

No. 16 at TPC Scottsdale's Stadium Course holds 20,000 spectators.



day's round. We were so saturated that we couldn't get back out there and play. We had eight inches of rain in August, including a three-inch bomb on the Sunday before the tournament week started."

In 2008 and 2009, Wood says he and his staff spent the winter installing French drains "in just about every landing area that was flat that didn't have very good surface drainage," sandcapping the drains on the fifth, sixth and eighth fairways. Eleven holes on the course have a creek running through them, some parts of which are silted over. But getting a permit to alter the creeks may be difficult. Instead, Wood says he noticed a pond on the course could be enlarged and dredged to handle some of the excess water. Plans are underway to make that adjustment.

Continued on page 24





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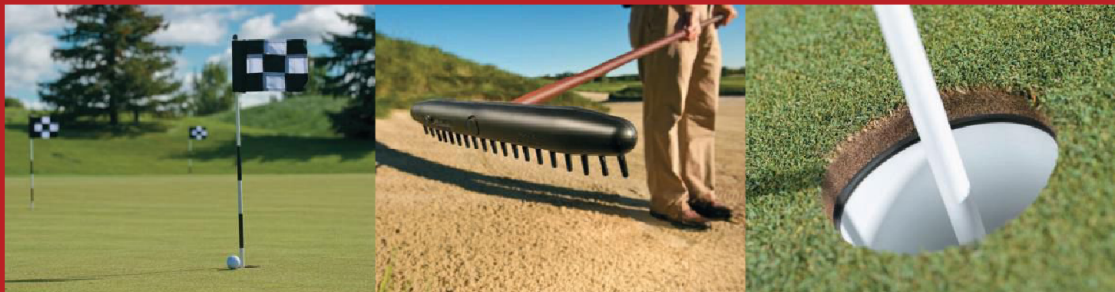
Wherever golf is played.



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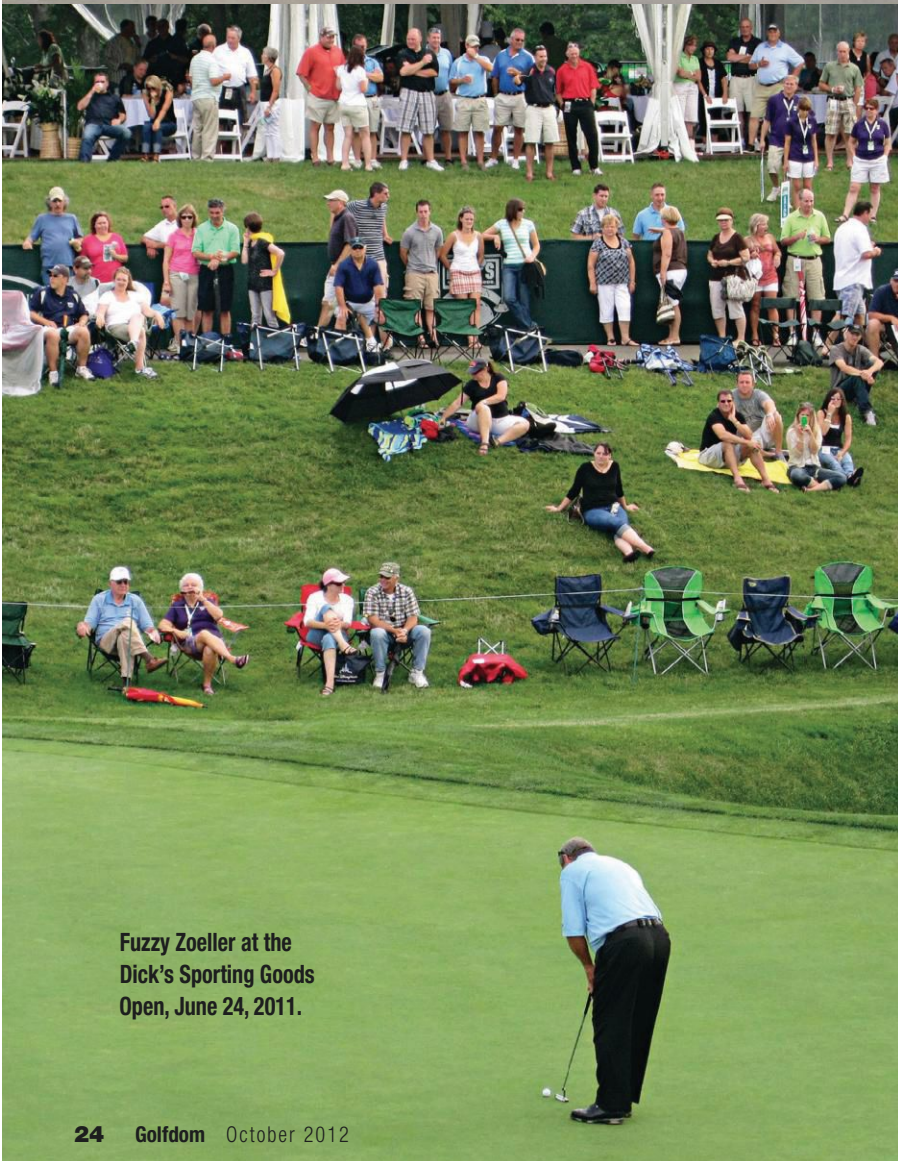
Having well maintained, proper golf course accessories is a crucial part of course conditions. They make an important and lasting impression on golfers and reinforce the course's (and your) reputation. Quality accessories from Par Aide can improve course aesthetics and playability while saving you time and money. Find out how we can make your accessories budget work harder than ever.



