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BLYTHEFIELD: Rocks out | MONTCLAIR: Extended medley **BALTUSROL:** Tillinghast remastered **MONTGOMERY NATIONAL:** Music sells

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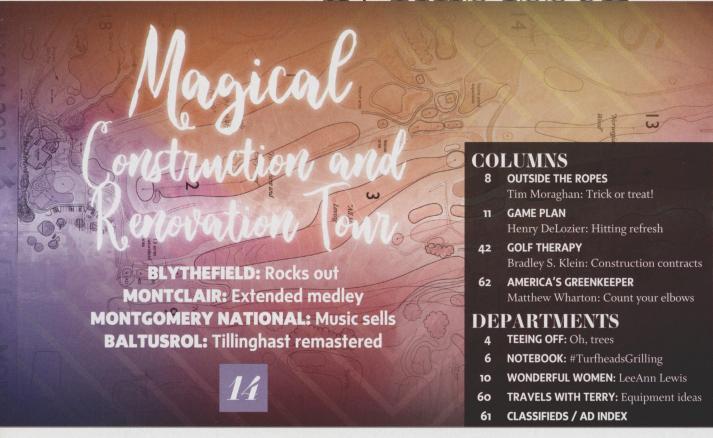
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OH, TREES

o, what's your stance on trees?

I loathe how the wrong ones in the wrong places cause unnecessary hassles for our readers, followers and listeners. I love being surrounded by them.

Yes, I'm conflicted.

Last month, I visited Redwood National and State Parks in far Northern California. The center of the 139,000-acre park, jointly managed by the National Park Service and California State Parks, is closer to Bandon, Oregon (154 miles) than it is to San Francisco (313 miles). Pockets of towering coast redwoods rising to 380 feet are attraction 1a, with a ruggedly refined section of the Pacific Coast representing attraction 1b.

The six courses at Bandon Dunes are the most well-known golf options near the redwoods. Unfortunately, this trip didn't include a trek that far up the Oregon Coast. Next time! The KemperSports folks managing Bandon Dunes are marketing wunderkinds and label the resort on the website as being "true to the spirit of Scotland's ancient links." First translation: Bandon Dunes is your place if you want to experience something akin to the "Home of Golf" in this country. Second translation: proceed elsewhere if you need trees lining turf.

Coast redwoods are ancient (up to 2,000 years old) and majestic specimens. Walking beneath them produces solitude and meandering landscapes filled with them offer opportunities for reflection and introspection. Naturally, my mind wandered to golf and this magazine a few dozen times on the trip. Sorry, Lindsey. I promise I wasn't thinking about golf as the sun perfectly peeked through Stout Grove on the evening of Sept. 13, 2021.

On your journey through these pages, you will encounter a story about—what else?—tree management (page 46). John Torsiello spoke with superintendents, architects, agronomists and consultants to a craft a feature titled "Has tree removal become an easier sell?" Calculated tree removal also represented a commonality in the efforts to restore, honor and reveal the Golden Age architecture at Blythefield (Michigan) Country Club, Montclair (New Jersey) Golf Club and Baltusrol (New Jersey) Golf Club, a trio of private courses featured in our "Construction and Renovation" section.

The acceptance of tree removal, especially at private clubs, as a necessity for the peerless conditions that members demand is one of the best boardroom developments over the past decade. Expectations for modern green performance are soaring higher than a redwood, and more sun and air, and fewer surrounding roots, make the seemingly impossible objective of repeating member-guest Saturday multiple times per week somewhat possible.

The benefits of tree removal are articulated in Torsiello's story and illustrated in the imagery supporting this month's course features. If you're encountering trouble convincing your owner, board, committee or general manager why the *wrong* trees must be cleared, subtly hand them this entire issue.

A successful tree management program requires patience and compromise. The *right* trees do exist, and they are likely a reason why golfers spend significant time and money experiencing the course you maintain. Attempting to punchout at 90 degrees under and around a cluster of feeble maples can be agonizing. Trying to fade a 6 iron around a robust oak can be mesmerizing. People need a place to chill for a minute or two when playing 18 on a sweltering afternoon. Trees provide that spot. Sometimes looking up, and seeing green, red and yellow can help reset a cluttered mind.

