused from heavy rollers and ultralow mow heights.”

Cupit overseeds the club’s Tifdwarf greens each fall with Poa trivialis. After the initial grow-in phase, he uses sectional rolling to achieve the best possible putting surface for club members.

“Using one of my lightweight rollers, I start rolling my greens every day, but not the entire green, only the third of the green where the pin will be,” he says. “Our course sets pin locations seven times a week using six front, six middle and six back cup set placements.”

When initiating this program, it takes about two weeks to normalize speed across the entire putting surface, Cupit says. The third of the green that was rolled Monday will only lose a couple inches of speed before it gets rolled again. Even the best players at the club can’t recognize the difference in speed.

“The benefits could be seen as enabling the turf manager to have faster putting surfaces without the ultralow mow heights,” he says. “I like to get our greens around 11 feet for the snowbird season. My greens are mown at a bench setting of 0.115 inch with a John Deere 180 walk mower, rolled daily and spiked with a PlanetAir every three weeks. Along with a good fertility and Primo program, I’ll continue this for the entire season. For special events when speeds need to be really fast I’ll add double cutting for several days before the event and maybe some sand topdressing.”
less concerned with green speed and excessive growth. We use Primo plant growth regulator for consistent green speed, lightly topdress for a smooth surface and verticut weekly. We’ve got healthy grass with no growth spurts. We’re actually using less fungicide.”

STICK TO THE BASICS

The most important thing superintendents can do to achieve healthy turf is to be flexible and adapt their fertility programs when necessary, says Cutler Robinson, CGCS, of Bayville Golf Club in Virginia Beach, Va.

“Superintendents must be disciplined in following through with their programs,” Robinson says. “They can’t let every isolated comment or complaint dictate what they do. We have a good base model for what works in an average year on our course. We analyze soil samples two or three times a year and monitor the soil regularly. We also test the pH of our water. We’ll change nutrition rates if the situation demands it. For example, if we get a leaching rain, we’ll come back sooner with a foliar fertilizer application.”

Ultimately, the goal is to marry turf health and playability, Robinson says.

“If greens are overfertilized, they won’t putt well, and thatch will start to build up,” he says “Low heights of cut reduce the root system, and the turf can’t store carbohydrates as efficiently. In this situation, we use frequent, light foliar applications of a balanced fertilizer to maximize root growth and carbohydrate reserves. That’s why superintendents must be disciplined, not reactionary, because we can’t create carbohydrate reserves in summer. We’re a high-end club, and our fertility program is all about sticking to the basics.”

Cupit strongly recommend reading “The Superintendent’s Guide to Controlling Putting Green Speed” by Thomas A. Nikolai, Ph.D.

“I’ve been doing this routine for several years now and have found not only very smooth putting surfaces, but very consistent day-in-and-day-out green speeds,” he says. “This is what every golfer wants. The best thing for me is having the speed without sacrificing the health of the turf.”

Cupit strongly recommend reading “The Superintendent’s Guide to Controlling Putting Green Speed” by Thomas A. Nikolai, Ph.D.
How they measure up

Lab study analyzes physical properties of bunker sand

Most golf hole architectural designs incorporate sand bunkers to add dramatic visual contrast and enhance aesthetic beauty while adding challenge and strategy for golfers (1). Bunkers are considered hazards, yet, for many of the courses in the United States, the demand for manicured perfection throughout the entire golf course has resulted in unrealistic player expectations for perfect lies, even in areas defined as hazards. For golf course managers, this demand results in the pursuit of consistently firm, smooth bunker surfaces.

At many golf facilities, the amount of the maintenance resources spent on bunker management rivals what’s spent caring for putting greens. Where sand is installed on steep slopes, regular erosion repair costs can be substantial, and are compounded when improper, highly erodable bunker sands are selected.

Numerous sand-sized materials are available commercially and marketed for use in golf course sand bunkers. Often a particular sand might be chosen based on subjective characteristics such as aesthetic appearance (many golf course architects prefer bright white sands) or subjective functional characteristics such as how a particular golfer perceives the sand’s playability. Generally, firm sand is preferred because it allows a golf ball to sit on top of the sand surface, resulting in easier play from the hazard.