Pretty Major



A shot from the 2011 Booneville Eagles Charity Golf Tournament in Booneville, Missouri.



Fuzzy Zoeller at the Dick's Sporting Goods Open, June 24, 2011.

Continued from page 21

Turf choice

North Carolina is getting more hot and humid, Wood says. Hosting the Wyndham Championship on bentgrass greens in August was not going to give players the best putting quality.

“We are a Donald Ross course and we’re supposed to play firm and fast. In August, bentgrass is not firm and fast,” he says.

To keep the course tournament-ready, Wood had to limit rounds before the tournament so that the bentgrass greens could survive through the end of the summer. It was a burden on the membership. And still, every year by the end of the event, Wood says the bentgrass “greens were devastated, were pretty much dead.”

To address this problem, the choice was made to re-grass the greens and switch from cool-season bentgrass to a warm-season bermudagrass. The course was fumigated on May 14th and sprigged with Champion bermudagrass on May 28th. It was shut down during the grow-in, but members were given three days to play before the tournament.

When they saw course conditions, Wood says, “they were thrilled.”

In an interview after the first day

of the tournament, 2012 U.S. Open champ Webb Simpson told the media, “The greens are perfect. It’s the way the golf course is meant to be played. Quite frankly, it’s more enjoyable to play it. I think everybody is really pleased.”

Immediately following the tournament, Wood says the new greens were able to support 140 rounds of golf per day with “no issues with agronomics. The ball is still rolling good. If we’d done 140 rounds on bent, around the pins would have been dead.”

With the change in turf variety came a change in mowers. When the new greens were ready to mow, Wood switched to a John Deere 180SL.

“The angle that the bed knife breaks the grass is very aggressive. We’re able to have the mowers at a higher height of cut, which is healthier for the grass,” Wood says. “More leaf blade showing means more photosynthesis. We’re able to achieve a tighter surface because of the geometry of the mower.”

Overseed order

Turf selection, in the form of sod and overseed, is a consideration for Jeff Plotts, CGCS, Director of Golf Course Operations at TPC Scottsdale. The 36-hole facility’s Stadium Course is home to the Waste Management Phoenix Open, the PGA Tour’s most highly attended event. During the tournament week, an average of 500,000 spectators swarm the place.

The facility was built specifically to support such large galleries. Spectator mounds were built into the venue, just outside of the playing envelope. The course is also the site of the Tour’s only fully enclosed golf hole. Number 16 on the Stadium Course is often referred to as “The Coliseum.” The par-3 Coliseum is surrounded tee-to-green by skyboxes and grandstands that hold 20,000 spectators every day of the tournament. It is



“Today, with these tournaments, their biggest priority is a firm surface. Dry it out as far as your turfgrass will allow, trying to lower that threshold of the turfgrass.” — RICK SLATTERY, LOCUST HILLS CC

undoubtedly the loudest, rowdiest hole in golf. It also, by its very nature of being enclosed by large tents and scaffolding, has some major shade issues.