Acknowledging the role of the *right* trees can make it easier to remove the *wrong* trees. Even better, the industry employs hundreds of architects, consultants, arborists and agronomists equipped to handle the politics of tree tussles.

Don't judge all trees by the unsightly elms blocking sunlight trying to reach the 12th green. Don't judge all trees by the towering redwoods serving

as the perfect backdrop to a lifechanging moment.

We need trees in our lives and along most of our courses. We just need them in the *right* numbers at the *right* places. **GCI**



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NOTEBOOK



WE HAVE ... CUTTING BOARDS!

Recipes selected for the "Turfheads Guide to Grilling" will receive something they can put to great use.

hirts. Hats. Coolers. Golf balls.

If you have worked in the golf industry long enough, you have a closet or desk filled with "traditional" swag. It's time to introduce something unique to the industry — but we're going to make you work for it.

As part of the #TurfheadsGrilling campaign sponsored by AQUA-AID Solutions, *Golf Course Industry* is distributing 12x17-inch maple cutting boards for recipes with accompanying imagery that are selected for publication in the debut "Turfheads Guide to Grilling" appearing in the sixth annual December "Turfheads Take Over" issue. Recipes and high-resolution images can be submitted by entering bitly.com/GrillingSwag into your web browser or via

email to editor-in-chief **Guy Cipriano** (gcipriano@gie.net). In addition to being eligible to earn a cutting board, everybody who submits a recipe will receive a #TurfheadsGrilling koozie. Deadline for submissions is Nov. 10.

Established in early 2021, #TurfheadsGrilling honors the connectivity and creativity demonstrated through grilling, smoking and barbecuing. The program is designed to inspire turfheads to celebrate the camaraderie provided by outdoor cooking.

Follow @GCIMagazine and @Solutions4Turf and use #TurfheadsGrilling to join the conversation on Twitter. Everybody in the industry is encouraged to participate in the program and submit a recipe.

COURSE NEWS

One of the Gothic masterpieces of 1920s golf architecture is getting ready for a major restoration. Yale Golf Course, a university-owned and -operated property designed in 1926 by Charles Blair Macdonald and Seth Raynor, is going to be the focus of a new operational plan funded by Yale alumni and restored by architect Gil Hanse. The comprehensive plans, funded to the tune of some \$25 million, include a complete restoration of the golf course, updating of the clubhouse interior and expansion of the driving range.

Golf course architect and former Augusta National superintendent Billy Fuller oversaw the first phase of a greens renovation and enhancement project at Westhaven Golf Club in Franklin, Tennessee. The renovation included the redesign of six new greens, a newly designed practice putting green, and a conversion of all putting surfaces to TifEagle Bermudagrass.

Rees Jones is currently overseeing a redesign and renovation at Westchester Hills Golf Club, in White Plains, New York, which started Oct. 5. The project will include the expansion of 14 greens, the creation of new greenside pitching swails, reshaped fairways, the renovation of all current bunkers and the addition of strategic new bunkers, and the installation of a new irrigation system.

Eagle Mountain Golf Club in Fountain Hills, Arizona, recently completed a four-month golf course renovation and enhancement project. Troon oversaw the planning and management of the project, which focused on enhancing agronomic conditions and bunker playability at the 25-year-old property.

No. 63

Todd Clark grew up in a Kansas family that owned a golf course ... with sand greens.

"Back in the day, in Kansas, there were a lot of them," he says.

"There's probably a handful still around today. It's an affordable way to play golf."

The family no longer owns the course. But Clark and his family still play plenty of golf together.

Clark, the President of CE Golf Design, joined the Tartan Talks podcast to discuss a variety of subjects, ranging from primitive putting surfaces to multi-generation golf experiences. CE Golf Design is part of Kansasbased Clark Enterprises and the golf course design portion of the family business is going strong. Clark and his cousin Brent Hugo are handling 12 active projects in 2021. None of those projects include sand greens. On the podcast, Clark ponders designing a modern course with sand greens.

"That would be interesting, because today we would do it different (than in the past)," Clark says. "We would put in a lot of movement and do something so you wouldn't have to rake it and roll it all the time and make it so it can receive a shot."