Sometimes the long-term consequences of these decisions based on subjective criteria

**TABLE 1. Particle size distribution and calculated physical properties of commercially available sand materials from various regions in the United States**

<table>
<thead>
<tr>
<th>Sand</th>
<th>Particle size distribution</th>
<th>Calculated property</th>
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<tr>
<td>White Bunker Sand</td>
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</table>

† Geometric mean particle diameter (GMD) = calculated from the sand particle size distribution.
‡ Cu (Coefficient of uniformity) = where D60/D10; acceptable value = 2 to 4, higher value = less uniformity, optimum value = 2 to 3, a value < 2 less likely to pack tightly.
§ Gl (Gradation index) = where D90/D10; lower values indicate a higher potential for surface instability, acceptable range 3 to 6, preferred range 4 to 5.
Searching For A Cost-Effective Solution To Control Dollar Spot?

Problem:
Dollar Spot

Dollar Spot n. – The fungus Sclerotinia homoeocarpa ("Dollar Spot") commonly attacks low-cut creeping bentgrass. It thrives in damp clippings or moist, cool soil.

Symptoms:
Fast-spreading Dollar Spot begins as small discolorations. Grass blades bleach, forming dead patches on turfgrass surfaces. Spreading infection causes ugly, tan-colored spots 2-3" wide (silver dollar size).

1. Many small, round dead patches
2. Hourglass-shaped lesions
3. Cobwebby white mold
4. Damaged putting greens

Solution:
Kestrel®MEX

Kestrel®MEX is a broad spectrum fungicide ideally suited for control of Dollar Spot and more than 20 other troublesome turf diseases. Based on a unique, value-added formulation of the proven ingredient propiconazole, Kestrel MEX is one of Phoenix's new NexGen products, a line of enhanced, post-patent pesticides that comprises the highest-quality, top-performing formulations. Kestrel MEX can be tank mixed with a variety of other fungicides and insecticides and is also available in a BATpak®, Phoenix's convenient, returnable packaging concept.
such as color might not be realized immediately. A sand that's the desired color but is too coarse or has a predominance of round particles might necessitate additional labor to maintain playability. From a golf course manager's perspective, an appropriate sand for bunkers would be one that maintains firmness, drains quickly, doesn't erode from slopes easily after moderate rainfall or irrigation, and is sized similar to those used for sand-based root zones (8). The latter is so that when it's splashed onto the putting surface it does minimal damage to the mowing equipment when picked up during mowing and doesn't impact the composition of the sand-based root zone negatively over time.

Currently, there are no clear specifications for golf course bunker sands, and the information that exists serves primarily as a guideline, which is based mostly on sand particle size distribution and a measurement of surface firmness. Generally, it’s suggested bunker sands should have a large majority of the particles in the 0.25 to 1.0 mm range (7). In terms of sand mineralogy, silica sand is often preferred because silica resists weathering and retains its original shape longer. Other materials also might be suitable, however, limestone sands are more prone to weathering and might result in significant fine particles over time, which can affect drainage and playability.

In terms of sand particle size distribution, research documents particle size distribution greatly influences sand strength and, specifically, the quantity and ratio of fine textured particles can have a strong influence on strength (2, 3). These authors suggest that when evaluating a particle size distribution based on its coefficient of uniformity (Cu), higher Cu values for sands are preferred and that the Cu could be adjusted by adding a small percentage of finer textured particles such as native sandy-loam soil. Increasing the Cu value from 1.8 to 3.0 resulted in the

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<table>
<thead>
<tr>
<th>Sand</th>
<th>Sphericity</th>
<th>Angularity</th>
<th>GMD $\dagger$</th>
<th>Cu $\S$</th>
<th>Gl $|$</th>
<th>Angle of repose</th>
<th>Penetrometer</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>mm</td>
<td>degrees</td>
<td>kg cm$^2$</td>
<td></td>
<td></td>
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<td>3.53</td>
<td>2.5</td>
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<td>Subrounded</td>
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<td>1.61</td>
<td>2.57</td>
<td>21.8</td>
<td>0.10</td>
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<td>3.83</td>
<td>34.4</td>
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$\dagger$ Geometric mean particle diameter (GMD) = calculated from the sand particle size distribution.