Although the tournament doesn’t start until the end of January, overseeding begins October 1st with an 80/20 mix of perennial rye to fine fescue. On the 16th hole, Plotts says, “we’ll overseed 80/20, and then come back with additional fine fescue to aid in more shade tolerance.”

The course is closed the second week of October to allow the seed to germinate. On October 28th, the scaffolding arrives at the course. The next day, construction on the grandstands that form The Coliseum begins, a full three months before the event. To cut down on the long shadows cast by the structures, Plotts requests that the roof and skirting of the skyboxes aren’t installed until the very last moment. A mirror is erected to capture sunlight and reflect it back onto the seedlings. Mowing is reduced to give the overseed a chance to grow in.

Even with so much prep, Plotts says he knows the 16th hole and other areas will

suffer turf damage. To be proactive, he orders his overseed from Seed Research of Oregon a full year in advance. West Coast Turf grows two acres of overseeded 419 bermudagrass for Plotts every year “to put back into the overseed footprint that we have out here to repair all the damage.” A quick recovery from the tournament is necessary, Plotts says, “because this is all going on in our high season when we have our highest dollar per round.”

Talk it through

Through the seven years that Plotts has worked the event, he says he’s learned that planning and communication are key to successfully hosting a tournament.

“It’s not a magic trick, good communication,” he says.

“It’s important to

understand that all of the parties have a big job and everybody’s job is important to them. Our job is to host the largest tournament in golf.”

Communication and planning for the next year’s tournament begins at 10 a.m. the Sunday morning of the final round. Representatives of all of the parties involved — vendors, volunteers and staff — sit down and take a SWOT (Strengths, Weaknesses, Opportunities and Threats) approach to the week that just ended.

Each of these areas is addressed before the final putt falls so that they can review what went well and what can be improved. Later in the day, Plotts meets with his staff to do the same, and meetings continue throughout the year.

Communication with people is one thing, but how about communication with equipment? Cameron Craig, Golf Operations Manager at Predator Ridge Resort in Vernon, B. C., Canada, has 166 golf carts at his facility equipped with the DSG Tag System, a fleet management and tracking system that allows for electronic communication with players in the carts.

Continued on page 26

Pretty Major

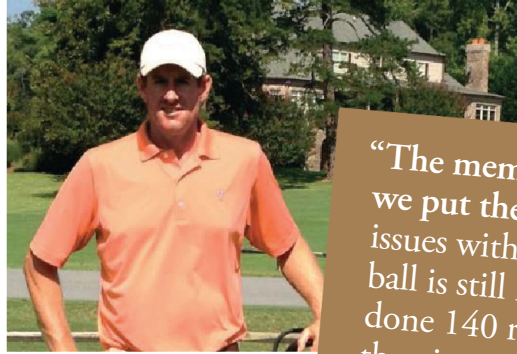
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This system is now available on EZ-Go golf carts and Cushman utility vehicles. The DSG TAG System can give a warning or shut down a cart if it ventures into restricted areas. The idea is to keep golfers out of lakes and ditches or to prevent them from driving the cart onto greens and approaches. The tracking system can also be installed on mowers and other equipment.

"TAG may be installed on any vehicle on the course," says Natasha Benes, product manager for DSG TAG Systems. "You can see its location at any time." Benes adds that you can also set up virtual restricted zones, cart path zones and more — and shut vehicles down before they get to those areas.

Craig hosts mainly corporate and member events at Predator Ridge. He says he uses the system to keep play inbounds and moving on tournament days.

"We have the function set that warns



guests when they enter a restricted zone," he says.

"This helps to keep our guests safe and our course in great condition." With the system enabled on the carts at Predator Ridge, when "a group drives into a restricted area the cart will not stop, it will give them an alarm to warn them they are in a restricted area."

Tournament time

Preparation, water management, turf selection, communication, technology and planning. All of these will help a superintendent succeed when hosting a big event. But perhaps the most useful item in the toolbox is the one that's entirely up to you: your attitude.