Establishing a relationship with superintendents, placing tees in the right places, his experiences as a college father and working with the late Dick Nugent are among the other topics Clark discusses on the podcast, which is available on the Superintendent Radio Network page of Apple Podcasts, Spotify and other popular distribution platforms.



Tartan Talks INDUSTRY buzz

Brad Coleman is the new superintendent at The Club at Pasadera in Monterey, California — where he is also a member — after working the last three years at San Jose Country Club. ... Former superintendent Justin Ruiz is now the West Area

territory manager for Quali-Pro. ... Dr. Stacy A. Bonos received DLF's 2021 Excellence in Research award for her contribution to the development of new turfgrass cultivars that deliver superior performance with less resource inputs.



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TRICK OR TREAT

In our business, fall likely means you're either starting to shut down for the year if you're in the northern half of the country or gearing up for the busy season in the southern tier. I've lived and worked in both and I understand the yin and yang feeling many superintendents have in autumn. For me, the perfect analogy is Halloween: For some this is a season of good things (treats), while for others it's crazy and unsettled (tricks).

Trick or treat is also a good way to look at all our lives right now, which are being significantly affected by the whipsaw effect of COVID-19 and the unexpected golf boom. What follows are what I see as the "tricks" and "treats" of our business, which I hope prove that no matter where you are, we're all in this together, facing the same things — good and bad.

TRICKS

Labor

Where do you find new sources of labor? Can you afford to compete and pay for the workers you need? Has it ever been this bad?

Face it: You're going to be working harder and longer than you want to for the foreseeable future. Just as bad, you're going to have to learn to deal with mediocrity, too. With the minimum wage what it is, the quality of the labor force and the effort those in it are willing to put forth have declined.

With even unskilled workers able to command upwards of \$16 an hour, you're probably going to have to blow up your entire budget. I know of superintendents who've had to give \$6 an hour raises to

their longtime permanent staff just to keep them happy and not jump ship!

There's not much we can do to fix this situation other than be patient. Also, be sure to let the people in charge know just what you're up against and to expect to see some (minimal) effects on your course. Chances are they're seeing the same things happening no matter what businesses they're in and won't be too surprised when you come looking for more money to hire better employees.

Member complaints

When members complain — and they will complain — it usually involves a lapse in attention to detail (see "Labor" above). As noted, the new reality means it will take some time to get your course back to the level you and they are used to. Make sure they know that.

But it isn't just labor. Do you get the entire "Maintenance Monday" to make things right? Doubtful. The one day that is supposed to be for you and your crew to take care of detail work, fine tune and tighten things up is more likely a half-day. If that. Maybe you get from sunup until noon, then the players start to appear, either members or staff or both. Or you lose even more of Monday to outings.

If they're not going to give you Monday, they need to know they're not going to get the conditioning they want.

Weather

Even in a good year, **Mother Nature** can be a pain. But this year? Heavy rain, drought,

more rain, fires, hurricanes ... In some parts of the country, water issues that have been tough for years are now close to catastrophic. And you're already extra diligent about water use, to say nothing of plant protectant applications.

Despite this fickle mistress, our job is to provide the best conditions we can. And we do. It's an uphill battle to please golfers who have no idea of the real impact of a sunny day, much the impact of less rainy, windy or freezing days.

As always, communication and education are key. Do what you can to make sure your golfers know what you and your crew are up against day after day after day. I'm not saying it will help — they'll still complain — but that, too, is part of the job.

Fighting an army

Fall armyworms are here and are wreaking havoc. There is nothing worse for superintendents or golfers alike than finding the golf course under attack. These bug battalions can turn green grass brown in less than 48 hours.

Dr. Rick Brandenburg, an entomologist at NC State, says this year is "a perfect storm," unlike anything he's seen in 40 years. Why? Weather (see above). Before fall's armyworms became caterpillars, summer storm fronts blew moths farther and wider than ever, letting them lay eggs in new, more fertile areas. Those eggs are now hatching and we're suffering.

