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TO MAXIMIZE YOUR CREW'S TIME.**



INSIDE

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Eyes in the sky / **P 34**

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¹Baird; University of California, Riverside; 2012



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CLOSING THOUGHTS

Typically, every year production of this issue shoehorns us somewhere in between Thanksgiving and the Christmas holiday. Frankly, it's a nutty time of the year because we're busy managing end-of-year commitments, holiday vacation schedules and strategic editorial planning for the coming year.

Part of that includes issue prep and planning for the Golf Industry Show. Like in recent years, GCI's show issue will feature our annual State of the Industry report. And as I write, that research is out in the field. So without a doubt you'll need to pick up a copy of the January issue.

However, we're constantly discussing the state of the industry... as we see it.

WHAT WE KNOW...

Without a doubt, this industry will continue to wrestle with all matters pertaining to water in not only the coming year, but the foreseeable future. What's interesting is that water impacts nearly everyone — the have not's and even the have's. If you're not asking where to get it, then you're preoccupied with how to best manage it in your turf system.

Most importantly, as an industry we need to remain out on the forefront of this issue and not only regulate from within, but do a better job of telling that story to the general public. When politicians feel the pressure from constituents who can't water their lawns, we need to be ready to tell the story about how the course is operating at optimum irrigation efficiency, that x-amount of rough has been converted to native species, and how the local course is an important economic engine to the community.

WHAT WE HEAR...

In the coming year, expect to hear everyone talking about "precision turf management (PTM)." It started to gain momentum this year, but will be the topic de jour in 2015.

Again, like with water, it all focuses on being better stewards of the cards you've been dealt, and PTM encompasses everything from inputs, to playing conditions and creating a more sustainable and environmentally responsible golf course.

WHAT WE THINK...

Bunkers, bunkers, bunkers. Everyone seems to have a bunker project on the books. It's just the latest in what appears (again, this is what we "think") to be a growing boom in course renovation and construction. We

suspect courses are dusting off Master Plans and addressing issues impacting playability and economics.

That's why you need to check out Assistant Editor Guy Cipriano's feature "Pulling it all together" (page 20), which provides an in-depth account of the \$7.2 million renovation of Ford Plantation. Guy's story is reflective of what we're seeing, hearing and

thinking in the industry. At the very least, it's an interesting read about giving Pete Dye a mulligan on a nearly 30-year-old project.

ONE MORE THING...

Attention all turf students... GCI is seeking qualified candidates for its 2015 scholarship program. GCI and its parent company, GIE Media, has established a fund to support academic scholarships for outstanding college students focused on leading in the green industry.

This is the fifth year that GCI will be giving away a \$2,500 scholarship. To be eligible, candidates must be enrolled at a recognized two- or four-year college or university working toward a degree in horticulture, environmental science or other field related to a segment of the green industry.

Know someone who's interested? Let them know they can download an application by entering bit.ly/11PXzFc into their browser. Applications must be postmarked by April 15, 2015. GCI



Mike Zawacki
Editor

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Carolinas keeps growing

Attendance breaks records again in 2014.

This year's Carolinas Golf Course Superintendents Association's annual conference and trade show in Myrtle Beach, S.C., continued its growth trend, starting with education. A total of 1,357 attendees filled seats in the seminars from Nov. 17-19, breaking last year's record of 1,326. Even though the total number of seminars dropped from 28 to 25 this year, attendees still turned out for industry training.

The conference itself saw 2,050 participants in 2014, in line with last year's total, with 985 attendees including superintendent and assistant superintendent members. The show also surpassed its gross revenue high for last year, coming in at just less than \$667,000.

Bill Kennedy, CGCS, from Chechessee Creek Country Club in Okatie, S.C., was named the 43rd CGCSA president, elected at the annual business meeting. Kennedy plans to make the local branches of the association a focus for the upcoming year. Read more about his goals for the year and the rest of our interview with him at bit.ly/11OOSuU.

Members also elected Matthew Wharton, CGCS, from Carolina Golf Club in Charlotte, N.C., to the board of directors.

Other show highlights included Mike Fabrizio, CGCS from Daniel Island Club in Charleston, S.C., receiving the Distinguished Service Award, the highest honor the association can bestow. Fabrizio served two terms on the board of directors and was president in 1994.

Steve Agazzi, from the Turtle Point course at Kiawah Island Resort, won his third superintendent golf championship, presented in partnership with Smith Turf and Irrigation and the Toro Company. Agazzi shot a 79 on the Love Course at Barefoot Resort. He also won in 2010 and 2012. Paul Jett, CGCS, of Cardinal Chemicals, a three-time superintendent champion, won the affiliate championship with a 77.

Six retired members were granted life-membership of the association for long service. They were Bill Anderson, CGCS, Johnny Burns, CGCS, Thomas Green, Mickey McCord, John Sheran, CGCS, and Gary Stafford.

More than 500 people attended the annual Carolinas Night at the Beach celebration presented in partnership

The Carolinas Golf Course Superintendents Association Conference and Show in Myrtle Beach, S.C., eclipsed last year's attendance and revenue numbers.



with Tri-State Pump and Control, moving between adjacent nightclubs Revolutions and Crocodile Rocks at Broadway at the Beach.

A team from Clemson University won the annual Student Turfbowl, presented in partnership with Precision Laboratories, ending Horry-Georgetown Community College's two-year winning streak.

Paul Corder, from the Country Club of Charleston, won the \$5,000 grand prize in the annual 27-Hole Challenge presented in

partnership with John Deere Golf, Greenville Turf and Tractor, Revels Turf and Tractor and ShowTurf. Patrick McAnaw, from the Country Club of the Crystal Coast took home an iPad as the major winner of the assistant superintendent drawing. A total of 19 prizes worth about \$13,000 were given away.

James Duke, of Cardinal Chemicals, won the annual sporting clay championship presented in partnership with Bayer and Carolina Fresh Farms.

PROPANE-POWERED INITIATIVE

Eight U.S. golf courses are testing alternative fuel turf equipment through an inaugural research program with the Propane Education & Research Council. The 12-month demonstration program will lease propane-powered turf equipment to participating courses chosen for their commitment to environmental practices. The courses include: Stone Mountain (Ga.) Golf Club; Fernandina (Fla.) Beach Golf Club; Marriott Desert Springs (Calif.); Renaissance Vinoy (Fla.); Columbus (Ohio) Municipal Golf Course; Reston National (Va.) Golf Course; George W. Dunne National (Ill.); and Willows Run (Wash.) Golf Course.

Each course will receive four pieces of R&R Products' propane-powered equipment, including the Reel Max 331LP finish cut reel mower, Reel Max 744LP 5-gang fairway mower, Versa Green 2200 riding greens mower and Sand Max 521LP utility vehicle. R&R Products is the first to manufacture and commercialize propane-powered turf equipment for the golf industry.

A new USGA map

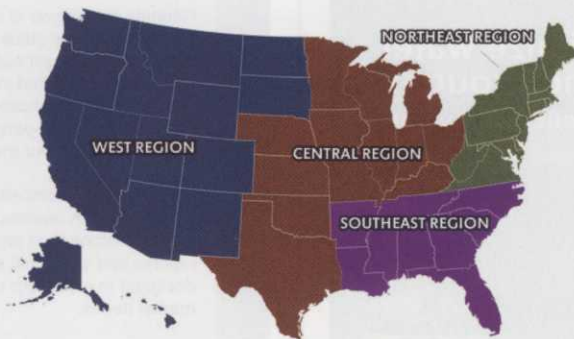
The USGA altered its agronomic map, reducing the number of Green Section regions from eight to four effective Dec. 1, 2014. The changes marked the first alterations to the Green Section regions in nearly 20 years.

The Northeast, Southeast, Central and West comprise the new regions. Past regions included the Northeast, Mid-Atlantic, Southeast, Florida, North-Central, Mid-Continent, Northwest and Southwest.

The changes represent the mergers of regions, with the lone exception being the addition of Louisiana and Arkansas to the Southeast Region.

USGA Green Section managing director Dr. Kimberly Erusha told GCI the regions were altered following an administrative review. "It made a lot of sense administratively to make larger regions, but to also be able to concentrate more people within a region," she says. "That's what ultimately led to the choice to take it from eight to four regions."

Each region will be served by at least four USGA agronomists. The Northeast Region will have five agronomists, the West four, and Southeast and Central three each. Dave Oatis (Northeast), John Foy (Southeast), Keith Happ (Central) and Pat Gross (West) will be regional agronomists.



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SAFE LANDINGS

The nation's largest private equity club offers two inspiring examples of successful co-habitation between wildlife and large-scale golf.

Lodged near the top of a giant tree above the 14th tee of The Landings Club's Palmetto Course are two cameras. The cameras are pointed toward a large nest. If nature follows its annual patterns, a pair of bald eagles should visit the nest this month, with their activity being shown live on the Internet.

The project, a partnership involving the 108-hole The Landings Club in Savannah, Ga., Skidaway Audubon, Georgia GCSA, Georgia Golf Environmental Foundation, and multiple other community and environmental groups, is called "Eagle Cam." View the camera at <http://thelandingssavannaheaglecam.com>.

"Eagle Cam" adds to The Landings Club's reputation as a wildlife friendly facility. The club started a Diamondback terrapin hatchery program on its Plantation Course in 2004 as a



The 108-hole Landings Club in Savannah, Ga., started a Diamondback terrapin hatchery program on its Plantation Course in 2004.

response to the species' declining population and penchant for laying eggs in bunkers.

Chris Steigelman, director of golf course maintenance for the Palmetto and Plantation courses, considers the wildlife initiatives an extension of the club's goals. "The island was


intended to be very naturalistic," he says. The club's first course opened in 1974, the sixth in 1991. The island includes 4,422 residential lots and around 8,500 residents.

The scope of the club's golf operations is jarring: the six courses cover 41,270 yards

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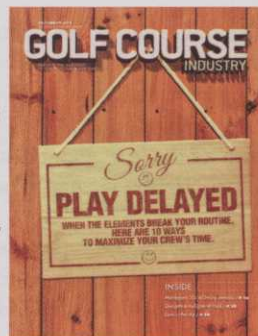
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Trained professionals and volunteers moved 2,200 Diamondback terrapin eggs from bunkers to hatchery boxes along the Plantation Course this past nesting season.

and 110 golf course maintenance employees work out of four shops. Busy days fill the calendar, yet supporting wildlife is a priority. "Wildlife is a big part of what we do as golf course managers," Steigelman says. "We are responsible for being good stewards of the environment and protecting the land that provides us enjoyment. It's huge for us. We try to give back wherever we can while still realizing that we maintain six championship golf courses. We like to try to let people know that you can do both. You can have nice golf courses and wildlife at the same time."

The Diamondback terrapin hatchery is featured on the Georgia GCSA's "Stewards of the Land" video, which can be viewed by typing bit.ly/1vj3j4M into your web browser. The turtles live in marshes, and the club created the hatchery program after spotting eggs in bunkers following high tide. The areas with eggs were initially marked as ground under repair, but Steigelman says raccoons entered bunkers and killed eggs. A naturalist recommended a hatchery program similar to the ones for sea turtles on Jekyll Island and St. Catherines Island. The program has blossomed. Trained professionals and volunteers moved 2,200 Diamondback terrapin eggs to three hatchery boxes along the course during the last nesting season.

The eagle nest has a shorter history at The Landings Club. Steigelman first spotted the nest when he noticed an eagle carrying a large stick flying above the 14th fairway on Dec. 24, 2012. The eagles returned last December, thus sparking interest in documenting their movements. The cameras were installed this past July, and the Cornell University Lab of Ornithology placed a sensor on the nest. When the sensor detects movement, the cameras are turned on. The nest is a busy spot, with a pair of great horned owls, a hawk and, yes, an eagle making recent visits.

Steigelman joined Superintendent Radio Network to discuss "Eagle Cam" and the terrapin hatchery. The podcast can be accessed by typing bit.ly/1tETf5i into your web browser. GCI

From THE FEED

Neat course, mate! The Australian Masters appeared on prime-time television in the states, giving superintendents and other turfgrass aficionados an opportunity to admire Metropolitan Golf Club. The Melbourne Sandbelt gem featured expansive couch grass fairways, sandy waste areas instead of rough and greens hand-mowed to the edges of bunkers. The Sandbelt style was an immediate Twitter sensation.



TJ Collins

@TJCollins8

love it. Would be fun to play courses like those.



Tony Nysse

@tonynyssegcs

the coverage has kept me up way past my bedtime the last 4 nights. Incredibly cool designs and maintenance



Jamie Slonis

@JamieSlonisCG

Love it. The bunkering that flows right into fairway or green height cut looks great. Better than heavy rough.



Troy Fink

@terribleturf

I like it!



Matthew Wharton

@CGCGreenkeeper

@terribleturf Same here! Love the overall look, feel & way the bunkers "bite" into the greens!



Jamie Slonis

@JamieSlonisCG

Love it. The bunkering that flows right into fairway or green height cut looks great. Better than heavy rough.



Andy O'Haver

@andyohaver

love it!



Jeff Whitmire

@jeffwcc1_jeff Nov 23

Awesome!



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THE 2014 GRAINY AWARDS

It's that time of year again, when I recount the season and generously hand out the Grainy Awards, my heartfelt attempt to recognize the up and downs of golf, which, as usual, went roller-coasting back and forth, from sea to shining sea.

Looking back, it was a dry year, not only from the heavens and in the ground, but in the spirit and humor that so often grip the game. If there was one overriding theme this year – the third for these awards – it was golf's inability to laugh at itself. I know we have some serious problems, and people are proposing serious solutions. But let me once again remind everyone that through it all, it's only a game. So let's lighten up and have some fun. And with that, the envelopes please...



BEST HORROR MOVIE: GREG NORMAN

Give Greg credit. A few years ago, he was the (unintended) lead actor in a mixed-up romantic comedy-tragedy. This year, he shifted gears – while forgetting to put on the brakes – in a blood-spiller. He got lucky, and the slip of the chainsaw resulted in a non-career-threatening injury when you remember that his new career is television, specifically providing color commentary (red?) for Fox when its USGA contract starts in 2015. Some advice, Greg: Leave the tree-trimming to the production designers and stay away from hand-held cameras.



BEST DIRECTOR: SHAWN EMERSON, DESERT MOUNTAIN

After the "set" fell apart following

torrential downpours and floods (not once, twice but three times), coupled with the Champions Tour season-ending Schwab Cup, complicated by overseeding, Emerson was able to provide much-lauded course conditions and a stern test of golf for the competitors. How do we know this? Because the players were "befuddled" by the course conditions experienced, bringing back self-described memories of their U.S. Open conditions and past nightmares.