"The members are thrilled that we put the bermudagrass in ... no issues with agronomics (and) the ball is still rolling good. If we'd done 140 rounds on bent, around the pins would have been dead."

— KEITH WOOD, SEDGEFIELD CC

"I think the biggest thing is enjoy it and have fun," Plotts says. "Because if you enjoy it and have fun, then your staff will too."

Sedgefield's Wood agrees.

"I learned after a few years to go with the flow," he says. "It's part of the event. Don't let it get you down when, actually, it's job security. We've got another month of work lined up ahead of us." ■

Stacie Zinn Roberts is the president of What's Your Avocado?, a writing and marketing firm based in Mount Vernon, Wash.

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**TALKING
TURF TECH**

PART 3 IN A
3-PART SERIES

WHEN THE DEPARTMENT OF DEFENSE began developing the Global Positioning System (GPS) of satellite navigation in the early '70s, its thoughts were limited to military use. The Cold War was still burning hot, and the threat of nuclear war was used to justify the billions of dollars it would require to develop accurate satellite-based navigation for defense. Little did they know the general public would be using this constellation of satellites 40 years later to map the fastest route to a Starbucks, find where the bass are biting or aid in deciding between a 7 iron and an 8 iron.

For many years, GPS use was reserved primarily for government operations, offering only a degraded signal to civilians behind a curtain called “selective availability.” But in 1996, President Bill Clinton signed an executive order declaring GPS to be a dual-use system. The order became official in the spring of 2000, when selective availability was discontinued, allowing civilians to receive the nondegraded GPS signal globally and opening a floodgate of public-use GPS products and software.

The golf industry was quick to adopt this newly available technology. Soon, bulky and expensive GPS receivers were appearing in golf carts and golf bags throughout the world. During these early years, satellite acquisition often was slow and could be hindered by clouds and trees. Consequently, users questioned the accuracy of the new devices.

But as the technology continued to improve, the uses and application of GPS for golfers and golf course managers has

PINPOINT ACCURACY

broadened. From pin sheets to course mapping to satellite control of individual sprayer tips, forward-thinking entrepreneurs and superintendents are developing systems and uses for GPS technology to manage golf courses more efficiently, economically and ecologically.

Pin rotations

“It came to be out of frustration,” says Jon Schultz, president of ezLocator, when asked for the spark that ignited the concept for his GPS-based pin management system. “Frustrated as a player, we were seeing the same pin locations every week.”

Schultz, an avid golfer and 30-year veteran of the technology industry, set out to develop a system that would allow superintendents to rotate their pin positions more efficiently while

Continued on page 28

GPS technology helps superintendents manage golf courses more efficiently, economically and ecologically.

BY STEVEN TINGLE

The Right Direction

Continued from page 27
offering players more variety.

Enlisting the help of Kevin Nettles, superintendent at the Dallas Athletic Club, where Schultz is a member, he quickly learned the limitations of traditional pin-rotation systems.

“It was eye opening,” Schultz says. “Nettles didn’t have the technology at his disposal to do something. He didn’t have the expertise to understand what GPS technology could bring to him. What could a 3-D scanning system bring to help him? What could mobile devices, such as iPhones and iPads, do to help him?”

What resulted is a system that creates a 3-D map of each green, including the topology and percentage of slope.

“It’s a highly accurate survey of each green,” Schultz says. “It’s accurate to plus or minus 1 centimeter to any point on the green.”

From there, each cupable location — adhering to the USGA’s preference of pin locations with less than 2 percent of slope — is mapped, GPS referenced and entered into a database.

“We’re able to depict where to put each location accurately,” Schultz says. “We measure everything from the front and edge of the green.”

Tom Bailey, superintendent at Wade Hampton Golf Club in Cashiers, N.C., is receiving positive feedback about the system.

“The members like the layout of the pin sheets and having a pin sheet every day,” Bailey says. “They like the variety. There were several locations that hadn’t been used previously, so it gives us a good rotation.”

The system discovers many unknown, or previously thought unusable, pin locations.

“On average, we’re getting between 150 to 200 locations per green, depending on size, topology, slope and severity of the green,” Schultz says.