MORAGHAN continues on 58



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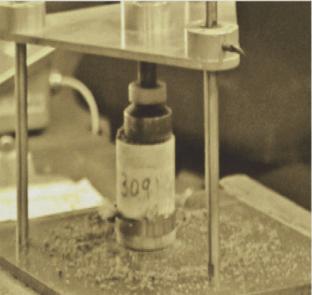
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LeeAnn Lewis

PRESIDENT, SOUTHWARD HO COUNTRY CLUB

eeAnn Lewis has a unique perspective on the turf industry. An accomplished player, she has qualified for 19 USGA championships and has also competed internationally. Lewis is now in her second year as president of Southward Ho Country Club, an A.W. Tillinghast design located in Bay Shore, New York, on Long Island. Prior to last year she spent a decade as the club's greens chair. Lewis has deep and abiding respect for the men and women who earn their living maintaining golf courses.

"I think early on (as a player) I looked at the scenery and playability," she tells Rick Woelfel on the latest episode of the Wonderful Women of Golf podcast. "But I did not look at any of the turf issues or what you would call superintendent issues until I got involved at my club as greens chair. Like everybody else, you just show up and think the course is magically in good shape. (Southward Ho superintendent) Jim Stewart educated me significantly."

Lewis praises Stewart for taking time to teach her some of the nuances of his profession. "I would ask Jim, now that I look back on it, very naïve questions," she recalls. "'Jim, why do we do this?' And he was very patient and he explained it to me. So, the fact he would be patient with me and explain it went a long way. He understood that the better educated I was, I don't want to say the easier his job would be, but he knew I was his advocate."

And so Lewis has been in the years since, as she shouldered the responsibility of educating her members about the superintendent's role and responsibilities.

"I think that's probably the most difficult thing I've faced as a greens chair and as president," she says. "We send out e-mails and news blasts, and the superintendent writes very detailed articles that are archived on our website. I don't know if people read them, or people don't want to read them, or people don't care, but every year, the same handful of people will ask, 'Why do we aerate?' We get the superintendent to write an extremely detailed report about why we aerate and then the next year (we hear), 'Why do we aerate again?""

Lewis believes her support for her superintendent allows him to "do his job without feeling the pushback. I always thought of myself as a buffer between the superintendent and the membership ... and trying to explain to the membership, 'Fixing your pitch marks is going to make a difference. Raking the bunkers makes a difference.' So, it's a never-ending effort to communicate with the membership."

Lewis has also dealt with the often contentious debates that surround renovation and restoration efforts.

"Probably around 2012 we had a gentleman, Phil Young, come to our club who was a Tillinghast historian," she says. "One thing led to another and we decided — and myself as greens chair — to do a restoration plan. So, Joel Weiman, a golf course architect, and Phil Young worked together.

"It took us about four years to come up with a document that outlined future projects, or what the course should look like. Say, if somebody wanted to redo the bunkers, this is what they should do. If somebody wanted to redo the greens, if somebody wanted to put in a tree or take out a tree, this is a guideline. It's not a guarantee that future boards will use it, but we're hoping it's there."

The reader can surmise where this narrative is headed.

"When I went into the boardroom to try to get this approved," Lewis says, "I would have people raise their hands and say, 'Well, I think the tree on six needs to stay there.' And I'd say, 'I appreciate your opinion, but I would like to go with Mr. Tillinghast's version of the golf course.' It's a lot easier to go back to the architect or go back to a little more detail and keep it away from personal opinions or personal agendas. I find that, as president, the hardest thing to manage is personal agendas and just keeping it about the full membership." GCI



"I find that, as president, the hardest thing to manage is personal agendas and just keeping it about the full membership."





To hear the full interview, visit the Superintendent Radio Network page on the Golf Course Industry website, Apple Podcasts and Spotify.



HIT THE REFRESH BUTTON

"Life moves pretty fast. If you don't stop and look around once in a while, you could miss it."