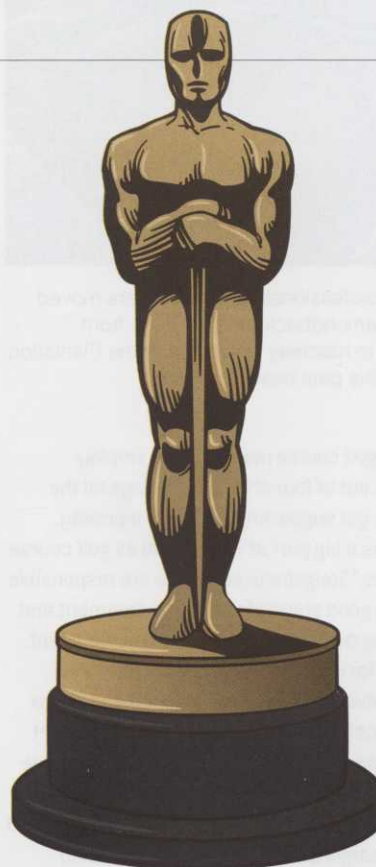
BEST DOCUMENTARY: THE CALIFORNIA DROUGHT

It's documented, it's discussed, the USGA probably has an "initiative" to solve the problem, but at the end of the day, it's a desert. Paying golf clubs to take irrigated turf out of play or planting "natives" is a noble attempt at trying to make nice with Mother Nature. However, the NIMBYs continue their poor performance – washing driveways in Orange County, taking 25-minute showers at elite health clubs and commercial properties not monitoring their irrigation systems – while golf course superintendents take it on the chin.



BEST SOUND MIXING: TEAM USA AT THE RYDER CUP

Instead of being humble in defeat, Phil Mickelson aired the team's dirty laundry in front of an audience of international media, essentially throwing Captain Tom Watson under the bus for being "aloof and distant." In team play, what's said in the locker room should stay in the locker room. This is another example of American professional golfers not grasping the



team concept. In the future, they would be wise to try for the award in sound editing.



BEST SUPPORTING ACTRESS: PAULA CREAMER

Holing any big-breaking, 75-foot putt is a big deal, but Paula Creamer dropped just such a bomb during a playoff to win the HSBC Women's Champions tournament and end a four-year winless drought. Her dramatic reaction is worthy of a Grainy. Also, further "best supporting" congratulations to Paula, who got married in December.



BEST LIVE SHORT FILM: PACE OF PLAY FOR THE LPGA

Emphasis on "short." The USGA advising the LPGA on pace of play is like telling a glacier to move faster because of global warming. It's well known that the women of the LPGA Tour, while very talented, are also

among the game's most "deliberate" players. (Sometimes I wonder if they actually are "live.") Putting them on the clock is not only a good idea, but a necessity, yet I expect there will be at least one sequel to this movie.



**BEST ANIMATED SHORT FILM:
PACE OF PLAY**

Look up the definition of redundant and it reads "pace of play." The USGA holds a summit on pace and it takes eight hours to discuss a four-hour round. The script for this film should be written by George Orwell. Or better yet, by Penn State graduate, Alabama scholarship golfer and seasoned superintendent Tim McAvoy, who says, "the best thing to speed up pace of play is darkness."



**BEST COSTUME DESIGN:
EUROPEAN FANS AT THE RYDER CUP**

The always creative, never-let-you-down Euro fans were superbly attired and always good for a belly laugh or two. I just hope they remember to change before they go back to work. They do work, right?



**BEST ADAPTED SCREENPLAY:
PINEHURST #2**

With all the focus – and USGA-generated media coverage – on Pinehurst No. 2's water savings, hosting two Opens back-to-back proved to be a huge and very successful undertaking. However, I still don't think the golfing public is going to buy the "look" of those conditions: When we spend green, we want green, and no amount of public relations will change that. Or think about it from a course's point of view: Who wants to spend millions of dollars to save a few thousand gallons of water?



**BEST SUPPORTING ACTORS:
PATRICK REED AND JORDAN SPIETH**

With their bravado, fiery attitudes and ability

to put the spirit back into competition, Reed and Spieth aren't just my nominees for best supporting actors. They are the future of the game.



**WORST SCREENPLAY:
MAINTENANCE DOWN THE MIDDLE**

Maintenance down the middle, derived from the Pinehurst philosophy, is a great concept for saving on labor and irrigation. But how many golfers actually play down the middle? Furthermore, it's a slap in the face to the superintendent, who is trained and entrusted to take care of the entire course.



**BEST COMEBACK:
RORY MCILROY**

"Sex weakens the legs." That admonition, once credited to Mickey Mantle, seemed to work for Rory. After releasing Caroline Wozniacki of her platform shoes and multi-carat ring, the lad from Holywood had a resurgence worthy of an Oscar. During the second round of the 2014 Tour Championship, Rory hit a drive that bounced off a tree and into a spectator's pocket. The spectator was asked not to move while Rory and an official discussed how to properly play the ball. Rory took a drop and made par. Winning two majors – with or without a fiancée – is an award-winning showing. And we hear he's now dating models.



**BEST ORIGINAL SCRIPT:
PGA OF AMERICA**

You can't make this stuff up, so someone had better write it down. Suggesting a PGA Championship outside of the USA. Valhalla's finish in the dark. Announcing the Ryder Cup at Bethpage Black. Forming an alliance with KPMG, LPGA and NBC to bring the KPMG Women's PGA Championship to Westchester Country Club next June. An abysmal Ryder Cup (Best Foreign Feature?). Ted Bishop's troubled tweets. Suzy Whaley's election.

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OUTSIDE THE ROPES

Memo to Pete Bevacqua: You might want to get some new writers in 2015. Ones who don't like so many plot twists.



BEST DIRECTOR:

MIKE WHAN, COMMISSIONER, LPGA

Twelve months ago, who could have envisioned so many uplifting and headline-making moments coming from women's golf? Under Whan's leadership, the LPGA Tour is flourishing. Like any good director, he got lots of support from his stars: Lexi Thompson and Michelle Wie both won their first major championships; Stacy Lewis and Inbee Park continued their rivalry; and Lydia Ko nailed the role of up-and-coming ingénue. If the USGA can really get the ladies to play faster, I might even watch them for a few minutes.



SPECIAL ACHIEVEMENT:

DRIVE, CHIP AND PUTT,

AUGUSTA NATIONAL GOLF CLUB

The inaugural championship competition was exceptionally well run. Question is, who deserves more of the credit: a stellar international field of junior golfers or Augusta National, which has traded its former Greta Garbo-like privacy for Billy Payne's open-door policy?



GET ME REWRITE:

TED BISHOP

Did last year's best director Rainy recipient, Ted Bishop, deserve to have his title and PGA privileges revoked for his "lil girl" comment? With all the other challenges facing our game, should a stupid tweet be a career-ending offense? Don't worry Ted, we're not asking for our Rainy back. From where we sit, Bishop remains a friend of the game. (Even my better half says she's heard much worse.)

And what or who do you readers feel is Rainy worthy for 2014? Tweet your submission to @GCImagazine. **GCI**

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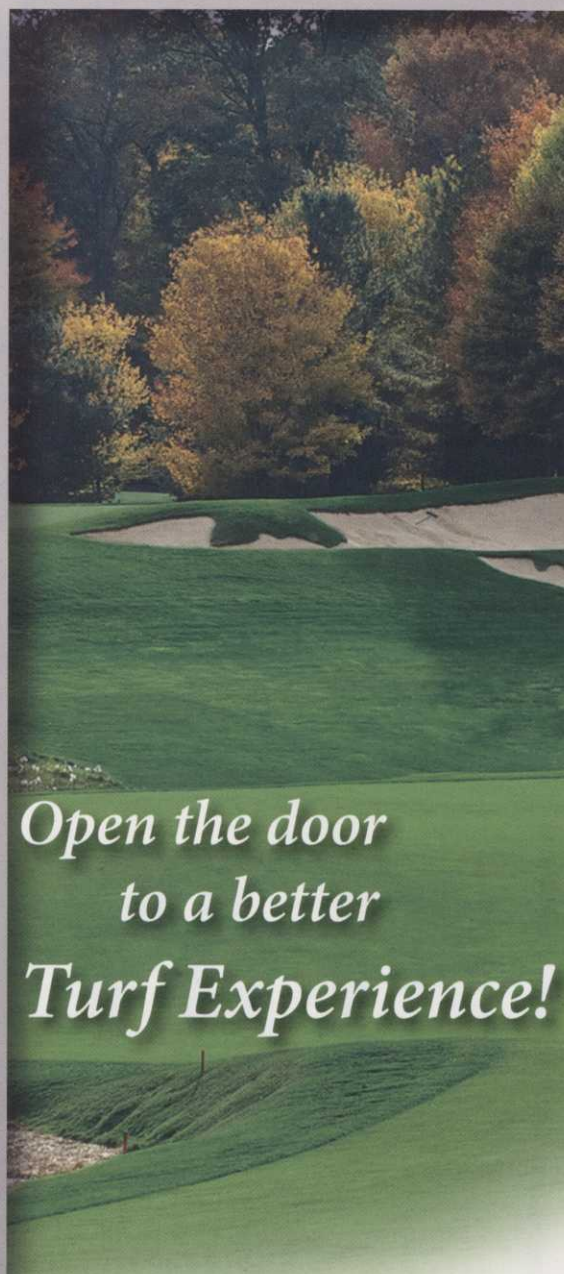
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PLAY DELAYED

WHEN THE ELEMENTS BREAK YOUR ROUTINE,
HERE ARE 10 WAYS
TO MAXIMIZE YOUR CREW'S TIME.



O

n Nov. 18, parts of all 50 states were covered in frost. Instead of sitting idle that morning, TPC Potomac at Avenel Farm director of golf course maintenance Stephen Britton jumped in his truck and toured the Maryland course with two assistants.

Britton drove. His assistants carried notepads and pens.

By the end of the tour, their winter to-do list had expanded to include work on wetlands, a mucky part of the course easier to tidy when the ground hardens in the winter. "I guess you could say we refurbished the winter list," Britton says.

Whether it's enhancing wetlands, refurbishing equipment, improving signage or renovating a bunker or tee, a weather-induced delay to your crew's routine doesn't need to be a setback. With proper planning, a delay helps your crew get ahead when golfers return.

"You can only clean the maintenance shop so many times, you can only sit around for so long" says Bryan Stromme, the Midwest/West regional director of agronomy for Billy Casper Golf. "The biggest thing – and most superintendents are really good at this – is not sitting around and waiting for that day and going, 'Wow, it's frosty. What do we do?' It's about having a plan so you know ahead of time and having the materials and everything ready."

So you consider yourself a planner, but the weather stinks, you're keeping some crew around for the winter and you're stuck in an idea rut. Don't fret. We're offering 10 ways to maximize the time while waiting for the most important parts of a course to thaw or dry.

By Guy Cipriano

1

TREE TIME



Tree removal and pruning ranks atop nearly every list of frost-delay projects, especially in regions where golf can be played frequently throughout the winter.

"The No. 1 winter projects trending in the Southeast are pruning along wood lines," says USGA Southeast Region agronomist Patrick O'Brien. "That's very popular to improve turfgrass quality along wooded areas. The other thing is the use of 50- to 60-foot bucket trucks to do a lot of trimming alongside the course just to create wider corridors, improve playability and to make the hole more fun to play for the golfers."

Billy Casper Golf manages 11 courses at the Forest Preserve in Cook County, Ill., and Stromme says superintendents and assistants will meet at one spot and work on various tree projects throughout the winter. "We are fortunate to have so many courses in the Chicago area," Stromme says. "The guys can work together. It's not just two guys working by themselves. It's a crew and we can bust stuff up pretty fast."



2

KNOCK DOWN THE NATIVE

✓ Scraggly branches aren't a problem at Pronghorn Club in Bend, Ore., because the majority of the 36-hole facility's trees are small. Scraggly native areas, though, are an issue, and managing them is a poor-weather day priority for director of agronomy David Freitag.

"We have to go in and thin out sagebrush, rabbitbrush and plants like that," Freitag says. "They get thick as the year goes on and we thin out ones near our high-play and teeing areas." Brush-cutters and other heavy-duty mowers receive workouts throughout the country this time of year. "Even if there's a little frost, you can get in and mow your fescue," Stromme says. "If it's not a heavy frost, it's not going to hurt."

Georgia Southern University Golf Course superintendent Patrick Reinhardt uses his student workforce to improve playing corridors. The golf course Reinhardt and his crew maintain opened last year and brush that wasn't cleared during construction extends into potential playing areas.

"We are trying to expand our corridors more," Reinhardt says. "We are fairly tight. Some of those areas we are going back 15, 20 feet. Chinese privet gets real invasive. It will grow right along the edge of the tree line where there's sunlight. It's basically one row of plants, but it ends being 15 feet wide, so we go in there and basically take out that row of plants and it opens things up."

3

WOODWORKING

✓ TPC Potomac's shop often resembles a furniture warehouse during the winter. The club has 250 pieces of wooden furniture and other amenities on the course, and the entire collection is stored for the winter. Each piece is sanded and restained every winter. Using a crew of eight, the project takes six weeks.

"It's a nice feeling when April 1 comes around and you say, 'Let's take everything out,'" Britton says. "You're seeing all this brand new furniture out and it's kind of like a nice reset button. You kind of know the season is starting when everything out there is new and fresh."

The Tom Fazio-designed course at Pronghorn has 275 wooden rakes. In an effort to extend their usefulness, Freitag says rakes are restained each winter. Stromme says creating tee markers and building water coolers using wood from trees removed from the course are popular winter projects.



5

REFINE A GROW-IN

✓ James Stow is the superintendent at the 36-hole Ross Rogers Golf Complex in Amarillo, Texas, where frost occurs more than northerners think. "It might be a high of 30 today and then it might be 60 tomorrow," he says. "It's a little weird."

The disparity means Stow uses the winter to aid the grow-in of the complex's Mustang Course, which recently underwent more than \$3 million in renovations. "We have about two-thirds of it grown-in and then we hit this time of year," Stow says. "We kind of have to baby it through the winter, go in and reseed, and touch it up for the spring."

Stow's crew consists of 15 workers responsible for maintaining two golf courses. When there's a delay, tasks involving the grow-in often take priority. "You need to plan for covers in a grow-in situation," he says. "You need to make sure you are keeping as much turf there as you can."