$\S$ Cu (Coefficient of uniformity) = where D50/D10; "acceptable value" = 2 to 4, higher value = less uniformity, optimum value = 2 to 3, a value < 2 less likely to pack tightly.

$\|$ Gl (Gradation index) = where D90/D10; lower values indicate a higher potential for surface instability, acceptable range 3 to 6, preferred range 4 to 5.
Research

doubling of the sand’s bearing capacity or a much firmer sand root zone surface (2, 3). For bunker sands that need to infiltrate and drain rapidly, the addition of significant fines would be risky because it might result in excess water retention and make the sand more prone to erosion when installed on slopes.

In addition to particle size distribution, sand particle shape has a strong influence on playing quality and maintenance. Particle shape is classified by examining the relative sharpness of particle edges and the overall particle shape, referred to as angularity and sphericity, or roundness. These characteristics can have a strong influence on surface firmness and resistance to erosion. For example, a low-sphericity, very angular sand generally has a high surface strength and would likely stay in place on bunker faces. By contrast, a high-sphericity, rounded sand is more likely to be soft and more prone to erosion during regular maintenance or following irrigation and rainfall events.

Complicating the bunker sand selection process are subjective qualitative characteristics, such as color or immediate cost, which often strongly influence the final decision with little thought being placed on the possible implications regarding long-term maintenance needs or costs.

The objectives of this laboratory study were to (1) characterize the physical properties of a wide variety of commercially available sand sized materials that are being used in golf course sand bunkers and (2) determine if certain physical properties can be used as predictors for sand surface hardness or resistance to golf ball penetration as measured using a modified pocket penetrometer.

MATERIALS AND METHODS

Twenty-six sand materials were collected from a variety of sand suppliers throughout the United States (Table 1). About one gallon of each sample was obtained, air-dried and mixed well before analysis. Subsamples (60 grams) from the center of each sand were removed and oven-dried to determine particle size distribution using the pipet method and dry sieving on three replicate samples. The remaining sand was used to determine firmness as measured by resistance to penetration with a modified pocket penetrometer.

Each sample was placed in a 15-cm-diameter round plastic vessel and compacted to a 10-cm depth. The modified penetrometer was inserted using even and steady pressure until one-half the depth of a USGA-approved golf ball was buried. The value was recorded, and the device reset. This procedure was replicated five times, the sand surface was resmoothed, and the test vessel was repacked to the desired depth between measurements.

To determine angle of repose, 20-gram samples of oven-dried sand were placed in a 26-mm-diameter plastic centrifuge tube with a
was placed flush in the center of the measurement 5-mm-diameter opening at the bottom that was mounted perpendicular to a standard microscope stage. On the microscope stage, a circular pad marked with a measurement scale (marked in mm) radiated out from a central point. The tube was placed in the center of the measurement scale, and the sand was installed. The tube was raised slowly and steadily until all sand exited. The distance from the center of the scale to the edge of the resultant sand cone was recorded at eight locations and the height of the sand cone measured using calipers to the nearest millimeter. This process was repeated three times, and the average radius and cone height were used to calculate angle of repose. Additionally, each sand was visually evaluated for overall particle shape and color using angularity/sphericity and Munsell color charts (data not presented), respectively.

The particle size distribution of each sand was used to calculate geometric mean diameter, coefficient of uniformity and gradation index (4, 5, 6). In addition to the bunker sand materials, three materials were included for general comparison. These standards included a medium-coarse putting green root zone sand, a medium-fine topdressing sand and rounded laboratory glass beads.

WHAT WE DISCOVERED

In the laboratory study, we evaluated a variety of commercially available sand products from several regions of the United States. The sands included naturally mined sands, screened and washed sands, as well as some manufactured sands generated by a rock-crushing process. In addition to the bunker sand products, three sand-sized materials were included for general comparison. These standards included a putting green root zone sand, a fine sand topdressing and laboratory glass beads. All sands were evaluated for visual characteristics such as particle shape and color, but also for their general physical properties (Table 1).