- Ferris Bueller, 1986

olf course superintendents live in a world that can move at a glacial pace while waiting for decisions from management and boards, or for grass to grow. They also understand the whiplash effect of Mother Nature that can propel them from zero to 60 in the time it takes lightning to strike or an irrigation line to rupture. The physical demands of the job are often only exceeded by the emotional ones. That's why it's important to hit the refresh button on a regular basis. Here are several easy steps that can help:

ENJOY AND EXPAND YOUR HOBBIES

Many superintendents are outdoors people. Hiking, camping, fishing and running enrich their lives. According to HobbyHelp.com, some of the more popular hobbies are less strenuous but equally rewarding, including birdwatching, reading, gardening and cooking.

The benefits of hobbies are numerous: making time for yourself, refreshing your mind and diminishing work/life pressures. Superintendents live in a world of repetitive tasks but can find relief by breaking away from routines. If monotonous duties are wearing you down, experiment with something different — restart and refresh.

For Fred Gehrisch, the superintendent at Highlands Falls Country Club in Highlands, North Carolina, physical exertion is an outlet. "My hobbies include teaching kickboxing and practicing Kung Fu.

I find that the physical exercise really calms my anxieties," he says. "I also enjoy doing home improvement projects. But spending time with my wife and our dogs is my most favorite pastime away from work."

For Carlos Arraya, the superintendent-turned-GM/ COO at Bellerive Country Club in St. Louis, destressing requires mental and physical activity. "I enjoy listening to vinyl records, going to museums, and I'm big into fitness activities. All allow me to refresh and reenergize. I have a new bounce after each exercise. I picked up meditation in 2019 and have kept it as part of my refreshing to-dos."

BE A LIFELONG LEARNER

Continuing to increase your knowledge of topics that interest you and ways to be more effective in your job is another outlet to relieve pressure. Want to learn more about nature, writing software code or history? Online learning has put continuing education within reach of most everyone, even superintendents with demanding schedules. MOOCs (massive open online courses) are affordable and flexible ways to learn new skills, enrich your interests and advance your career. MOOCs are often created by an educational institution, including some of the nation's most prestigious colleges and universities, and often address non-agronomic topics that can expand one's awareness of the world beyond fairways and greens.

The GCSAA provides excellent career-building knowledge and exposure to subject-matter

experts. Participating in their professional education programs is a bedrock on which to expand your knowledge base and increase career opportunities.

"I read trade articles from various professional publications to keep up and improve my knowledge," Gehrisch says. "I also like to read articles from other industries and see how I can use the information in our profession."

Same with Arraya, who adds, "I read a lot and have found myself shifting to Audible books. I like creating a list of challenges that the team or I face and research them at length. The research expands my thinking. If all else fails, I pick up the phone and call someone smarter than me."

DO MORE FOR OTHERS

Mike Kitchen, the superintendent and GM of Teton Pines Country Club near Jackson Hole, Wyoming, has helped his son's computer club. Many superintendents host Boy Scouts and Girl Scouts troops at their course to provide boots-onthe-ground experiences in conservation, nature, leadership, backpacking, hiking and bird study. In addition to helping youngsters earn their badges or complete a school project, most superintendents will tell you that the experience reminds them of the reasons they were attracted to agronomics and greenkeeping in the first place.

As Ferris Bueller accurately observed on his famous day off, life can move pretty fast. It's important to stop and smell more than freshly mown grass. GCI



HENRY DELOZIER is a partner at GGA Partners, trusted advisors and thought leaders. He is currently Chairman of the Board of Directors of Audubon International.

Q&A WITH BAYER

: We've been hearing a lot of buzz around Densicor, but can you tell us more about this new

A: Densicor is an exciting new DMI fungicide that was built to tackle the toughest diseases across the golf course while providing remarkable turf safety. It offers both preventative and curative control for up to 28 days of the most challenging diseases, including dollar spot, brown patch, anthracnose, gray leaf spot and snow mold. And it features all the qualities you need in a great fairway fungicide including an ultra-low use rate and convenient packaging while also delivering powerful efficacy for greens applications.

: There are many broadspectrum market. Why should

A: A national survey of superintendents indicated that the top five turf diseases are dollar spot, brown patch, anthracnose, gray leaf spot and snow molds. DMI fungicides are typically applied because of their broad-spectrum control of both foliar and soil-borne diseases. However, not all DMIs are created equally; some products only have two or three of these top five diseases on their labels, leaving critical gaps in disease control. Densicor not only includes all of these diseases on the label, but also shows outstanding performance against each of them. In total, Densicor controls 13 different cool- and warm-season diseases.