4

IF YOU BUILD IT, THEY WILL GROW


✓ One of superintendent Justin Ruiz's long-term projects at Indian Summer Golf & Country Club in Olympia, Wash., involved building a small greenhouse to grow in-house annuals. The project was completed last winter, as a mechanic spent a poor-weather week pouring the foundation and assembling a frame. The greenhouse measures 12 feet by 12 feet and growing annuals in-house could save the club \$4,000 per year. This marks the first growing season since the greenhouse was installed, and if everything goes as planned, annuals should be ready to place around club grounds by the spring.

"It was something we wanted to do for a while and the mechanic had some time to do it," Ruiz says. "It should save us money. We should have no problems growing annuals in there, but it's also my first year to see how long it takes to grow them. It's a smaller greenhouse, but it will be enough to get a few hundred plants in there."



6

BACK INTO BUNKERS


 As the economy improves, many courses are embarking on full-scale bunker renovation projects. But what happens when your course or club doesn't have the budget to renovate 50-plus bunkers? Stromme, whose company manages more than 150 courses, says trying to pick off a few aging bunkers each winter is a wise in-house practice.

"Typically you can get some of the bunkers done without damaging the turf," he says. "It makes a lot of sense. When we do our in-house bunker renovations, we will redo the drainage, go down to the original base and clean them out. We don't change the shape or depth. We clean all of the sand out to the clay or whatever the architect designed at the base and redo the drainage if it's needed. We put in new pipe and gravel and comeback and put new sand in."



7

TAKE IT APART

 Maintenance shops are busy places during the winter.


"There is always some type of project going on," Ruiz says. "We're rebuilding something, fabricating something or the mechanic is making a trailer or something like that. We have some downtime to mess around with things and we have time to wedge something in to help us next year."

Mechanics at TPC Potomac, which receives its primary maintenance equipment via a lease, attempt to refurbish at least one piece of auxiliary equipment before the new golf season begins. Mechanics improved a 10-year-old fairway topdresser last year. "We stripped it all back, sandblasted it and repainted it," Britton says. "We then repainted it and put on new melts and spinners. We made it like new."

Reinhardt pairs his full-time mechanic with students during weather delays in an effort to keep the Georgia Southern Golf Course's equipment from instantly aging. "It's a one-year-old fleet," he says. "We don't want it to look 20 years old."

8

STUDY TIME

 Britton is completing materials required to become a Certified Golf Course Superintendent this winter. "For guys in the Northeast and East Coast, this time of year is a great opportunity," Britton says. "It's a lot of work. If you have a family, I don't think you could ever get it all done during the golfing season."


Freitag uses winter to perform safety training with employees and complete administrative tasks such as ordering uniforms and devising staffing plans. "You have things that accumulate throughout the year that aren't the biggest priority, but you need to get them done," he says. "You make a list of those things and start attacking them when you have the time. We make sure we can be prepared as best we can be for March so as much as possible is done when the course opens."

Ruiz reviews standard operating procedures for the upcoming season. The reviews are designed to solidify maintenance tactics such as mowing patterns and input levels by the time a full crew arrives in the spring.



9

FRESH IT UP


 The interior of the shop, the mechanics bay, locker rooms and administrative areas are among the areas of TPC Potomac's maintenance facility that receive a fresh coat of paint each winter. Freitag uses the winter to clean the interior of Pronghorn's pump station. Ruiz says deep cleaning equipment and organizing the shop are among his first poor-weather projects.



© STEPHEN BRITTON

10

MOVE THEM FORWARD

 Winter might be the right time to add forward tees on your course without disturbing play. "There's a push to get family tees out there," Stromme says. "We will build some tee boxes farther up so it's not just a set of tee markers in the fairway. It actually gives people a real opportunity to play in a tee box even though they are playing a shorter course." GCI

Guy Cipriano is GCI's assistant editor.

What do you think?

How do you make the best use of your time when play is delayed at your course. Send us your tips to gcipriano@gie.net and we'll share the best ones in an upcoming Fast & Firm newsletter.



Jeffrey D. Brauer is a veteran golf course architect responsible for more than 50 new courses and more than 100 renovations. A member and past president of the American Society of Golf Course Architects, he is president of Jeffrey D. Brauer/GolfScapes in Arlington, Texas. Reach him at jeff@jeffreymbrauer.com.

PLACING FORWARD TEES IN THE FIELD

While starting with plans, because some basic things like yardage, are best figured on plan, other things are better just “felt” or “seen” and not measured. The best final results come after field review.

At some courses, I have actually started by walking the course with the committee, looking at individual holes. On an individual hole, a committee member might comment that the “carry is OK for me, but, ahem ... too far for one of my friends” before agreeing on the merits of a shorter hole. Typically, after all the individual tee locations are plotted to their satisfaction, we often find that a total distance near the target of 4,300 yards (or 5,600 yards for white tees) just happened naturally.

If you are at a club, the committee will probably be larger and more inclusive. If not, remember that you are trying to design the course for how the game is played by others, to eliminate the “good enough for lesser players” mentality present at most courses.

At The Wilderness at Fortune Bay in Tower, Minn., we took our preliminary maps out in the field, first noting the recommended distance, and then considering all the factors that go into determining the best possible location for each tee. The superintendent helped determine the easiest locations from a construction and maintenance perspective. There are often compromises as you look at various locations considering all these issues:

- Safety: Avoid locations that are hazardous from adjacent fairways.
- Topography affects shots:
 - Uphill shots affect short hitters far more, because of the low shot height, angle and velocity. We

further shorten uphill holes by at least 10 percent.

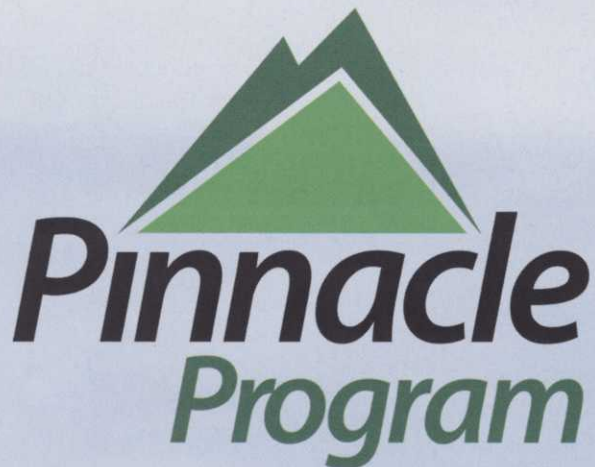
- Nothing is wrong in letting forward-tee players get the occasional long drive and short approach, so we rarely lengthen a hole because it’s downhill.
- View from tee: They should be as clear and pleasant as from back tees.
- Play angles: Make sure forward-tee players have a good angle to the fairway with no visual obstructions. Too many forward tees placed off to the side, only to end up right behind a tree.
- Reduced fear factor: Avoid playing right over bunkers or under/around trees.
- Reduced doglegs: Reduce the angles of sharp doglegs to make getting around the corner easier for both shorter hitters and muffed shots.
- Avoid forced layups: Keep crossing hazards over 155-160 yards from tee to allow full drive.
- Forced carry tee shots: Avoid them or limit to 50 to 60 percent of tee shot distance or 75–90 yards.
- Optional carry on tee shot: Forward tees should offer the same options/challenge as longer tees on any optional forced carry.
- Forced carry on approach shot: Where a forced carry is required on approach shots, we prefer that a full drive land just short of the hazard to reduce the subsequent forced carry as much as possible.
- Access to cart path: Proximity to the path pays dividends in convenience and pace of play.
- Construction ease: Elevated, reasonably flat areas can easily be turned into a tee with minor tractor leveling/grading and adding some mix. Be sure to avoid irriga-

tion, drain lines and buried utilities, but locate tees where existing sprinklers or a simple addition provides good coverage.

- Size: Forward-tee players are sensitive to tees that look like afterthoughts, having seen too many of them. Tees that are too small make bad impressions, even if meeting all criteria above. Square tees should be at least 20 feet by 20 feet. Circular tees should be from 26 feet (about the minimum required turning diameter) to 32 feet, which provides left to right tee placement options for variety.
- Construction: If your back tees have mix and are level, your front tees should have them, too.
- Consider the fairway cut: Sometimes, these newly shortened set of forward tees are actually in the fairway. Most forward-tee players appreciate the look of an actual tee over a level area of fairway. However, in retrofitting an existing course with differing grasses between rough and fairways, it is often the best solution, using flexible markers like the plastic, press down 150-yard plates to avoid construction.

Consider making forward tees clearly visible on early holes to make players aware of the forward-tee system. On later holes, you can conceal them by clever location or simple construction of building a small ridge behind them.

With those parameters (and handicaps, enjoyment, image, etc.) on the line, the only thing I can guarantee is that the discussions will be interesting. No matter what compromises you may make in your individual situation, in reality, you have made the course better for forward-tee players. **GCI**



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A view of the 16th hole at The Ford Plantation in Richmond Hill, Ga. The private club where Henry Ford established his southern residence recently underwent a \$7.2 million restoration.

Pulling it all together

Lessons from The Ford Plantation's \$7.2 million Pete Dye-led renovation offer a template in navigating club politics to make needed improvements.

By Guy Cipriano

The land where The Ford Plantation's current back nine rests offers ideal conditions for growing rice, and the crop holds a prominent place in the exclusive Georgia club's lore.

The club's elegant logo is a rice sheaf drawn from a mahogany bedpost. The logo represents a connection to the land's agrarian roots and a conundrum that regularly flustered the club's 260 members: swamp-like conditions suitable for growing rice are terrible for maintaining a golf course.

Drainage, playable dates and quality of cut mattered little to ultra-wealthy Saudi Arabian businessman Gaith Pharaon in the 1980s. Pharaon wanted a Pete Dye-designed golf course on the land once owned by Henry Ford in Richmond Hill, Ga., 22 miles south of Savannah.

Dye begrudgingly gave Pharaon what he wanted. "The man who built this never played golf," says Dye, a World Golf Hall of Fame member. "He told me to come up here and build a golf course. I remember standing in this general area."

Dye is standing in The Ford Plantation's clubhouse, which features a panoramic view of the back nine. The front nine is hidden amongst the plantation's towering oak and pine trees. "Everything north was water," Dye continues. "I said you could build nine holes. He said, 'I don't want nine holes. I want 18 holes.'"

Pharaon received the course he wanted in 1986. When Dye returned to the property 23 years later, the club's members, who are also Ford Plantation homeowners, were spending big money to play golf on a property that had developed into an agronomic nightmare.

Two inches of rain didn't temporarily halt play. It kept golfers off the back nine for two days. The triple crown of a club's events – the member-guest, member-member and club championship – became front-nine affairs.

Director of golf course maintenance Nelson Caron, who arrived at the club in 2008, says members lost 60 playable dates per year on the back nine because of flooding. The staff often spent more time pushing water than riding mowers and operating trimmers. Steady rains meant



Pete Dye originally designed the golf course at The Ford Plantation for Saudi Arabian businessman Gaith Pharaon. The course opened in 1986.

21 of 26 crew members would be assigned to water-related duties.

"The golf course maintenance staff ended up being a construction staff," Caron says. "We turned our attention and focus away from applying turfgrass maintenance to a staff that was manning a ship, a ship that had holes in it. By 2011, and in 2012 in particular, we had all of our hands in the ship and it was going down. It was time to make some changes."

Major infrastructure changes on a golf

course aren't cheap. Convincing dues-paying members why the changes must be made isn't easy.

Led by Dye, informed by Caron, supported by influential club members and aided by dozens of others, The Ford Plantation opened a new golf course on Oct. 1.

It took five years and produced spirited internal discussions. The final cost of the restoration was \$7.2 million. The project has few recent peers on the renovation Richter scale.

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"Over the past 10 years, there have been very few major renovations such as this occurring in the industry," says longtime USGA Green Section Southeast Region agronomist Patrick O'Brien. "This is by far the biggest I have seen in the past decade in the Southeast Region."

PLANNING TIME

Heavy rains closed The Ford Plantation's golf course for three days in 2010. The inconvenience led to then-club president Bill Weil giving a sharp directive to greens committee chairman Dr. Bill Thompson – find a way to fix the nagging problem.

A year earlier, Dye and fellow golf course architect Tim Liddy visited the club multiple times. Realizing the poor condition of the course's infrastructure, Dye requested Liddy to guide the club through a master plan for improving the course. Creating the master plan represented a collaborative effort, as Liddy worked with Caron, the greens committee, Ford Plantation members not associated with golf and the club's professional staff. The master plan committee listed five objectives for any major golf course restoration effort:

- Restore the detail of Dye's features
- Make the course more playable
- Address infrastructure issues
- Reintroduce Ford Plantation to the marketplace
- Increase environmental sensitivity of the area by implementing best management practices through infrastructure upgrades

"The infrastructure had to be done," Liddy says. "This gave them a chance to make the golf course more playable. But it couldn't be more playable if the infrastructure wasn't there."

The club's leadership entrusted those involved with the greens and master planning committees to educate the membership about the importance of modernizing the golf course. Committee members studied the American Society of Golf Course Architects Remodeling University program before hiring an engineering firm to assess the course's deficiencies. The committees held small group meetings with members and distributed a DVD featuring Caron discussing the infrastructure challenges the course faced. Thompson says the club was spending close to \$300,000 per year repairing broken drainage and infrastructure. The well-spoken Caron understood the back nine's technical shortcomings better than anybody, yet he knew describing the X's and O's of drainage and irrigation wasn't the best way to sell the project to members.

"I had to put it in terms of golf," Caron says. "Mother Nature was doing the work for us. It was selling the project for us. The fact that the golf course would go underwater during a not very significant rainfall and would keep them from playing golf ... They wanted answers. Sometimes the answer wasn't what they wanted to hear because of the cost it would take to fix it."

The renovation's original cost was pegged at \$8.3 million, causing membership

Pete Dye, who turns 89 this month, took a hands-on approach to the renovations at The Ford Plantation, spending more than 40 days at the course. Dye worked closely with fellow golf course architect Tim Liddy on the project.



trepidation. The committees thoroughly analyzed every piece of the proposed project. They leaned on industry veterans such as O'Brien and fellow USGA Green Section staffer James Moore and MacCurrach Golf Construction CEO and founder Allan MacCurrach when managing costs.

Dye's interest represented a coup for the committees selling the project. His name recognition, hands-on approach and enthusiasm toward the golf course flipped skeptics into supporters. Dye's portfolio rivals any living architect, and Thompson had an existing relationship with Dye because of the duo's involvement with Crooked Stick Golf Club in Carmel, Ind. "Getting him was the final piece of the puzzle," Thompson says. "That's what really made it go for the membership. He came in here and embraced the membership."