As expected, sand color varied widely ranging from white to cream, tan and brown (data not presented). Of all selection characteristics, color appears to be the most subjective criteria and should be one of the last factors considered when selecting a sand for bunker use.

Probably one of the more routine measurements conducted on sands is that of determining the sand's particle size distribution. Once the particle size distribution is determined, this data can sometimes be used to infer physical performance characteristics. Three properties – geometric mean diameter, the coefficient of uniformity and gradation index – were calculated from the particle size distribution. As expected, there was a wide range in particle size distribution which resulted in quite a bit of variation in the associated calculated values.

For GMD, which is one method for distilling a PSD down into a single value and provides an overall sense for the relative coarseness or fineness of the sand, values ranged from 0.35 to 0.95 mm (Table 1). Although this is a convenient method for reducing a PSD down into a single manageable value, it can also be somewhat misleading. For example, the laboratory glass beads had a very narrow PSD with 100 percent of the particles in the 0.5 and 0.25 mm size classes and a GMD of 0.71. This value was identical to four other sand materials with dramatically different PSDs.

Based on the very narrow PSD of the glass beads, it would be predicted this material would be rather unstable or soft, simply because of the lack of bigger or smaller size classes necessary to fill in voids around the existing two size classes and increase surface stability. Generally, however, for a bunker sand, a minimum value greater than 0.5 mm would be desirable because below this value the sand may drain too slowly when installed in low-lying bunker bottoms.

For the coefficient of uniformity, which is a numerical expression of how uniform the particle sizes are and another value that could be used to predict how likely sand particles are to pack, the values ranged from 1.47 to 5.28. Some references suggest acceptable Cu values are between 2 and 4 (5). Generally, a higher value suggests less uniformity and a greater range of particle sizes. Cu values below 2 suggest a tendency for the particles to pack less tightly. Of the sands evaluated, 19 of the 26 sands fell within the acceptable range.

A similarly calculated property is the gradation index, for which values ranged from 1.91 to 8.89. For GI values, lower values indicate a higher potential for surface instability with a suggested acceptable range of 3 to 6 and a preferred range of 4 to 5. For these sands, 11 of the 26 fell in the acceptable range, while only three were in the preferred range and included Green Plus, Pro White bunker sand, and Sidley #1600.

In addition to analysis of data associated with the PSD, visual inspection of the sand particles resulted in a substantial variation. For sphericity or roundness, the sands ranged from low to
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high, with most sands possessing a medium sphericity. The laboratory glass beads were highly spherical. For angularity, the sands ranged from subangular to very angular, with the majority of sands possessing a subangular shape. Generally, a more angular and less rounded sand has a higher tendency to pack tightly and result in a desirable firm sand characteristic.

One additional measurement that might help laboratories predict sand firmness is the angle of repose (Table 2). This measurement, which is a calculation expressed as degrees, is derived from measuring the mean diameter of the base and apex height of a dry sand cone. Coarser textured, more angular sands with wider PSDs are more likely to stack higher, resulting in a narrower base and taller cone apex and ultimately a greater angle of repose. For the sands evaluated in this study, the angle of repose values ranged from 21.8 to 35.4 degrees. The lowest values occurred for the rounded laboratory glass beads and the highest value was associated with Tour Grade 50/50. Most sands had an angle of repose between 31 and 32 degrees.

PHYSICAL PROPERTIES AND FIRMNESS
Besides the highly subjective characteristic color, one of the most important bunker sand properties is firmness manifested as resistance to golf ball penetration or the sand’s ability to avoid producing a buried golf ball lie. The values for the modified pocket penetrometer ranged from 0.1 to 3.32 kg cm$^{-2}$, with higher values being more desirable (Table 2). When interpreting this data, the scale most often used is presented in Table 3. Of the sands evaluated, only five sands had a penetrometer value greater than 2.0 kg cm$^{-2}$, while the majority of the sands were between 1.2 and 2.0 kg cm$^{-2}$. As expected, the rounded laboratory glass beads with a narrow particle size distribution produced a penetrometer value of 0.1 kg cm$^{-2}$ and was softest. Generally, a value greater than 2.2 kg cm$^{-2}$ would be desirable as it’s purported to have only a slight tendency to produce a buried golf ball lie.