: Turf safety is important and some DMI fungicides are known and/or thinning. Is Densicor

A: Plenty of fungicides are "safe" on turf, but many DMIs can lose their broad-spectrum appeal due to negative growth regulation and phytotoxicity when the weather heats up. Densicor shows excellent cool- and warm-season turf safety under any environmental condition with or without plant growth regulators. This feature allows Densicor to be applied up to three times per year on greens, tees and fairways with no concerns, including in the heat of the summer.

: Can you elaborate on the use rate of

A: Densicor simplifies disease management for superintendents by offering a single, ultra-low use rate (0.196 fl oz/1000 sq ft or 8.5 fl oz/ acre) in a convenient bottle size. Densicor is tailored for fairway applications with one bottle treating six acres resulting in less time spent measuring, loading, and rinsing.

: Is Densicor widely available for purchase?

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he Grand River flows east to west across Michigan, its ancient meltwater channeling from tiny Somerset Township near the state's southern border toward its namesake Great Lake. Along the way, the aquatic artery passes through Grand Rapids - a moniker misnomer ever since the rapids were dammed and dimmed more than a century ago - and just south of suburban Belmont and the green oasis that is Blythefield Country Club.

The entrance to the club is nearly within sight of the river and its 225 acres are close enough to be both blessed and cursed with a gravel base and incredibly rocky soil. The base and the soil help the course drain remarkably well, superintendent Collin Romanick says, but after every rain the bunkers filled with pebbles and rocks, ancient sediment pushed to the surface, some as large as three or four inches around.

That would be enough of a problem for most clubs—especially when nearly 10 percent of all labor hours for a 25-person crew are allotted to raking through bunker sand and often removing those rocks by hand. For Blythefield, the host of the Meijer LPGA Classic since 2014, it was enough to spark a renovation.

"I started planting that seed maybe five years ago with my green committee," Romanick says. "I had been kind of pushing certain things we need to do here but I really wanted to get the bunkers renovated. Selfishly, I really wanted to get them done so I didn't field so many complaints."

By the end of a major project that closed at least some of the course for almost three months — and was nearly delayed a year by a potentially rescheduled tournament - Romanick and his crew wound up with not only new bunkers but also a new short game practice facility, a new putting green and putting course,





▶ Before and after looks at the Blythefield Country Club ninth hole. as many as half a dozen new tees on each hole, new internal drainage on nearly century-old greens, and the removal of what Romanick describes as "many" trees.

"My primary goal was the bunker renovation that the club really needed," he says. "It just sort of turned into more than that when the membership adopted the entire plan and decided to do it all at once — which doesn't always happen."

The real genesis of the project extends to at least 2015, when golf course architect Chris Wilczynski of C.W. Golf Architecture finished a master plan for Egypt Valley Country Club, a 36-hole facility that hosted the Champions Tour Farmers Charity Classic for more than a decade and is situated less than 10 miles southeast of Blythefield. Egypt Valley golf course manager Jeff Holmes is a friend of Romanick and, knowing that Romanick had started researching aerial course photos and drawings by original architects William Langford and Theodore Moreau, recommended he talk with Wilczynski.

"My original contact with Chris at this property, before we even thought about a master plan, was the short game area," Romanick says. "It was never maintained properly and I asked him to draw something up. And he did that, and it was a great drawing. He spent more time on it than he probably should have, and I think that really opened up the door for Chris here."

"I did a little sketch for a new short game complex, really basic stuff, and it started building the relationship," Wilczynski says. He started talking with then-general manager Todd Loughin, whose position is now filled by Bob Crissman, and "they all collectively liked the way it was going and they made a recommendation to the green committee and the board to hire me to do a master plan. It was just me developing that relationship and waiting until the timing is right.





Sometimes, I'll talk to clubs for a year, two years, three years before they pull the trigger."

Wilczynski completed the master plan in fall 2017 and the board approved and adopted it early the next year. Budget setting and funding followed, and Wilczynski developed detailed construction drawings in early 2019 to tee off the bid process. MacCurrach Golf Construction edged out at least two other companies around Christmas and the committee asked membership for approval to shut down the course across much of the summer in February 2020. And then "COVID happened," Wilczysnki says, "and there was kind of a pause."