The proposed assessment to complete the project was a massive \$35,000 per member, a startling sum to even the most hardened industry veterans. "There was some serious opposition," current club president Paul Wickes says. But the combination of a failing golf course, organized greens and master planning committees, and a willing Dye eventually produced widespread support. Through a club vote,

the project was approved by more than 75 percent of the membership.

Construction started on Oct. 1, 2013. Crews had a year to complete the work.

"It's nerve-racking," Thompson says. "I said, 'Boys, I hope this turns out well.' All of you working here can leave and go to another golf course. But we are here for the duration. I don't want to hear about it on the first tee. Every time I tee it up, I don't want to hear guys talk about how awful it is. It's scary."

GETTING DIRTY

The enduring image from The Ford Plantation's restoration will be Dye, who turns 89 this month, dropping to his knees and shaping dirt with his hands. The scene became a reoccurring event. Dye spent more than 40 days at the course during the construction, a huge total for a legendary architect possessing the clout to devise his own schedule.

"I was really, really enthused with the enthusiasm he had for this project," says

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CONSTRUCTION

A levee cuts through The Ford Plantation's back nine. Water from the surrounding wetlands drains into the levee and is pumped into Lake Clara via a modern system that can disperse 16,000 gallons per minute.

McCurrach, who has worked regularly with Dye since construction started at TPC Sawgrass Stadium Course in 1980. "I was surprised actually. He would come for a site visit and I would say, 'See you next month.' And two weeks later, he would call me and say, 'I'm on my way.' Then, I would say, 'I will see you in a month.' And two weeks later, he would say, 'I'm on my way.' He just kept coming in, coming in. He wanted to be here. For the whole job to get its energy from an 88-year-old was pretty amazing."

Caron calls Dye the "center-piece" of the construction team and he considers Thompson the linchpin in matters relating to the membership. The project also needed technical leadership, something provided by Liddy, MacCurrach, engineering firm Thomas & Hutton and irrigation consultant Bob Scott.

The team faced a daunting project. MacCurrach says the first step involved understanding the drainage, which he calls a "New Orleans-type" of situation, meaning parts of the back nine sit below sea level and water flows to one spot.

Lake Clara, one of eight lakes on the property, borders three-quarters of the back nine. The nine holes surround wetlands. The drainage system added during the renovation allows water to flow to a central wetland and into a levee. Caron says the drainage system keeps the water at minus-1 sea level. Rain

triggers a storm water pump system capable of dispersing 16,000 gallons of water per minute from the levee into Lake Clara. The average storm water pump system can handle between 1,200 and 1,600 gallons per minute, according to Caron. Ford Plantation's system is designed to handle the 25-year storm, an accumulation of 8 inches of rain over a 24-hour period.

"It's a massive pump station," MacCurrach says. "It's very capable of dropping that area down very quickly. It's on as soon as the rain starts. It doesn't have to build to a certain level."

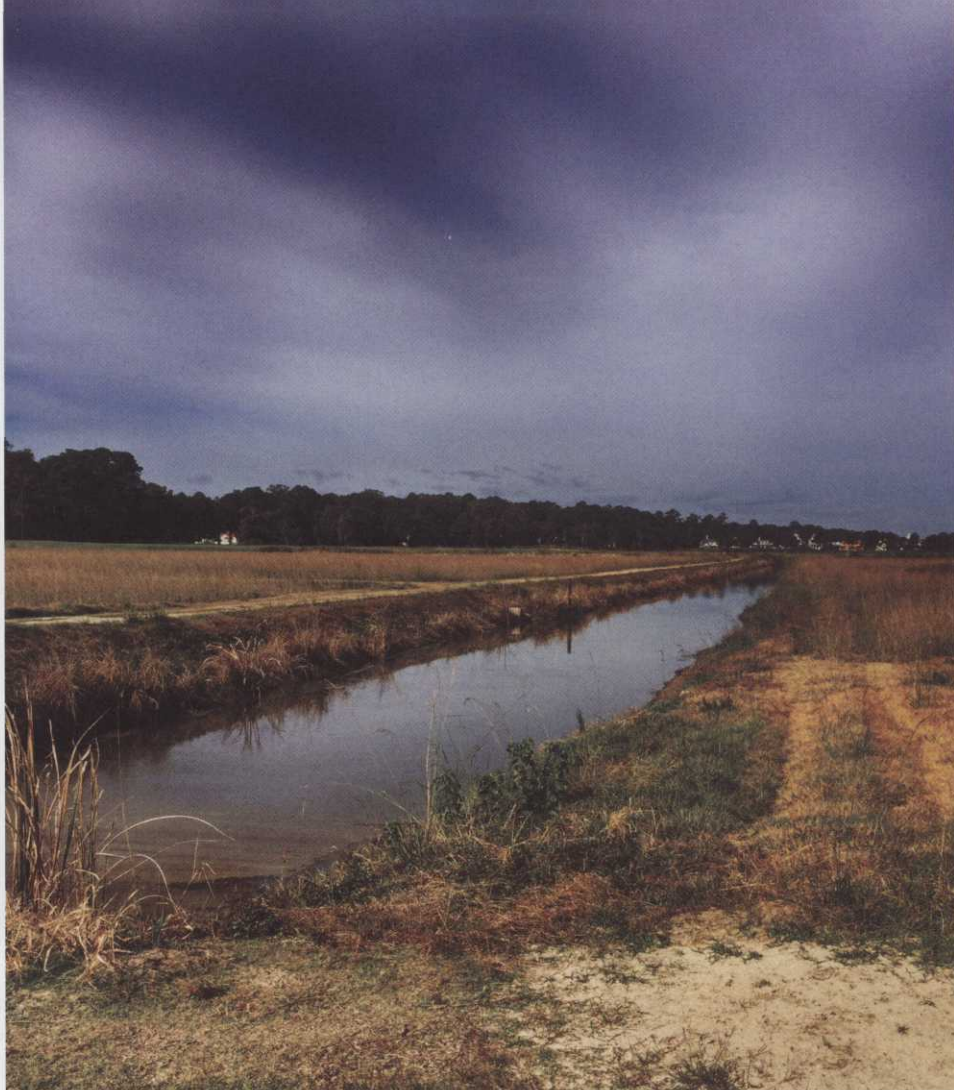
Although it lacked the glamour of other parts of the project, Caron and Thompson spent long hours on-site, watching the creation of the pump

system. Caron and Thompson reported progress to the membership, with Caron posting regular updates explaining construction specifics on The Ford Plantation's agronomy blog. The club also distributed a publication to members called "The Plantation Press," which provided progress reports and photos of the work.

To avoid distractions, Dye requested the club control the volume of visitors to the site. Caron, Thompson and golf professionals conducted monthly member tours. The more dirt shifting members saw, the more fascinated they became in the nuances of the project. "I thought they would get tired of it over time," general manager Nick Cassala says. "What was amazing was that they actually just got more excited about it."

The majority of the club's members only live on the property in the fall and winter, but the club had to find ways to satisfy entertainment needs during construction. The club developed a program designed to reintroduce members to Ford Plantation's other outdoor options such as fishing, hiking, shooting, biking, horseback riding and kayaking.

But the club had members who wanted to golf. The professional staff made arrangements with other clubs to conduct events such as ladies day and men's blitzes at other clubs. Thompson says he played Savannah-area public courses he didn't know existed. Wickes says some members belonged to other clubs, including Chechessee Creek Club and Secession Golf Club in nearby



South Carolina, and they used those clubs more than in previous years. The initial inconvenience bothered some members.

"The downside of that was that it took a whole day to play golf instead of half-a-day," Wickes says. "When the renovation started, they literally just came in and bulldozed everything to begin with. It ripped the place apart. People were really unhappy." Attitudes started changing when sod trucks arrived in May. "I happened to be here when the first sod truck came in and I took a picture of it on my phone," Wickes adds. "When the grass started to appear, people finally started to think that it was going to happen. Your sort of don't believe it until you see the sod."

'A NEW GOLF COURSE'

Crews brought a bunch of sod. And pipe. And wire. It evoked memories of the massive construction projects of the 1990s. A year of work left The Ford Plantation with 1.7 million square feet of Celebration Bermudagrass sod, 29.5 miles of drainage pipe, 28.6 miles of irrigation pipe, 280.5 miles of irrigation wire and 3,464 irrigation heads. Completing the project required moving 94,000 cubic yards of soil.

The statistics don't account for the changes made by Dye, who received a rare golf course architecture mulligan. Dye added 304 yards to the layout, stretching the back tees to 7,409 yards. He repositioned greens, tees and fairways and reduced the number of bunkers from 91 to 51, making the course easier to maintain and play.

Considering the cost and what was at stake, everybody involved in the project experienced angst. Plus, no master plan is safe once Dye roams a site. Liddy and MacCurrach's familiarity with Dye eased concerns surrounding Dye's spontaneous dirt-drawn alterations. A memorable change involved Dye moving the 10th green to a hidden piece of available land along Lake Clara.

"Everything was drawn in dirt," course superintendent Kyle Johnson says. "He would get up to a green and get on his hands and knees, wipe out a spot with his hand in it, and say, 'This would be the shape of the green and bunker.' Then, he would go to the next hole. The man saw

A powerfully ally

One of the anchors of The Ford Plantation's \$7.2 million golf course renovation says fully supporting a superintendent can help a club complete a major project.

"It's all about science," greens committee chairman Dr. Bill Thompson says. "You need to give your superintendent the tools that he needs so he can work. It's just like a surgeon. You have to have the tools to do the job properly."

Thompson cultivated a strong relationship with director of golf course maintenance Nelson Caron throughout a renovation process that lasted five years and included some initial opposition. Thompson worked as a liaison between Caron, who was hired in 2008, and the club's 260 members.

The backing of Thompson allowed Caron to openly discuss course's structural deficiencies during presentations to the membership. Frank assessments of the course and the strain it placed on Caron and his staff contributed to members passing the renovation project through a club vote.

"The greens chairman's job is to support your superintendent, get in between the superintendent and the members, and try to get everything you can from your members so he can do the job," Thompson says. "If you have a good superintendent that's well-trained and went to a good school, they will produce a tremendous product for you. That leads to more members and member satisfaction. It's just amazing. There are going to be a whole bunch of naysayers that want to kill the whole thing that don't have the guts to do it. That's where a greens chairman comes in. You have to get in there and help your superintendent. You can't expect him to get out there and do it by himself."

everything going from pure dirt to grass. Now, we know what he saw. When it was all dirt, it was hard to tell what he was looking at."

(FORD PLANTATION continues on page 50)

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ATTENTION TO DETAILS

After reading a recent article about the state of turf programs in academia, I thought more closely about what it takes for young people to make it in the turfgrass industry. While a sound education, a well-developed portfolio and an intense drive are essential components, I believe the attention paid to the details separates those who have it from those who never will.

As with all the articles I write, you have to be prepared for my straight forward opinion and take everything with a grain of salt. Just like in growing grass, there's a lot of ways to get a desired result or outcome. This just happens to be how I believe young people in the industry can reach their goals and how I prepare my students for a "potentially" successful career.

ALWAYS GIVE YOUR BEST

Sweating it out 70-plus hours per week during a grueling summer isn't always the easiest thing to do. As a young person, however, it's going to be part of the process. As with any job, there's a tremendous amount of hard work needed to reach the level of success that you set for yourself.

Giving your best isn't just about working hard for your employers. It's about always bringing your 'A' game in everything you do. This comes in many forms, including the emails you send to potential employers, the meticulous review of your résumé and cover letter to ensure there are no errors, or the level of effort on a class assignment turned in to a professor who may ultimately be asked to serve as a reference.

Getting to the top is not easy. You will probably be competing against

others hoping to end up at a similar spot. Competition is tremendous in the industry, but giving 100 percent will set you apart from mediocrity.

DON'T FORGET THOSE THAT HELPED

Networking is an invaluable aspect of reaching your goals. There's a reason for the phrase, "It's not about what you know, it's about who you know." While I don't really think this holds 100 percent true, there is definitely some merit in the cliché.

Going the extra mile to confirm that your former boss is OK with being listed as a reference, reaching out to the network around you on a regular basis or sending thank you notes to those who have gone out of their way to help are all excellent ways to stay connected. In fact, although almost a lost form of art, a hand-written thank you will have more impact than you may think. These connections will pay dividends in getting your foot in the door. Giving 100 percent in everything you do, however, will likely be what gets you the job.

REALIZE WHAT YOUR JOB WILL BE

I read student applications on a monthly basis, and many of the essays begin with something like, "I just love being outside and preparing the golf course for play." If this is why you're getting into this business, then I can probably save you thousands of dollars in education and heartache. If you make it to the top, this will likely be a small part of what you do.

Once you've reached the level you aspire to, the job often changes. The focus now becomes about building a team around you that does all of that for and with you.

As a superintendent, your life will

be more about paperwork, human resource management and politics than sitting on a mower or setting the day's pin locations. This doesn't mean you should be disconnected from the course, it just means your responsibilities will change.

ONLY A SELECT FEW WILL MAKE IT

If a young person listens and adheres to the advice above, they will receive a leadership position at some point because they will be among the elite.

Only a small percentage of everyone entering this industry has the work ethic, brain power and attention to detail needed to make it to the top in this industry. Some may be hard workers, others may be among the most intelligent. Those possessing both attributes combined with a meticulous eye for the detail will have the edge.

MAKE IT A FOCUS OF EVERYTHING YOU DO

The next time you're driving through the course, think about what real attention to the details means. Straighten the stakes and tighten the ropes. Pick up the debris or candy wrapper in the fairway. Edge the cart paths and around the irrigation heads. Move the benches and tee markers routinely to prevent turf decline.

Now do the same in all aspects of your career. Show up for work daily with a positive attitude and well-presented. Update your résumé to stand out and be error free. Reach out to leaders around you and thank them for their advice.

If you make this part of your daily routine and work habits, it will start to define who you are as a person and who you will be to a future employer. It's all in the details. **GCI**

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▲ The annual bluegrass weevil thrives on *Poa annua* surfaces thus its prevalence in the Mid-Atlantic. In recent years, the ABW's reach has extended west into Ohio and farther south into Virginia, West Virginia and the Carolinas.

▼ The European crane fly first appeared in North America along the St. Lawrence Seaway in and around Buffalo, Detroit and Ontario. The pest spread into the Pacific Northwest during the 1960s and has migrated to Central California.



By Rick Woelfel

Geographic stereotypes surrounding certain pests are eroding and causing problems in unlikely places.

WHAT DO WE HAVE HERE?

In some respects, a golf course is a war zone. Superintendents working to maintain healthy turf must battle powerful forces that wreak havoc if left unchecked.