NO STRONG INDICATOR
When evaluating all the physical data for these bunker sands, no single measured or calculated property was a strong indicator or predictor that could be correlated with penetrometer
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values. Although five sands had penetrometer values greater than 2.0 kg cm$^{-2}$, the GMD, Cu, GI and angle of repose data was highly variable. For example, crushed limestone had the highest penetrometer value, 3.32, but a Cu that was less than 2.0 and a GI of 3.53. This indicates that other properties might influence sand surface hardness such as particle surface roughness. The two firmest sand products, crushed limestone and Pro Angle with penetrometer values of 3.32 and 2.84 kg cm$^{-2}$, respectively, were mechanically crushed products. This process might affect surface roughness and allow the particle surface architecture to bridge or link with adjacent particles better than naturally mined materials.

When evaluating sands for golf course bunker use, enlisting the assistance of an accredited testing laboratory is highly recommended. These laboratories can run a variety of physical tests and be extremely helpful during the selection process. In addition to the tests run in this study, these laboratories can also assess other properties like crusting potential and infiltration rate. Additionally, these laboratories probably are familiar with many of the existing, regionally available sands that might already have been characterized.

To date, data most helpful for determining surface hardness is the modified pocket penetrometer test. This test, however, has met with some criticism because of perceived reliability and variability in measurements among users. Other quantitative methods are under evaluation at several research laboratories. GCI

Cale Bigelow, Ph.D., is an assistant professor of agronomy at Purdue University in West Lafayette, Ind. Douglas Smith, Ph.D., is an associate professor with the USDA-ARS, National Soil Erosion Research Laboratory in West Lafayette, Ind.

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Check it out

A checklist helps track equipment maintenance—fluid levels, tire conditions, fueling, washing and parking—before and after golf course maintenance employees use the equipment.

Angel Guzman, equipment manager, and Jeff Latka, golf course superintendent, at Champions Run Golf Club in Omaha, Neb. (the site of the annual Nationwide Tour's Cox Classic presented by Chevrolet), developed a checklist to track those maintenance items. The staff uses a recycled, parts bin metal cabinet with 36 spaces for clipboards to track each piece of motorized equipment. The name of each piece of equipment is written above each space in permanent-ink marker. Each employee fills out his own checklist after he checks the oil, fuel, coolant, air filter, hydraulic fluid and tires, and looks for any fluid leaks. When the equipment is returned to the maintenance building after being used on the golf course, it's fueled (with the number of gallons documented), cleaned and parked. The hour meter reading is documented with the employee’s initials.

The metal cabinet cost about $100 five years ago, and the clipboards cost $2 each. It took Guzman about two hours to complete.

Marking the green

Marking a green's edge in relation to the desired collar width can be done easily with a modified paint-striping machine.

Thomas Athy, CGCS, director of grounds at the Omaha (Neb.) Country Club, uses a stripe marking machine ($250) fitted with an easy marker paint gun ($15) and a 15-ounce aerosol paint can ($3 each). Athy added a threaded, quarter-inch-diameter steel rod ($2) that was bolted to the machine, which has a 24-inch handle. A rubber tip ($1) was placed on the other end to keep the rod from digging into the grass. The rubber tip is held in place by a one-eighth-inch-diameter nylon rope (25 cents). The desired collar width can be made easily by making the rod the desired width, then painting the dotted lines on the greens' edges for the mower operator to follow.

It took about one hour to modify the paint-striping machine. GCI
**PLANNING A SMOOTH OPERATION**

**Q** When televising a major golf championship, what are the concerns facing a golf course superintendent when interacting with the needs of the electronic media and requirements of the golf course operation?

**A** Major events are televised by networks that give significant revenues back to the sponsoring organization. Throughout the years, I’ve learned the televising network can’t be successful without cooperation from the golf course superintendent and his staff.

The network compound location is important because it’s where it all begins. Space requirements vary from 50,000 to 125,000 square feet, including space for trucks and their trailers, office trailers, golf carts, parking for hundreds of workers, food-and-beverage tents, restroom facilities, and entrance/exit availability.