That pause was not the result of local or state restrictions, though, but rather the uncertainty of where the LPGA Meijer Classic would fall on the shuffled schedule. The tournament normally crowns a winner on Father's Day, but the LPGA moved the event to the first weekend of October. "That set off all these wheels," says MacCurrach vice president Jeff

Tourangeau, who handled project logistics for the firm. "Maybe we get in there earlier and we sod the place, maybe don't put any seed down."

For a few weeks, the renovation looked like it might be pushed to 2021. There was no way the course would be ready before the event and Midwestern falls and winters would preclude a later start. That uncertainty disappeared in late May 2020 after the LPGA cancelled the event altogether.

"At the last second," Wilczynski recalls, "they said we were moving forward. Everybody was ready to go."

Tourangeau arrived from Florida with longtime MacCurrach superintendent Andy Alcorn and a 25-person crew — about five more than normal, an extra protection against the first COVID-19 summer — and started the first phase of construction on the putting green, putting course and short-game practice area on July 6. The back nine closed four weeks later, on Aug. 3, and the front nine closed a little less than five weeks after that on Sept. 5.

"We work up north every year, so we know a day in August is like three or four days in October," Tourangeau says. "That's why these jobs, you have to start 'em big and hard, and that's what we did at Blythefield. We had it wrapped up early - before October 31."

The project was not without hurdles. Michigan introduced guidelines for how many people could work on a site—indoor or outdoor—"and before they started construction it was dicey because the language stated you could only have the minimum number of people necessary to protect the golf course," Romanick says. "Does it mean that we can just barely keep the course alive? Are we maintaining it to tournament standards? What are we doing? We had to figure that out."

The project wrapped up under budget, though those involved with the renovation said the cost would have increased if the 2020 tournament had remained in October and pushed the start of the renovation to this summer. "I'm 28 years into doing this," Tourangeau says, "and I've never seen anything anywhere near as tough as the supply chain now."

"If this project were happening right now, with the way material costs have changed, I think we'd be looking for ways to cut some things out," Romanick adds. "You'd have to. Or you'd be going back to membership and asking for more money, which might be harder.

Any part of the project could have headlined a renovation at most clubs. The 64 bunkers sprayed with Better Billy Bunker liners and filled with Pro/Angle sand allow the maintenance crew to focus less on the demoralizing and Sisyphean task of plucking rocks after every rain and more on fly mowing and hand mowing more steeply sodded faces. The removal of mature trees from nearly every hole that were not a part of Langford's and Moreau's original design have eliminated agronomic problems and reintroduced old views and new approaches to play. And how many turf pros dream about carving out space for a new practice area or larger putting green?

The most important renovations for the future of Blythefield might wind up being the five or six new tees on each hole, which open up the course to players new to the game as well as older players who will benefit from playing from proper distances.

"It was really meant to keep people playing from the first time they pick up a club to the last time," Wilczynski says. "You give them those options. There are tees in the fairways, you can play whatever distance you want, you can play it differently every day."

Wilczynski watches players when he works on master plans — where they play and also how they play, and he studies swing speeds and analytics. As players age, there is more reliance on roll rather than flight, which requires more open areas onto greens.

"Different golfing abilities require some space between the tees," he says. "I've never liked when you see the blue and the white tees on the same marker and they're 15 feet apart. There's more of a skill level difference than 15 feet. I base a lot of it on the science of swing speeds and what I know people's abilities are."

"If people are honest with themselves and their golfing ability, if they're playing those forward tees, it gives them a chance to reach the green in regulation and have a good time playing instead of being frustrated," Romanick says. "Once you do that, it sure makes the day more fun. I think people are realizing that."

Would those new tees exist without the old rocky bunkers - and without the ancient glaciers that melted away and helped create them in the first place? Probably not. But they wouldn't exist without a little initiative and action, either,

"You have to be able to plant the seed," Romanick says. "If you need things done on your property and not just deal with them forever, you have to think about the best way to have that happen, even if it takes four or five years. We could still be dealing with crappy bunkers if nobody ever spoke up or offered a solution.