Weather is an issue, but it is somewhat predictable and not an inherently destructive force. The twin issues of pests and turf disease are another matter entirely. Unfettered, they can devastate a golf facility.

Superintendents are experts at dealing with turf issues, but many have faced new challenges in recent years as pests migrate from one region of the country to another.

The annual bluegrass weevil has been the scourge of American golf course superintendents for decades. This pest thrives on *Poa annua*, which explains why it has been so prevalent in the

Mid-Atlantic, where *Poa* greens prevail.

In recent years, however, the ABW has been detected elsewhere, to the west in Ohio and farther south in Virginia, West Virginia and the Carolinas.

Tracy Mathis is the director of golf course operations at Lu Lu Country Club outside of Philadelphia. She took over the position in March, just as the ABW was making its appearance. Combating the pest was difficult this past spring due to a harsh winter in the Northeast and prolonged snow cover.

"We just didn't get any wintertill," Mathis says. "They were basically protected and insulated underneath the snow. Once the snow lifted, if you hadn't applied something already, you were going to be in trouble most of the summer and we've been dealing with them for that reason."

Prior to arriving at Lu Lu, Mathis spent nearly two decades working in the Carolinas, including nearly 14 years as the superintendent at Sapphire National Golf Club in Sapphire, N.C., in the western part of the state near the South Carolina border. She first encountered the pest during the last few years of her tenure at Sapphire.

"We just started seeing the ABW in the Carolinas probably five years ago," she says. "They've been dominant (in the Mid-Atlantic states) for many, many, many years, for decades in fact. They're pretty in tune up here with timing and using different products. They've always been more of a northern issue."

But with *Poa* greens becoming more prevalent in the South, the ABW is on the move. Rick Brandenburg is a turfgrass entomologist by profession. From his post at North Carolina

State University, he receives reports of the ABW moving through the South like an advancing enemy force.

"It's not an easy problem," he says. "It takes a lot of energy and thought to be effective at controlling it. And further to the south and in the Appalachian Mountains, where you continue to have cool-season turf, the environment is not only good for the turf, but it's good for the pest. It's kind of scary superintendents to death because they see the challenges superintendents further to the north have faced and all of a sudden it's down here and we really don't know yet what to expect out of it."

Another pest that has created issues for superintendents is the European crane fly, which first appeared in North America along the St. Lawrence Seaway in and around Buffalo, Detroit

and Ontario. In all likelihood, the pest arrived here via the ballast of European ships passing through the seaway.

It was first detected in British Columbia in the early 1960s and spread to Washington and Oregon. By the mid-1990s, it had migrated as far south as Central California. And it is still on the move, says Dr. Ben McGraw, an associate professor of turfgrass science at Penn State.

"There are two species," he says. "One is further dispersed than the other because of its ability to fly. The ability to fly greater distances has caused that species to show up in a lot of places. We confirmed for the first time in 2014 that it was in Utah. We think it's been there for a couple years."

The pest tends to thrive in moist, damp climates and not surprisingly has thrived in the Pacific Northwest. Dr. Gwen Stahnke of Washington State University is intimately familiar with it.

The larval stage stays in the ground, she says, and "feeds on the roots and crowns of the grass plants. In western Washington, where it doesn't normally freeze, that means they are feeding from September or October when they hatch from the eggs until May or June when they pupate (go into a cocoon in the ground) and emerge as adults in August or September to lay eggs and repeat the cycle."

Stahnke points out that the pest can be difficult to detect. "It wasn't until I started having reports of European crane fly larvae chewing around the edges of aerification holes on greens that it became any kind of problem for golf course superintendents," she says. "This happened in late November and early December when we had a

“To be effective, you’ve got to be proactive. If you see damage, you’ve lost the battle for that year.”

—Rick Brandenburg, North Carolina State University

warmer fall. Superintendents that hadn't dealt with crane fly before just had to get used to the life cycle and when to treat for the larvae. Many times they will have had the larvae present, but if the grass didn't get stressed, or it wasn't mowed at 1/8 inch, they wouldn't see the damage."

In a circumstance where a disease or pest is new to a particular region, superintendents must spend time and effort learning what treatment protocols and/or products are most effective. And more often than not they need to find answers quickly to deal with an existing issue.

That's where someone like Dr. Jim Kerns comes in. Kerns is an assistant professor in the department of plant pathology at North Carolina State University, his alma mater and home to the North Carolina State Turf Diagnostic Lab.

In recent years, many superintendents in his part of the country have converted their putting surfaces from creeping bentgrass to ultradwarf Bermudagrass, which features shorter rhizomes and is intended to produce faster, bentgrass-type putting speeds.

Ultradwarf Bermuda was first introduced in the South roughly a decade ago and has become much more prevalent in the past two to three years. But it has been susceptible to certain diseases.

"Because Bermudagrass grows better in the summer (ultradwarf greens) were pushed

hard as being disease resistant," Kerns says. "As it turns out, they're not."

In fact, ultradwarf putting surfaces have proven vulnerable to such maladies as pythium blight, leaf spot, cream leaf blight, and leaf and sheath blight, which is also known in some circles as mini-ring.

"While some of these diseases are not necessarily new, they're diseases these superintendents haven't really faced," Kerns says, "so I've been doing quite a bit of work on characterizing these diseases. The beauty of it is most of them have been fairly easy to manage, but they're very challenging to diagnose. The dogma they knew before does not exist when you're talking about a new grass."

All turf diseases mentioned above are treatable with fungicides. But superintendents confronting them for the first time need to find the right product for a given situation or a particular set of circumstances. And that's not always easy.

"They really have a hard time keeping them all straight," Kerns says. "And many times they may not be applying the right product for the right situation. That's why, in my opinion, if you see something new, the first step is to call the local university. They may have seen this, but, more important, they'll know very quickly what fungicide or what insecticide or what herbicide might be most effective, even though they may not have much experience with

that weed or insect or fungus."

Sometimes it's not a question of what to apply, but when to apply it. Brandenburg says that when confronting a pest such as the ABW it's essential that superintendents take an aggressive approach.

"To be effective, you've got to be proactive," he says. "If you see damage, you've lost the battle for that year. You can go in and do some things to keep the situation from getting much worse, but you've got what you've got ... It's not going to recover during the middle of the summer."

Sometimes there are weather-related circumstances beyond a superintendent's control. Mathis, like many of her peers in the East, was forced to delay treating for the ABW this past spring because the ground was covered with snow until late March. By the time she could treat for the pest, she had, in Brandenburg's words, "lost the battle" for the season.

"A lot of people got caught off guard as to their spring applications, myself included," she says. "To me it was too early to apply it, but then it looked like it was a little too late. So we were behind the eight-ball so to speak trying to control it."

Mathis says it's important for superintendents to have the financial and personnel resources on hand to deal with an unexpected pest. "It's not something that's going to go away," she says. "It's something you have to treat, much as if you were treating dollar spot or trying to protect against pythium diseases. It's something you have to incorporate into your budget." **GCI**

Rick Woelfel is a Philadelphia-based writer and frequent GCI contributor.

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ACCESSORIES TO SUCCESS

When considering a new irrigation system installation or renovation, everyone concentrates on what we in the trade call the “hard” goods – sprinklers, controllers, weather stations, remotes controls and electric valves. This is otherwise known as the decision between Hunter, Rain Bird, Toro or any other golf irrigation equipment manufacturer.

Everything else, and the list is long, is considered accessory items. On many irrigation system designs, considerable time and effort is spent on whose hard goods to specify or purchase, respectively. In most instances, the decision of what accessory-item manufacturer to use is not as much of a consideration by either the designer or the superintendent.

We all know sprinklers and controls are important, but if you make poor decisions on the quality of the accessory items, the water and/or the control signal may never get to the sprinkler. In the end, your new system is a maintenance nightmare.

Accessory items include not only pipe, fittings and isolation valves, but also air-release valves, wire and wire connectors, grounding equipment, swing joints, quick-coupling valves and valve boxes. Your system's longevity and how much maintenance it requires is directly related to the quality of these accessory items. For example, cheap foreign-made gate valves do not last very long because the handles or stems break off and they don't close all the way over time. Wire connectors can be UL Listed

for direct burial or just a nut with some unknown goop in them. In addition, they need to be properly sized, have strain relief, completely protect the wires from water and meet the requirements of the National Electric Code. And most manufacturers make valve boxes in various grades – one much less expensive and much weaker than

ratings and by many manufacturers all of which have track records, both good and bad. Most distributors and designers have a good idea what manufacturers have had issues and which have not, and the pipe should be specified and approved accordingly. The fittings need to be specified properly to match the pipe being used. This has become

“We all know sprinklers and controls are important, but if you make poor decisions on the quality of the accessory items, the water and/or the control signal may never get to the sprinkler.”

the other. Make sure you have the stronger box.

Fittings on a golf course irrigation system can be varied with many different types of fittings and materials used on the same golf course irrigation system. There are many choices. Where do you use PVC-gasketed, glued, schedule 40 or schedule 80? Where do you use ductile iron and for what size pipe and what type fitting? Once you have decided on the type, what manufacturer or manufacturers are acceptable? Just like sprinklers and controls, be specific about what manufacturers are allowable and on private proposal/bids. Public projects cannot specifically exclude any manufacturer by name and any specific manufacturer or model named will have to be followed by “approved equal” or “equal.”

Pipe is probably the most important non hard-good item to properly specify. Pipe is manufactured at different pressure

even more important with the use of HDPE pipe. HDPE pipe is manufactured in two different plastic compounds and at many different pressure ratings. The pressure rating for one compound is different than that of the other, so pay attention. There are also specific rules and standards for matching different pressure-rated fittings and pipe within HDPE systems.

If you want a low-maintenance, long-lasting irrigation system, then concern yourself with the quality of all the materials, not just the sprinklers, controls and other hard goods when you purchase your system.

Make sure all irrigation equipment is specified and, if necessary, do your own research and talk to other courses. After spending all of that money, the last thing you want is irrigation system problems and for members to see holes out on the golf course after the work should have been completed. **GCI**

PYTHED OFF!

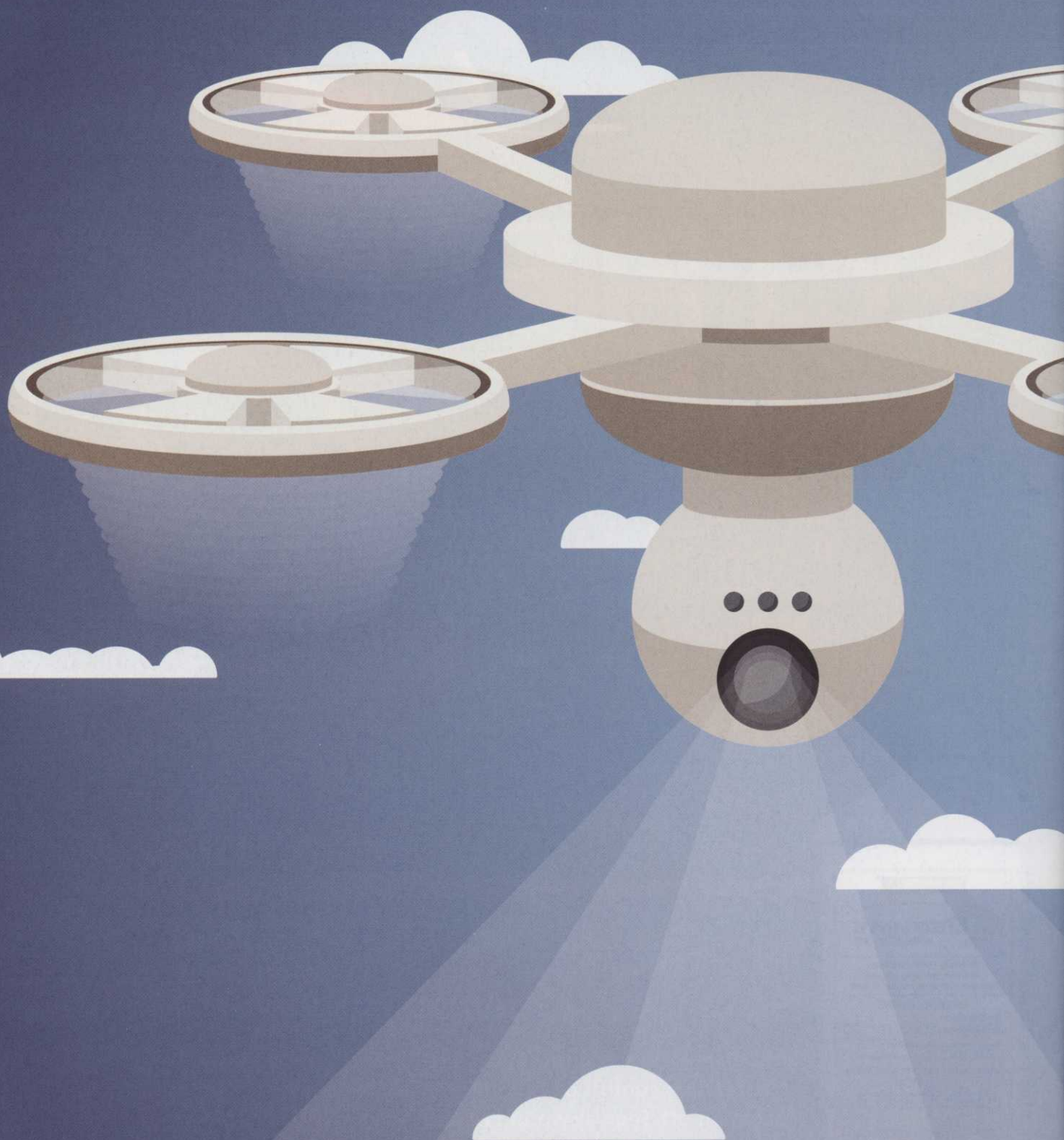


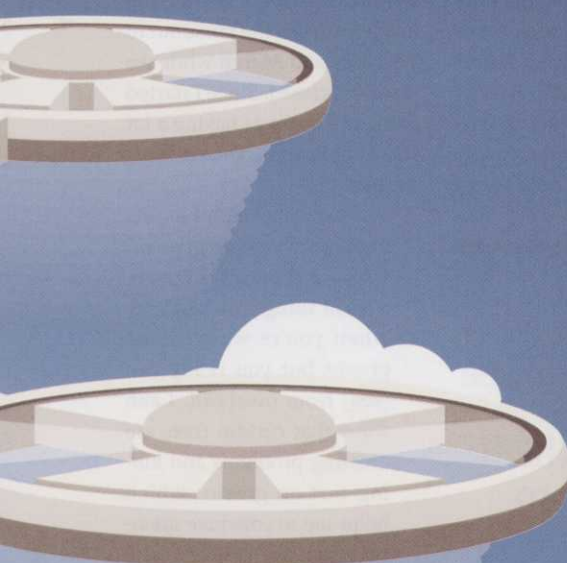
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Eyes in the sky

Unlike their military conscripted cousins, quadcopters provide superintendents with an eagle's eye view of their courses to assist with turf management.