The ground selected should be firm and kept dry to handle heavy equipment and production trucks. This area usually requires a surface of crushed rock or concrete for parking in case rain makes the location swampy.

Communication requirements for the broadcast network should be established and cabling needs should be defined.

Potable water will be required for the catering operation. If water isn’t available, chlorinated water tanks might be brought in. In extreme cases, wells might need to be sunk into the location.

Access to the site is vital. The site must be able to accommodate 250-plus vehicles and shuttles into and out of the compound.

Space for large generators is necessary in case of a power outage. Space needs to be allocated to support servicing needs.

Space should be available for vendors who set up all the towers throughout the golf course and their equipment.

If network affiliates are involved in cooperation with the major broadcasting team, space must be made for their needs, too. This can lead to the use of an inactive fairway in close proximity to the compound.

Finally, the space, equipment, personnel and materials must be secured and surrounded by a chain-link fence.

**Q** During the 1997 U.S. Open Championship at Congressional Country Club, golf course superintendent Paul R. Latshaw, in agreement with the USGA, chose to use walking mowers throughout the golf course. What were the needs of the maintenance area to accommodate this excessive amount of mowers?

**A** First, Latshaw must be commended for his effort coordinating this huge undertaking. While not recommended for daily play, the planning and execution were incredible. Latshaw’s planning for the mechanical end of this program included accommodating space needs of mechanics and technicians to work comfortably without interfering with each other and allocating proper space to park and stage 150 walking mowers. An area for the mechanic staff to rest when not minding the mower fleet also was factored into the master plan.

Latshaw addressed the need for enough grinding units to quickly turn around any mower that needed attention and technicians who specialized in the grinding operation. The ability to move a large number of mower reels around without damaging the reel or hurting a staff member was paramount. It was essential to have enough electrical power from the correct source to accomplish any sharpening task.

There was a need for space to store extra equipment in case units on the golf course broke down. Additionally, the ability to transport replacement equipment onto the golf course was considered.

Latshaw also needed to preorder a sufficient supply of lapping compound.

The ease of fueling each mower, as well as the remainder of the equipment fleet, was factored into the operations equation.

Other considerations: What did the wash-off area consist of? Will water be used, or will it be a “blow off” area? Can more than one mower be washed at one time? Where does the rinsed product go without impacting the flow of the maintenance area and flooding a traffic alley? Can all this equipment leave and be transported onto the golf course in a seamless fashion?

As you can see, this activity – although invisible to golf fans – required time, effort and complete planning of every detail to be effective and functional.

Editor’s note: If you have any questions about course set-up or maintenance related to golf tournaments or events, e-mail Tim Moraghan at tmoraghan11@comcast.net.
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Floratine | www.floratine.com | 110 | 83
FMC Corp | www.fmc.com | 77*, 90*, 91*, 93* | 55, 69, 70, 72
Friesen USA | www.meridianmfg.com | 98 | 77

COMPANY | PAGE | RS
--- | --- | ---
Hunter Industries | www.hunterindustries.com | 13 | 14
John Deere Golf | www.deere.com | 28-29 | 24
JJ Mauget | www.mauget.com | 79 | 58
Kalo | www.kalo.com | 94-95 | 73
Lebanon Turf Products | www.lebanonturf.com | 17 | 16
National Mower/Locke Turf | www.locketurf.com | 75 | 53
Nufarm Turf & Specialty | www.turf.us.nufarm.com | 80, 81, 103 | 59, 60, 61, 62, 78
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few weeks ago, I was standing in line at the Orlando Convention Center waiting to pick up my GIS media badge when I felt a tap on my shoulder and was a bit shocked to find my old friend Bubba standing there with a silly grin on his face.

Bubba, as you may recall, is a down-to-earth, grass-growin’, tractor-hat wearin’, tobacky-chewin’ throw-back superintendent. He’s the kind of guy who’s happier tearing apart a Cushman engine or back-lapping reels than donning his clip-on tie and going to a bunch of seminars at the big show. Bubba is, in a word, a caveman. But he’s a world-class caveman with a Midas touch when it comes to turf.

“What the heck are you doing here?” I asked incredulously. I knew he’d never been to a national show before.