Map it out

Course mapping is another area ripe for GPS technology. While traditional mapping still is relatively expensive, some companies are developing ways to place accurate maps in the hands of superintendents at a fraction of the cost.

“Typically, a course superintendent would pay someone to conduct a survey and provide them with a map based on GPS points, and that’s a fairly expensive proposition in most places,” says Jeff Ryan, a partner with CourseVision. “Our approach is different because we start with an aerial photo of the property that’s orthorectified. It’s a high-resolution photo tied to GPS points that adjusts for the curvature of the earth and



establishes ground accuracy.”

CourseVision then digitizes the photo, creating a map that allows for the calculation of measurement data of fairways, bunkers, cart paths, water features, buildings or anything else.

“The map is GPS enabled,” Ryan says. “We’re just getting there in a different way.

Rather than walk with a backpack and a satellite receiver, we do it with a photo that’s been tied to GPS.

It’s \$1,500 for an 18-hole course for us to produce a map. Depending on the region of the country, it’s a \$5,000 to \$10,000 process just to get turf and heads GPSed in the field with a backpack.”

Superintendents are using the data provided by these maps in various ways.

Hartefeld National in Avondale, Pa., changed ownership recently, and William Brown, CGCS, notes the usefulness of the CourseVision data during the transition. He views the map on his iPad.

“During the acquisition, there were questions about acreage and costs,” Brown says. “It was a time-saver, because I was able to print Excel sheets formulated from CourseVision about acreage, greens, tees, fairways and bunkers. The company that acquired us was impressed with that.”

Easy being green

A completely enabled GPS map also helps superintendents with environmental issues. Michael Rayman, CGCS at Weibring Golf Club at Illinois State University, was working toward certification in the Audubon program, and the first step toward certification is a site assessment. Rayman used the map to complete his course’s site assessment and used CourseVision’s tree layer, along with an energetic Illinois State horticulture student, to create a database of all the trees on the property.

“The capabilities of the entire program are unique for the superintendent because it’s not only providing you with accurate measurements of your existing golf course, it gives you an opportunity to detail a sub-area,” Rayman says.

Look ma, no hands

But for superintendents, the ultimate GPS technology might be hands-free equipment control. While most turf equipment manufacturers say the viability of this concept is years away, a former North Carolina tobacco farmer is putting the technology to work now.

“I’m the guy who brought GPS to the industry,” says Marc

Thigpen, owner of NuTech Soils, a Trenton, N.C.-based fertility analysis and variable-rate application company. “I was the first one in North Carolina to do GPS on the farm. I saw the technology and decided to take it to the golf course.”

Thigpen uses GPS technology to balance soil levels with accuracy once thought impossible. Thigpen soil samples a golf course, and each sample is GPS referenced.

“By taking multiple samples all over the golf course, we’re able to take the data, process it and put it back to that point,” he says.

NuTech will take as many as 10 samples per acre, the results of which allow a superintendent to apply only what’s needed to each area.

“Our application equipment can put what the superintendent wants in that location,” Thigpen says. “The machine will change thousands of times per hole depending on what’s needed.”

The benefits of this process are economical and ecological.

“We’re cutting fertilizer consumption by at least 30 percent,” Thigpen says.

Tom Bailey at Wade Hampton is an early adopter of this technology as well.

“Historically, everything’s been done on a one-, two- or three-acre basis,” Bailey says. “You’d take one or two samples off a fairway, now we’ll take a couple of hundred. We can tailor our fertilizer to what each region of the fairway needs.”

Never one to slow down, Thigpen is taking the concept to the sprayer market. (See Part 1, “Smart Spray,” in the August issue.)

“We have an alliance with Toro and are doing individual tip control on sprayers,” Thigpen says. “We have sub-centimeter accuracy — not sub-inch, sub-centimeter. There’s instant gratification because you see the tip turn on and off, and it won’t overlap.”

Because the popularity of NuTech’s systems has grown, Thigpen is providing superintendents with more GPS options.

“We have a program in which each golf course can do their own sampling in-house,” he says. “We teach them how, then they take it and run with it. They evolve the system to what they want to do with their golf course. By having a handheld unit, they can do sprinkler heads, boundaries and a water management program.”