BY JIM DUNLAP

"IT'S A BIRD, IT'S A PLANE, NO, IT'S OUR SUPER, MAN."

That dialogue could be taking place on a slowly growing number of golf courses where superintendents are taking to the skies by proxy with the aid of remote-controlled quadcopters, more familiarly but also more controversially known as drones. As the technology continues to improve, the uses these fascinating devices can be put to on a golf course are limited only by the imagination of the course superintendent. Well, there are a couple of other small considerations, namely the initial cost and what figure to be a growing number of pesky regulations regulating use of the devices, but those are not insurmountable in many cases.

Nearly every superintendent and researcher interviewed had a specific application in mind for their drone when they purchased it. However, after gaining a better idea of what the devices can do, most users have already figured out other ways to use them to help with course maintenance issues. Those range from discovery of turf and irrigation problems or patterns that are harder to detect at ground level to course flyover photography for use in club marketing materials or websites.

Rick Tegtmeier, director of grounds at the Des Moines Country Club in Iowa, experienced his “Aha!” moment when he saw a video posted on the website of California Golf Club of San Francisco superintendent Thomas Bastis. The video showed some of the ways Bastis was putting his DJI Phantom II drone to work at his course. Tegtmeier immediately realized that he had the perfect justification for purchasing a similar device. His club, which will host the 2017 Solheim Cup competition, was in the early stages of a redesign/renovation of its 36 holes, doing nine holes a year. That added up to a lot of site visits by Indiana-based golf course architect Tim Liddy, a Pete Dye Design senior associate who is spearheading the design and construction work on the two Pete Dye-designed layouts.

“We do flyovers of the golf course and then put together a movie of the work as it progresses with both the ground view and the aerial view, and upload it to our blog page,” Tegtmeier says. “That way, our architect in Indiana can

see what we’re doing and make suggestions or changes without having to be here. That’s the main reason I purchased (the drone), but it also enables us to see wear patterns from carts on the course. I thought we could also use it

from 6 feet above it, it’s hard to see how the various plots rank and evaluate each product to see which is working best,” Bastis says. “It’s a lot easier to see from the air. There are lots of other uses, too. Is there a problem of

“When you’re walking the course and looking at the turf from six feet above it, it’s hard to see how the various plots rank and evaluate each product to see which is working best. It’s a lot easier to see from the air.”

—Thomas Bastis, California Golf Club of San Francisco

to see irrigation stresses, but it rained all summer, so that wasn’t an issue.”

Bastis, whose video ignited Tegtmeier’s interest, got his own inspiration from a YouTube video of a surfing contest taken by a drone above the Steamers Lane surf break in Santa Cruz, Calif.

“When I saw that, I said, ‘That’s ridiculous, it would be awesome on a golf course,’” Bastis says. “I had a little slush money in the budget from selling a couple of pieces of equipment, so I bought one.”

Bastis, who started with the DJI Phantom I model and later upgraded to the Phantom II, uses his drone for a variety of tasks. Bastis and his staff maintain as many as 48 different plots of turf for research on the California Golf Club of San Francisco property, and the Phantom gives them a better perspective for judging which ones are doing the best.

“When you’re walking the course and looking at the turf

patterning with your irrigation system? How far did the cattails move in the ponds from year to year? Is your fertilizer evenly distributed? How’s the roof on the clubhouse holding up? You can find out all those things with a drone.”

In addition to research applications, Bastis uses the Phantom to take pictures of various issues on the course or various projects his crew is working on to share with the club’s general manager. “My boss appreciates it,” Bastis says with a laugh, “because this way he doesn’t have to look at all those graphs and numbers, he can see a picture of what we’re doing.”

Adam Garr, superintendent at Plum Hollow Country Club in Southfield, Mich., had also seen some drone views incorporated on other club websites and superintendent blogs, and felt it was time to catch up.

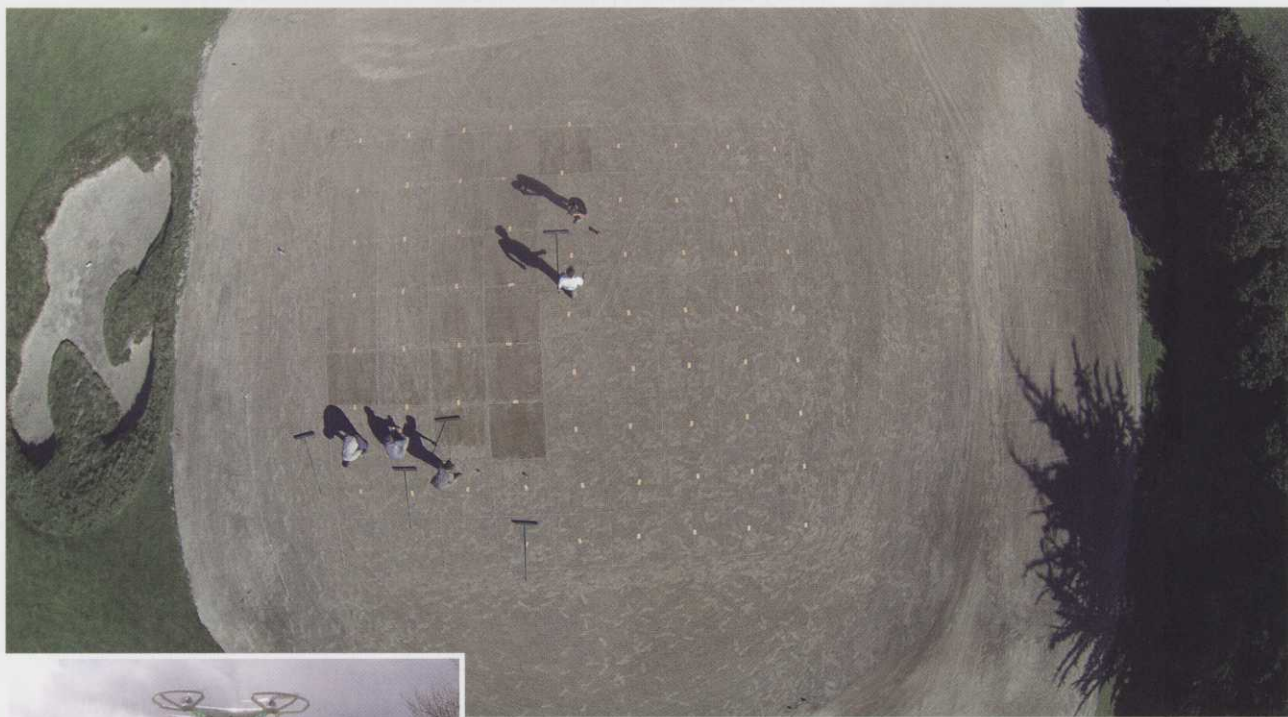
“I originally wanted to add spice to my videos because I was a little jealous of some of the things I was seeing in other

places,” Garr admits. “I got a DJI Phantom I last winter and kind of worked the kinks out in February and March while we were still closed. Since I started using it, I see it as having a lot more applications than making movies.

“It’s really helpful in seeing shade issues on greens,” Garr continues. “There are a lot of things you can’t see when you’re walking the greens but you really can (see) from overhead. I can show that certain trees are creating problems and killing turf on greens, which helps me to convince members that we need to take some of the problem trees out. You can also look at winterkill aspects and see how much of a problem it was. We take aeriels of all the greens to show to the greens committee and the board. Another thing I use it for is after a heavy rain, I’ll send it up and take pictures of the course and the wet spots. That way when members show up and want to take carts out, I can tweet out the pictures or put ‘em on my blog and it gets people off my back.”

Golf course superintendents are not the only ones using drones to monitor turf conditions. The Turf and Landscapes Research Center at Cornell University in Ithaca, N.Y., documents virtually all of its research with a Phantom II, according to field supervisor Brett Welch.

“We can change the lens angle, record in full HD, and the camera is really stable in the air,” Welch says. “The pictures are incredibly clear. We use it to evaluate equipment, record chemical treatment studies, look at disease pressure.



There's really kind of no limit on how you can use (drones)."

All of the people we talked with in the golf and turf industries are using the DJI Phantom quadcopter models, either the Phantom I or the more advanced Phantom II models, although there are numerous other models and types of similar devices on the market, whether they're called quadcopters, drones or "recreational hobbycraft." Prices vary, but the Phantom I typically runs just under \$500, while the more versatile Phantom II is around \$1,500. The GoPro camera mounted on the bottom of the device is extra. Once the device is purchased, the only additional expense is batteries. It may be worth pointing out that several of

Left: A drone flies above a fairway at Plum Hollow Country Club in Southfield, Mich.; Top and right: California Golf Club of San Francisco superintendent Thomas Bastis has used a drone to examine trials involving multiple bentgrass varieties and for chemical efficacy evaluations.

the superintendents we talked with felt that they might have jumped at the less expensive Phantom I model prematurely, and that the additional features and technology of the Phantom II would have been a better fit for their needs, so it's probably a good idea to see if the basic model will work for you, or if the Phantom II is a better fit.

While the capabilities of "drones" vary greatly, as Taliban, Al-Qaeda and now ISIS fighters have discovered, the

Phantom models used by the superintendents and researchers we talked with typically fly up to 20 mph and are controlled by hand-held remotes with joysticks. While everyone we talked with admitted to having crashed the devices or stuck them in a tree from time to time, they all reported that the Phantoms lived to fly another day, which will be good news for superintendents just earning their drone-flying wings.

The increasing popularity of

the devices is bound to create a whole new field of laws, regulations and lawsuits. During a recent report by "Entertainment Tonight" on the use of drones by members of the paparazzi to covertly film celebrities, the show cited a statistic that by 2020, there would be as many as 30,000 drones aloft in the U.S. Although "ET" may not be the most authoritative source, the number is a testament to

(DRONE continues on page 47)



Henry DeLozier is a principal in the Global Golf Advisors consultancy. DeLozier joined Global Golf Advisors in 2008 after nine years as the vice president of golf for Pulte Homes. He is a past president of the National Golf Course Owners Association's board of directors and serves on the PGA of America's Employers Advisory Council.

STRATEGIZING FOR GROWTH

For a golf segment shaking off the effects of a deep recession, creating growth is a top priority. But many club owners and managers don't know where to start, often confusing tactics with strategies. Before launching a bona fide strategic planning process, the well-intentioned souls are talking tactics, such as senior discounts, Fling Golf and \$5 pitchers of beer.

Strategy is the game plan that precedes the activity. Where it doesn't, owners and managers are left with a disconnected set of actions that may do little to accomplish their key objectives. Here are some suggestions to jump-start strategic thinking and the strategic planning process:

KNOW YOUR MARKET

Develop a thorough understanding of the demographic and psychographic needs and expectations of customers, members and prospects. By researching your market to identify people whose profiles match your existing customer profile – or the ones you would like to add to your target list – you can market more cost-effectively.

Next, create a comprehensive communications plan that develops and maintains regular and meaningful communication with the targeted market segments. Many clubs develop great messages and interesting programs and fall short of communicating with the frequency and reinforcement that “sticks.” The most effective clubs use multiple media – postcards, letters, emails, social media, video and photography – delivered regularly and with a consistent message.

APPEAL TO UNDERSERVED NEEDS

Women and their families represent

underserved segments for most clubs. Ask the women of your club what programs they want. Invite them to offer ideas and put their suggestions into action. You will gain favor with current members and begin to attract new ones when your club develops a reputation as a safe haven for children and a hub for family activities.

“When members see a trip to the club as something that is easy to add to their routine, they'll come more often.”

Busy professionals recognize the importance of recreational activity and a healthy lifestyle in the mix of their overall well-being. Integrate sports, fitness and training programs with quiet places that are equipped for business use with video conferencing capability and secure online access. When members see a trip to the club as something that is easy to add to their routine, they'll come more often.

EXPAND THE VALUE PROPOSITION

Many clubs continue to offer the same programs they did when members first joined. We are a society looking for the new and improved. When you add new programs that help your members or golfing customers better connect with other members and golfers, you have expanded your value proposition. And if the recession taught us anything, it's that people pay for value – and not much else.

So make it easy for members and customers to have a quick answer to

the question, “So what's new around the club or course?” Is it FootGolf, Nordic walking, oversized cups on the greens or a fire pit on the patio, where members and their guests can gather to socialize? At some clubs, it is off-site special interest travel – for wine tours, continuing education and historic or entertainment events.

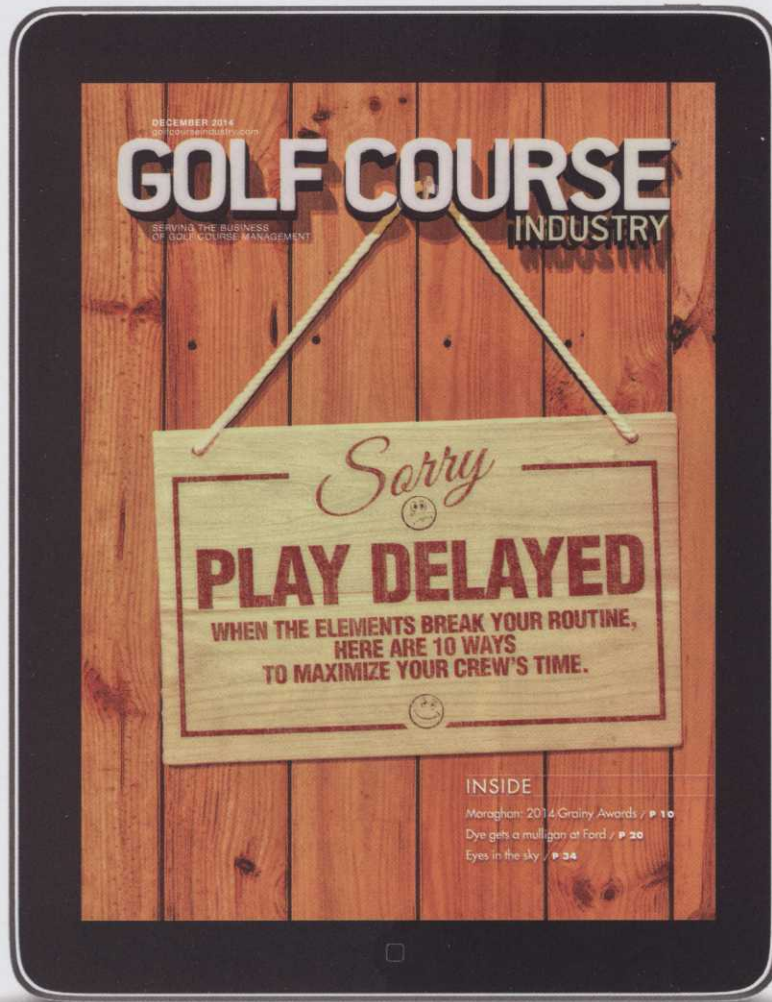
But how do you know what will create buzz among your customers and members? You really won't – until you give something a try. Find people who are interested or enthusiastic about an activity and let them help you launch a trial program. There's value simply in trying something different, especially at facilities where tradition (read: the same old thing) rules. Not all programs will attract interest and support; all that means is that you must be willing to keep trying.