“Gotta get my certification,” he replied while fumbling with his clip-on tie. “The new wife thinks I’d be more respectable with them extra letters behind my name.”

“How many ‘new wives’ is that now?” I asked.

“She’s number four, but I think she’s really the one this time. She wants to get herself... er, enhanced... and the procedure ain’t cheap. The club said they’d bump my pay if I got certified, so I’m one certification-motivated sumbitch.”

Bubba looked over, and I could see the gears turning in his head. “Jonesy, what the heck do you do at these GIS shows?” he asked warily. “You probably go to all sorts of press conferences the companies hold and try to dig up stories to write for those magazines, right?”

“Well, not quite,” I replied. “So you’re exhibiting in one of the booths?”

“Not exactly.”

“Oh, then you’re attending a bunch of seminars to learn more about agronomy, right?”

“I gave up on trying to pretend I was a turfhead years ago, Bubba.”

“OK, so what the heck are you doing here?”

“Observing,” I proclaimed. “So you aren’t really doing anything except hanging out, talking to people and waiting for someone to buy drinks?”

“Correct,” I replied. “Care to join me?”

Thus, Bubba decided to blow off all his seminars and became my first-ever show intern, essentially observing how I observe. Here are a few things we observed together as we wandered around the 2008 GIS in Orlando:

Within minutes of leaving the registration area, we bumped into Steve Mona, the soon-to-be-former c.e.o. of the GCSAA. Steve and I had a nice chat, and Bubba awkwardly shook his hand. Once Steve excused himself, Bubba asked me why a great guy like Steve was leaving the national.

“Because he’s done what he can in Lawrence, and it’s time for him to move on,” I said.

Bubba looked puzzled: “Why would he give up a cool job like that?”

“Because 14 years as the head of a national association is like 28 years as the superintendent at the same facility,” I replied. “You run out of ideas and, more importantly, you run out of political capital. When the board members who hired you are all gone, it’s time to think about moving on. Oh, and the PGA Tour is going to pay him a heckuva lot of money to run this World Golf Foundation thing.”

Bubba smiled and nodded, definitely understanding that last part.

Next, my new intern and I wandered onto the show floor. Bubba immediately started collecting his stuff – little green basketballs, orange and green golf caps and booth swag of every imaginable sort. Once we’d walked around for a while, I asked him how many of these companies he actually bought things from for his golf course.

“A few,” he said. “Mostly I buy stuff from local people my area that I know and trust. If they recommend it, I’ll usually try it.”

Hmmmm... I thought as I looked around at the hundreds of booths staffed by hopeful but often clueless salespeople... maybe the intern can teach the jaded old veteran something after all.

As we walked, I asked Bubba what he thought about Orlando. “Nice weather, plenty of stuff for families, but kinda hard to get around,” he said. I told him the show was in New Orleans next year. “Isn’t the city still underwater?” he asked with concern. “Parts are still pretty screwed up, but the French Quarter and Bourbon Street are back and better than ever,” I said. “Count me in, then,” Bubba said. “I’ll be my contribution to the city’s recovery. So, is there anything fun to do in New Orleans?” I just smiled and told him to meet me at the intersection of Bourbon and Bienville a year from now, and I might be able to show him a few interesting places.

After a long day of “observing” and meandering around the trade show, we decided it was time to relax and visit a few of the evening hospitality events. There were plenty of corporate parties to go to – mostly sort of stuffy affairs held in hotel ballrooms – but the real fun was at the big chapter receptions. After taking a series of trains, taxis, helicopters, monorails and ox carts, Bubba and I successfully managed to find and crash parties for the California, Florida, Ohio, Carolinas and Wisconsin chapters.

As we sat at our last event of the night, I decided to test my not-so-young intern: “Bubba, why do these chapter events feel different than all the other ones we’ve been to tonight?”

The big man pondered for a minute. Then, as if a sunbeam had broken through the clouds, he cracked a broad smile, yanked off his clip-on tie and threw it high in the air before exclaiming, “Because it’s like being in their family, Jonesy!”

I realized my intern had become wise beyond his experience. “You’ve passed the test, grasshopper. Get yourself another beer, and tell them it’s on your wife’s plastic surgeon.” GPI
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