As technology evolves, entrepreneurs such as Schultz, Ryan and Thigpen will continue to tweak and improve their systems, while creative superintendents will continue to find new ways to use them.

“It’s just an all-around win-win for everybody,” Thigpen says. “You’re giving the superintendent a new tool in a new era of technology.” ■

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APPED UP

With today’s apps, superintendents have control in the palm of their hand.

BY BETH GERACI SENIOR EDITOR

Superintendents looking to know the forecast or manage paperwork straight from the course now have those tools right at their fingertips, courtesy of the latest apps.

Bob Porter, superintendent at Hiawatha Golf Course in Minneapolis, Minn., spoke about one of his favorites, **Evernote (1)**, at the 2012 GIS. The app enables superintendents to access and organize their files and record and store information from anywhere.

“It acts as a repository for anything you want to remember,” explains Porter, who uses it to search for and send invoices, discover products and take notes.

And interest in apps is growing, he says.

“When I gave my talk at the GIS there were 100 people in the audience,” he says. “There was standing room only.” Compare that to his talk three years ago, when just 30 people attended.

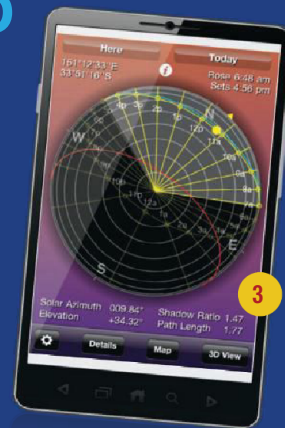
Like Porter, Justin Ruiz, CGCS at Indian Summer Golf & Country Club in Olympia, Wash., uses Evernote to organize invoices and collect information from the Internet. The app aficionado also posts to his blog and edits Word documents through apps such as **Blogsy** and **Quickoffice**, and relies heavily on the **Weather Channel (2)** app for help on the job.

“I always go to the 10-day forecast and try to plan projects around that,” he says. “In the Northwest, if you can get a break from the rain, you try to get as much as you can do.”

Adam Moeller, agronomist with the USGA Green Section Northeast, likes the **Sun Seeker (3)** app, which allows superintendents to analyze sunlight at any point on the course at any time of day. “If we wanted to know what the sun pattern will be standing on one green and

how that sun angle changes throughout the day on September 30 at 10 a.m., we could do that,” he says.

Looking ahead, Porter says, “the more of us that are using technology, the more we can speak to each other and learn what others are using. It broadens your horizons.”





MAKE AN OFFER



F ALL OF THE challenging aspects of a superintendent's career, many say budget planning (and the endless meetings that coincide with it) is the most dreaded. Sure, requesting the funds for new equipment from facility management is never easy, but that doesn't mean the issue should be avoided or that your need isn't valid. It's important for superintendents to research and consider their options carefully when it comes to investing in equipment. Before the negotiations begin, have a strong case for your request.

The process of purchasing new equipment can be broken down into three phases:

1. researching your need
2. building and presenting your case
3. closing the deal

As with any investment, it's essential you consider and demonstrate how you'll achieve short- and long-term value with every purchase recommendation you make.

PHASE 1:

STACK THE DECK WITH RESEARCH

It's critical to conduct thorough research and consider every option available when investing in equipment.

"The first thing I do is lay out each of the different scenarios regarding the equipment we need because I already know there's only so much the management team will invest in each year," says Matt Weitz, superintendent at Victoria National Golf Club in Newburgh, Ind.

There are many questions to ask and answer as you map your needs to improve course operations:

THEY CAN'T REFUSE

The keys to asking for a new equipment budget

BY STEVE VINCENT

NATIONAL SALES MANAGER, JOHN DEERE GOLF

- How can you improve operations and efficiencies?
- What new technology is available?
- Which portions of the course are the priority?
- What equipment is used most frequently?

After considering these factors, you might find you have a stronger case than you expected. Paul Chojnacky, golf course superintendent at Pasatiempo Golf Club in Santa Cruz, Calif., needed to justify considering purchasing new John Deere E-Cut Hybrid fairway mowers.