DIVERSIFY

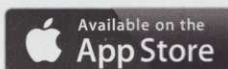
Most clubs with established market segments need new energy, ideas and members. Look around the community you serve. It probably doesn't look like it did 10 or 20 years ago. But if your club does – if it's still trying to survive by serving the same people – that may be its biggest problem. When you make diversification a strategic goal, you create a pipeline for increased inquiries, the lead list grows, friends begin recruiting their friends and membership begins to accelerate again.

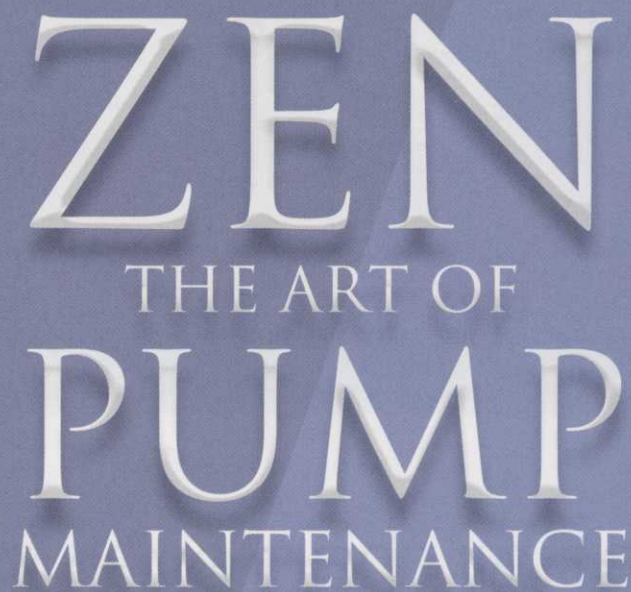
The key to a successful strategic plan is the careful understanding of the destination. What do you want for your club members? Great strategy requires great understanding of the methods by which growth is possible. **GCI**

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ZEN

THE ART OF

PUMP

MAINTENANCE

PREVENTATIVE MEASURES STEM FROM THE SIMPLE
ART OF OBSERVATION, EXPERTS SAY, WHICH CAN CUT
COSTLY PUMP STATION REPAIRS.

BY ROB THOMAS

One are the days of “If it ain’t broke, don’t fix it.” Superintendents are taking a more proactive approach in maintaining the equipment that is the lifeblood of their livelihood. For example, a simple issue with an irrigation pump and playing conditions can quickly deteriorate – leading to a landslide of negative possibilities.

For starters, locating an authorized service provider is paramount in the continued health of your irrigation pump, says H. Rex Hansen P.E., western regional sales manager for Rain Bird-Golf Division.

“The best thing a superintendent can do is to connect with a qualified ASP who can assist with annual check-ups, diagnostics and preventive maintenance,” Hansen says. “A good ASP will have experience with the pump station at your course and historical records of past maintenance provided.”

Additionally, in colder climates, superintendents will need to deal with seasonal winterization and spring start-up. “The water in all pressure transducer tubes should be drained and the pressure transducers should be removed and stored for the winter,” he adds. “In the spring, use the (Variable Frequency Drives) in manual mode to fill your mainline slowly and avoid pressure spikes. This will help extend the life of your irrigation system as well as your pump station.”

Regardless of location, in-season attention goes a long way toward maintaining a healthy system.

"During the season, it is advisable for the superintendent to regularly visit the pump house while the system is on and pressurized," Hansen says. "Use all of your senses to survey the conditions. Is the (pump motor) cycling too often? You may have leaks in your mainline. Is there evidence of water on the skid? The packing may need to be adjusted. Do the motors make unusual noises? The bearings

might be worn or the system may be out of balance. This isn't a comprehensive list, but it highlights the importance of regular pump station visits."

A routine preventative maintenance program should be developed and preferably include a checklist, says Tom Hoesly, technical operations manager for Pump Service Network, a division of Watertronics.

"The check list should include areas to record vital information such as power, performance, physical inspection, electrical inspection and

test data," Hoesly says. "Comparison checks of the data will help in determining if the station may be showing signs of performance issues or if the station has issues and to what extent."

A full preventative maintenance check should be done at least twice a year, he adds.

Other components may need maintenance based on experience, Hoesly says. "Pressure relief valve and filter maintenance will depend on water quality and other factors, and may even change based on the time of year," he says. "Algae blooms have a definite influence on the frequency of maintenance needed."

Safety must be observed, first and foremost, when doing maintenance of any kind, Hoesly stresses. "A superintendent should develop safety procedures and make sure they are followed," he says. "Safety equipment should be easily available and in good condition. Experienced service providers should be used on everything but the most basic tasks."

And, like Hansen, Hoesly places great importance on regular in-season visits to the pump house.

"At least once a week someone should spend time in the pump house listening and observing the pump station running," he says. "Listen for odd noises, vibrations, running water, and be aware of different odors than normal."

Wally Dowe, superintendent and director of golf course maintenance at The Lodge at

Ventana Canyon in Tucson, Ariz., has three Rain Bird pump stations. Twice a year he schedules a visit from Desert Pump Tek to perform preventative maintenance, which includes: cleaning filters, changing oil, checking all electrical cabinets for any loose connections or wiring issues, checking flow on all pumps to see if pumping capacity is declining, checking packings and replacing as needed, checking bonnets on the clay valve, replacing diaphragms in the pressure regulator valves, taking amps readings, checking vibrations on the pump motors, and checking programming to ensure there are no changes.

Unusual smells and atypical noises can often be indicators of larger problems, making periodic visits to the pump house even more important.

Visual and/or audio inspection are important weapons in Dowe's arsenal. He is looking for excessive vibration on the motors, a decline in pumping capacity of the pumps and ensuring there is a balance of hours on the motors.

"(I) try to keep motor hours balanced so one motor does not get all the hours," he says.

All parts are not created equal, just as different systems require particular attention. While there are certain constants, something may need to be proactively replaced and/or upgraded on one pump, but not another.

"Packing and seals should be checked regularly," Hansen says. "On vertical turbine pumps, whenever the motor



Making adjustments to control system software and scheduling regular visits with a qualified technician are among the ways to keep a pump station working properly.

is pulled for servicing, it is a good idea to pull the pump too. Check the strainer basket for clogging and check for obvious signs of pump wear. Check out the deck and skid; prep and repaint any areas where corrosion is starting."

Regardless of wear, Dowe proactively replaces diaphragms in the pressure regulator valves, which doesn't allow them to deteriorate and negatively affect performance.

In addition to mechanical seals, motor oil, filter screens, stuffing boxes, and any other items that have a limited life expectancy should be replaced before the need is obvious, Hoesly says.

"Motor and pump control systems need to be upgraded before they fail," he says. "Technical advances in PLC's and other electrical components make original parts obsolete in 8-10 years."

Unfortunately, what may be obvious to one superintendent, is often overlooked by another. It's not always about the system, itself.

"A clean and well-lit pump house can make a world of difference," Hansen says. "Replace burned out light bulbs, remove cobwebs, repair any holes that would allow critters to enter the pump house. Make sure the door fully closes and can be locked."

"I often uncover issues by running trending reports at the Central Control computer," he adds. "Needless to say, this only works if the communication between the pump house and the superintendent's office is in working order."

Another area to check is the inlet pipe system, Hansen says. Is the box screen clogged? Is the inlet pipe crushed?



YEAS AND NAYS

H. Rex Hansen P.E., western regional sales manager for Rain Bird-Golf Division, provided a list of common do's and don'ts when engaging in pump system preventative maintenance:

- Do contract with a qualified ASP;
- Do visit the pump station regularly;
- Do run reports regularly (usage and trending);
- Don't ignore unusual sounds or smells; and
- Don't allow the pump station or pump house to become cluttered, dirty or in disrepair. It should always be clean and organized.

For Tom Hoesly, technical operations manager for Pump Service Network, a division of Watertronics, performing regular preventative maintenance on your pump station tops his list, followed by checking and tightening every electrical connection twice a year and comparing data from previous preventative maintenance inspections.

Cleaning the pump station regularly and observing the pump station running, using all your senses, once a week are important, as well.

Don't let pride get in the way of doing the job correctly. "Do not attempt to do anything unsafe or that you have not specifically been trained for," Hoesly says. "Ask for help when needed."

In Hoesly's experience, cleaning of pressure-relief valve components are often overlooked.

Preventative maintenance is good. However, preventative maintenance done wrong can be more harmful than helpful. Hansen rattled off some common mistakes superintendents often make when trying to be proactive.

"Over tightening the packing; a small amount of leakage around the seal is normal," he says. "Avoiding the pump house because it's overwhelming [and] ignoring pump motor cycling; it's more cost effective to fix mainline leaks than replacing motors."

The most common mistake superintendents make is in not contacting qualified technicians to perform main-

tenance when appropriate, Hoesly says. Likewise, preventative maintenance checklist data needs to be recorded and compared to previous reports so that trends can be found. "Is the pump still producing the same amount of flow? Is the voltage and amperage for each pump still the same? Are pressure transducers reading correctly?" he says.

Dowe has seen colleagues make crippling mistakes, such as skipping preventative maintenance service to save money, not cleaning filters regularly or simply not having a thorough preventative maintenance service scheduled on a regular basis.

System efficiency is not to be overlooked, Hansen points out. "Older stations may have less-efficient motors

than modern, high-efficiency or premium-efficiency motors," he says. "Also, as the pump turbine wears in normal usage, you will experience degradation of hydraulic efficiency. These two factors rob the course of electrical energy and expense."

"It's a good idea to have your authorized service provider conduct an efficiency audit to ensure you're not wasting money on electricity," Hansen adds. "The results of this audit can help the superintendent determine if it is time to replace the system, or at the very least, modify the flow management tables on his central control software." **GCI**

Rob Thomas is a Cleveland-based writer and frequent GCI contributor.



Monroe Miller retired after 36 years as superintendent at Blackhawk CC in Madison, Wis. He is a recipient of the 2004 USGA Green Section Award, the 2009 GCSAA Col. John Morley DSA Award, and is the only superintendent in the Wisconsin Golf Hall of Fame. Reach him at groots@charter.net.

WHY DO YOU RETIRE?

A few years back I asked a superintendent about my age, "Why did you retire?" I couldn't understand it. He was likely the best paid among us in the state, operated with a formidable budget and was employed by one of the finest private country clubs in the country.

His reply? "Because I can." A dozen years later, I can understand what he was saying.

I've been asked the same question plenty of times, most recently in an email from a GCI reader. He expressed frustration many superintendents feel – some insecurity about his employer and golf's future, an age that could keep him from making even a lateral move, and an inadequate retirement fund. Since I wasn't confronted with those specific problems when I hung up my cup cutter, he asked me, "Why did you retire?"

And golf course management requires a lot of energy. Frankly, I tired of getting to work at 5 a.m. every day, the only way I knew how to operate. Further, I had been working hard most of my life, a former farm kid who was up helping with milking and chores from the age of 10. Add in college and golf course work, Army service in Vietnam, and 36 years as a superintendent. No wonder I was tired!

Health can be an issue. In my case, it was skin cancer, high blood pressure and eyesight. For my wife, it was cancer. I absolutely did not want to crash and burn while I was working well into my 60s.

I often thought about BB King, who was a philosopher as much as a musician. His advice: "Hey everybody let's have some fun! You only live but once, and when you're dead, you're done. So let the good times roll!"

and all those photos into a story that will make a sizeable book. It will take a lot of time, but time is what I now have. I also have time to go to antique tractor shows, state fairs around the Midwest, Broadway plays once in a while, sports games, church and community activities, and read books. I'll stop there.

Of course, there is no sense in even thinking about retiring unless you are financially able. The amount of money you'll need is elusive and different for each of us, depending on what you want to do in retirement. Cheryl and I were careful spenders and good savers. My profession made owning a boat or a cabin "up north" difficult. I didn't really care for skiing, snowmobiling or hunting. Money we might have spent in these ways was put into the retirement sock. Once we owned our house and paid for three kids' undergraduate educations, our nest egg grew more quickly than even I would have thought possible. So when I was eligible for Medicare at 62, I retired.

I lucked out and was given a great part-time job (something I never even considered), and that job made our financial situation even better. I am giving that up at the end of the year, to devote full-time to retirement!

All in all, as I have age 70 in my sights, I couldn't be happier. A friend of mine, who is my age, told me recently he is becoming adept at doing very little . . . slowly! George Carlin, another modern day philosopher, saw life through a set of eyes more in line with what I feel and try to do when he said: "Life's journey is not to arrive at the grave safely in a well-preserved body, but rather to skid sideways, totally worn out, shouting 'Holy Sh*t . . . what a ride!'"

What more can I say than that? **GCI**

"I guess at some point you begin to realize you're on life's back nine. At the age of 60, with an expectation (and hope) of living until 90, you're on the 13th tee. An awareness of one's mortality really sets in at that age, and you start realizing you only have one life and a single chance to do all the things you want to do."

Where do I begin? I guess at some point you begin to realize you're on life's back nine. At the age of 60, with an expectation (and hope) of living until 90, you're on the 13th tee. An awareness of one's mortality really sets in at that age, and you start realizing you only have one life and a single chance to do all the things you want to do. It gets to be high time to get started on those things.

It's only natural that as you age, your energy level is likely to diminish.

What BB was really talking about to me was a bucket list. If you have one, at some point you have to get going on it. We love to travel, are completely taken with our six grandchildren and have 30 years of genealogical material to synthesize.

Retirement has allowed me to finally say I have visited all 50 states. We are ready to make our second trip to Europe to wrap up the research on both our families. Then comes the task of putting all that information

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For the Pros and the Joes

Silverado Resort and Spa's top turfhead Tim Geesey shares his formula for successfully balancing championship and everyday course conditions.

The redesigned North Course at Silverado Resort and Spa in Napa, Calif., hosted the PGA Tour's Frys.com Open in October.

Maintaining an experience that's as enjoyable for PGA pros as it is for average handicappers is a major challenge for championship golf courses. It's a balancing act we become quite familiar with at Silverado Resort and Spa (in Napa, Calif.). For the first time in nearly 30 years, the PGA returned to Silverado in October, capping a three-year renovation

project overseen by Johnny Miller that received high praise from both tour pros and resort guests.

Here are some insights that helped us successfully manage the process at Silverado:

ARCHITECT'S BUY-IN

We were lucky Johnny Miller, who oversaw the redesign process on Silverado's North Course, had a long history with the property, having

raised his family in a house on the 11th hole. He knows our membership just as well as he knows championship golf. He also spent more than 40 days on the property during the redesign process, with much of that time spent just watching how average golfers played the course. This level of commitment to creating a playing experience that works for golfers at every level is evident in the final product.

CONSISTENCY

Consistency is probably the number one requirement of players of all abilities; it creates the perception of "fairness," which is what all golfers want out of a layout. If you can create that, you'll be well on the way. For example, we faced somewhat of a unique challenge in that Napa is famous as a growing region, and this applies to grass, as well. Pretty much any seed that finds its way into the



Johnny Miller reduced the number of bunkers from 70 to 51 on the Silverado Resort and Spa North Course. The reduction cuts maintenance costs while keeping the course challenging for pros.

ground will grow. When we got here, there were at least five species of grass growing including kikuyu, which is extremely aggressive and plays much different than species more traditional to the region. Sustaining a monoculture – one dominant species of grass – was the biggest thing we had to address to create that consistent playing experience. We opted for a bluegrass/rye hybrid and very deliberately communicated the rationale for that decision to our stakeholders, whose

buy-in was essential. It takes a huge commitment financially, and it's not something you can waiver on or your hard work will quickly be undone, but the necessity of consistency was something that all parties recognized.

MOVE 'EM BACK AND FORWARD

Manipulating the length of the course – being able to both add and take length away – was a major part of the redesign. We added 22 new tees, and most expected 18 of them would

have been back or championship, as we looked towards hosting the PGA tour. But we actually added just as many forward tees as we did back, and those front ones see three or four times the traffic.

ADOPT A DIFFERENT BUNKER MENTALITY

Re-shaping and rethinking how bunkers are incorporated into the layout of the course was the biggest part of Johnny's redesign. There were a number of bunkers on the course

that were doubly punitive to bad shots but never came into play for low handicaps. So we actually eliminated bunkers, going from 70 to 51. There's obviously a cost associated with bunker maintenance so we'll save money long term, the course didn't get any easier for the pros, and the average golfer spends less time in the sand. It was a win-win-win, and I suspect it's a philosophy that a number of courses originally built in the '60s and '70s can benefit from.

CREATE BETTER GOLFERS

We spend just as much time thinking about creating better golfers as we do creating a better golf course. Through our junior programs, and especially through our senior instruction, we focus on physical fitness and nutrition alongside golf. It allows our members to play better golf as they age, and it builds a fitness foundation for our juniors that extends beyond golf into their other athletic pursuits. The overall effect is we're helping to build up our players to a point where their games are up to whatever challenge the course poses. **GCI**

Tim Geesey is director of golf operations at Silverado Resort and Spa in Napa, Calif.

(DRONE continued from page 37)

the fact that drones are relatively easy to operate.

There are, however, already plenty of regulations regarding their use, and superintendents should be aware of those before they send one aloft. There are typically restrictions on how high or how far they can fly,

how much they can weigh, and what specific uses they are put to. In many cases, those vary according to the drone user's proximity to the nearest airport. The Phantom II that Bastis uses at California Golf Club of San Francisco contains software that produces a tone

and won't allow the drone to exceed the prescribed altitude ceiling.

While Bastis was initially concerned that other members of the club staff or even club members might see the Phantom drone as a toy or something to play with, the de-

vice has proven so helpful that others are aware it's earning its keep and leave it alone. And, as Garr says, "It kind of started as a hobby, but now it's a tool." **GCI**

Jim Dunlap is an Encinitas, Calif.-based writer and frequent GCI contributor.



Travels With Terry

Globetrotting consulting agronomist Terry Buchen visits many golf courses annually with his digital camera in hand. He shares helpful ideas relating to maintenance equipment from the golf course superintendents he visits — as well as a few ideas of his own — with timely photos and captions that explore the changing world of golf course management.



Terry Buchen, CGCS, MG, is president of Golf Agronomy International. He's a 41-year, life member of the GCSAA. He can be reached at 757-561-7777 or terrybuchen@earthlink.net.

GOLF CLUB & FLAGSTICK GRAVEYARD

Used, long-abandoned and discarded golf clubs cut in half (and old flagsticks too with the ferrules removed) are being used successfully as “sod staples” at the Pitman Golf Course, owned and operated by the County of Gloucester in Mantua Township, N.J. They do a great job of holding the new sod in place while also greatly helping keep the golfers from walking on the new sod — and keeping mower operators from mowing the sod until it is mature. Golfers think this is a great idea. One golfer even commented, “So that’s what happened to my old 5 iron!” The old flagsticks are painted orange because they are also used in the wintertime to mark the parking lots to help let the snow plow operators know exactly where the edge of the pavement is. There was no cost involved and the labor time was only to cut them in half. Installing them is as quick as using traditional sod staples. Superintendent Scott Hellerman assistant superintendent Rick Benfield and groundskeeper George Griggs are very proud of this cost saving and recycling great idea.



TRIPLEX GREENS MOWER BRUSHES

This 2007 Toro GreensMaster 3150 Triplex Greens Mower is equipped with three old recycled top-dressing drag brushes (manufacturer unknown) that are used to lift any creeping bentgrass surface runners just prior to mowing during the past two growing seasons. The brushes are attached to each respective cutting unit frame with 1-inch square hollow tubing that is attached with ½-inch diameter nuts, bolts and lock washers. The brushes are bolted to the square tubing end with ¼-inch diameter nuts, bolts and lock washers with aluminum spacers. The brushes are held up in the transport position with a ¼-inch diameter nylon rope with an eye hook attached to the center brush with a quick disconnect hiker’s carabiner at the top-end that is attached in-between the dual headlights. All of the parts were in inventory except for the square tubing purchased at Home Depot for under \$25. The framework was built on and off over a two-day period. Acting superintendent Jeremy Weir and equipment manager Dan Gilbert at the Cherry Creek Golf Club in Shelby Township, Mich., modified the original design by Al Bradley, the equipment manager at their sister course, Shepherd’s Hollow Golf Club in Clarkston, Mich. **GCI**





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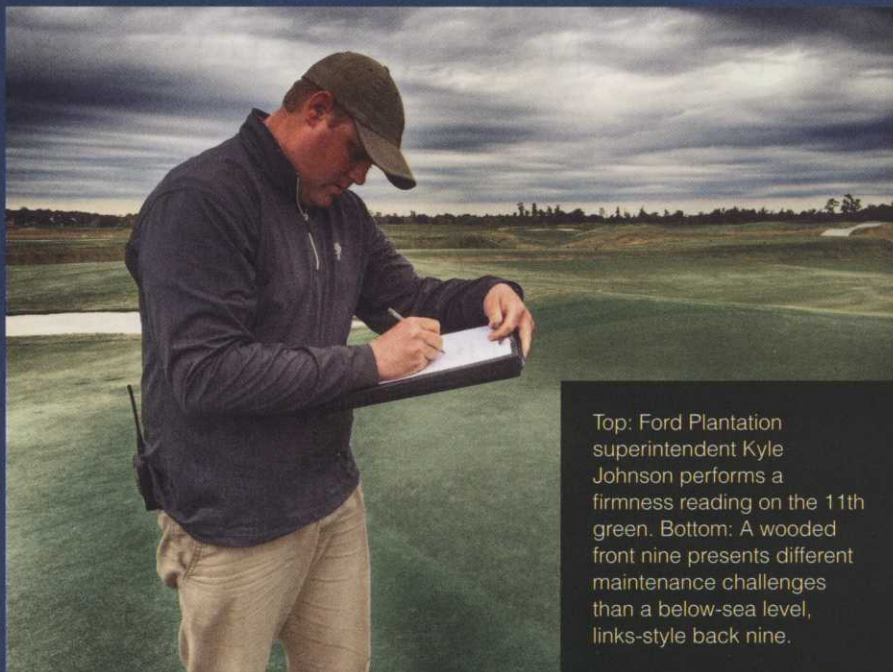
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(FORD PLANTATION continued from page 25)



Top: Ford Plantation superintendent Kyle Johnson performs a firmness reading on the 11th green. Bottom: A wooded front nine presents different maintenance challenges than a below-sea level, links-style back nine.



Four times the fun

The Ford Plantation's decision to install state-of-the-art infrastructure will allow the maintenance staff to provide a seasonal membership a different golf experience each year.

Director of golf course maintenance Nelson Caron says the renovated course is in the first year of a four-year agronomic plan. The course reopened Oct. 1 following a renovation that included the installation of 1.7 million square feet of Celebration Bermudagrass sod.

"The first year, the grow-in, we didn't do any overseeding," Caron says. "Next year we will do a wall-to-wall overseed, which will be 130 acres of perennial ryegrass. The next year we are going to do just our fairway cuts, so it will be a different golf course, no roughs. The following year we will do just roughs. Every year members come, they will get a different golf course. It's pretty neat."

The course receives less than 8,000 rounds per year, giving the maintenance staff ample time to alter the course before members make annual migrations to Georgia. Failing infrastructure prevented the course from supporting a strong overseeding program before the renovations, Caron says.

Asked about the construction process, MacCurrach says, "It was every bit as bad as we expected." The project had its last-minute curveballs, and Thompson says the first six greens were still in grow-in mode when the course reopened on Oct. 1. Seven original workers remained on the maintenance staff throughout the restoration. As the reopening approached, Johnson had to train more than a dozen new crew members.

The post-construction staff will perform different tasks than the pre-construction staff. Heavy rain has occurred since the reopening, and Caron says the revamped course has yet to experience a bunker washout. "Now it's about us learning Nelson's theories and practices," Johnson says. "It's a new golf course."

Caron envisions The Ford Plantation developing a reputation as a firm and fast course. The putting greens exceed speeds of 13 on the stimpmeter and members are noticing sudden increases in driving distances. Achieving desirable conditions required an investment. The roots of such investments extend beyond the soil and into arguably the most important places at clubs: meeting rooms.

What would have happened if a communication gaffe had killed the project? Or if members never grasped the value of a functioning golf course?

"I guess if we didn't do the whole thing, we would have done it piecemeal, a little here, a little there," Thompson says. "We would have never achieved the goals what the goals of the master plan were if we had done it like that." **GCI**

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MAKE IT A HABIT

I was fortunate to attend a very cool event earlier this month that got me thinking about the power of habit.

The meeting was the Turfhead Summit and it's the brainchild of Kevin Smith, the VP/director of agronomy at Bryan Park GC in Greensboro.

Kevin's Turfhead Summit started small a few years back with a simple concept: Let's get together and share ideas about the biggest turf management challenges in the region. No big fancy platform, no tabletop trade show displays, no jacket and tie required – just turf talk and solutions. It started small. This year there were close to 70 participants.

Not surprisingly, the biggest focus of the day was on ultradwarf Bermudagrass management. Keith Wood from Sedgefield CC in Greensboro summed up the discussion well: "We traded the stress and craziness of chemical management of bentgrass for the stress and craziness of cultural management of Bermuda... but the putting surfaces are consistently better, week after week, so it's worth it."

I could fill this entire issue with the technical discussion that went on about the various ways they rip the crap out of their Champion or Miniverde then bring it roaring back to life. In some ways, these guys are all learning on the fly, but thanks to the kind of information-sharing that Kevin fosters at his Summit they have plenty of expertise to draw on.

Outside of the ultradwarf focus, we also got to hear from the great Dan Dinelli of Northshore CC in Chicago about his experiences with composting and biocontrols, Clemson's Dr. Bert McCarty on trends he's seeing, Dr. Lane Tredway of Syngenta with an update on diseases and soil micro-

biology, John Jeffreys of Pinehurst No. 2 on what they learned from the U.S. Open, and last, but not least, Carolina legend, Bill Anderson.

Bill has transitioned from an amazing career as a super to become the agronomist for the Carolina Golf Association. His presentation focused on 18 non-agronomic things supers can do to succeed. It reminded me of Steven Covey's "Seven Habits of Highly Successful People." So, on the flight home, I considered which habits seem to matter most to the long-term success and happiness of the superintendents I've known over the years. Here's the short list of great habits I came up with:

Team building and talent development: Being a micromanager will make you and everyone around you crazy. Delegate, and let it go. Tell them the goal and let them learn how to do it. Sometimes leadership means pointing people in the right direction and then getting out of their way.

Cultivating critical relationships: I believe the days of silos within facilities are largely over, or at least they should be. You have to have good working relationships with your golf pro, club manager, general manager or anyone else in the food chain that matters to the success of your facility.

Collecting and using metrics: If you can't measure it, you can't manage it. Set up systems to institutionalize record-keeping and data management.

Planning: Follow the old saying, "Begin with the end in mind." What's the outcome you want for the project? What steps do you need to take to get there? What are the likely barriers and

how can you overcome them? Once you've answered those questions, build a backwards-facing timeline and execute it.

Curiosity: One of the things that always impresses me is going to an event like the Turfhead Summit and seeing guys in the golden years of their careers who show up, listen to every word and ask the most questions, because they are endlessly curious. Being curious means being unafraid to admit you don't know everything. Nobody knows everything!

Shameless self-promotion: Superintendents historically have been uncomfortable with the notion of tooting their own horns. Get over that. If you don't tell your story, who will? Document your successes and make sure the people who matter in your structure are aware of them.

Handling change: If I could pick one habit of highly successful superintendents, it would be the ability to embrace change. I'm guessing that very few of those guys who converted from bent to Bermuda were thrilled about blowing up perfectly good greens and starting over. Yet they did. Once a decision is made and change is happening, resistance is futile. Being "set in your ways" (or even being perceived that way) is a sure way to get run over by the steamroller of change.

Making a habit out of non-agronomic excellence is critical to success in today's environment. Sometimes that means ignoring your instincts – your tendency to react with emotion – and following habits that you've adopted and developed over time. Good habits make good careers and happier lives. **GCI**

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