"Being proactive makes a big difference. You want to keep a property moving forward and that's the only way to do it." GCI

One more tip from superintendent Collin Romanick

This is all going to sound obvious and like common sense, but I think people miss it when they get involved with a project this size — or any project: You have to have the right people working with you. Without them, you're going to fail. All these guys we hired, I knew most of them personally and I was comfortable

with them. The work they did for us and adhering to a plan we all worked on for years really made it look easier than it was, and it made my job a lot easier. That

was the biggest thing we did right: planning years ahead of time, having a solid master plan in place, knowing the people we were working with and being comfortable

with them — because it's not going to be perfect every day. You're going to have a lot of things come up and you have to be comfortable with them. Having those

relationships in place ahead of time was key, and it all led to a really successful renovation.

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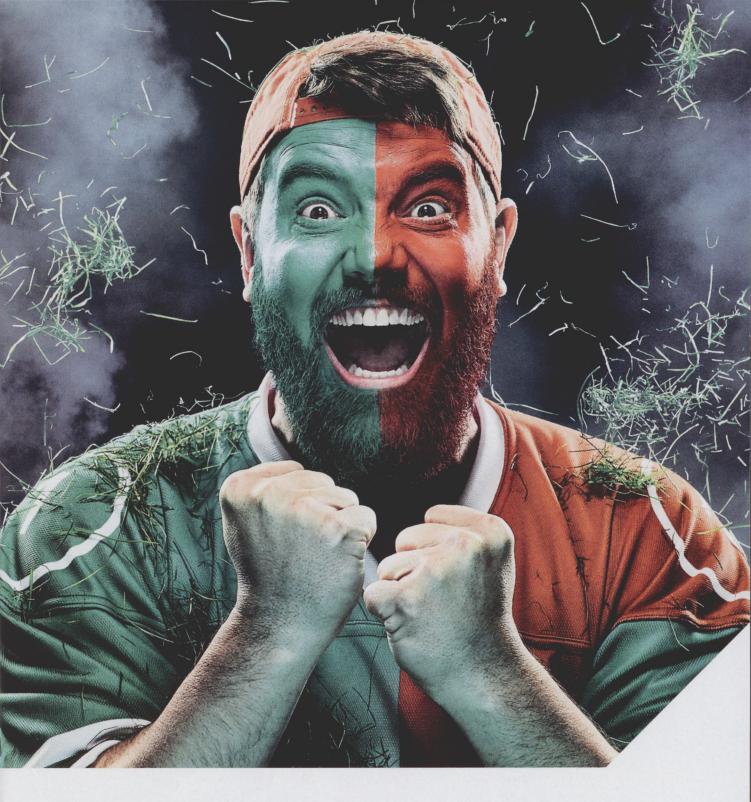
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newww time

A third-generation superintendent is helping Montclair Golf Club reconnect with its Golden Age past.

By Guy Cipriano

et's take a ride down an expanded fairway with a third-generation superintendent.

Stops are frequent, because there's plenty to see and explain on this morning showand-tell at Montclair Golf Club, a venerable 36-hole private facility on a northern New Jersey site featuring abundant slope and tilt. Director of golf course operations Michael Campbell leads the tour. Campbell's father and grandfather, both named Patrick, were superintendents in New Jersey. Fortitude and ferocity are required for longevity in the cutthroat New York Metropolitan private golf market. The origins of the turf Campbells in the region extend to the 1940s, when the elder Patrick returned from World War II and started working on golf courses. He passed along what he learned to his son, who shared what he learned with his son.

Campbell is "3 of 3" in his family's turf tree and he's beginning a tour on a hole that members and workers refer to as "1 of 3." The hole, like the other three first holes at Montclair, begins at the clubhouse. It plays downhill, setting a scene for sweeping views of an expansive golf property resting inside a heavily populated neighborhood. The fairway is wider, the green is bigger, the views are less obstructed thanks to perhaps the biggest project ever involving a Campbell. Montclair is restoring its nines, one at a time.

Donald Ross, the original architect of the First, Second and Third nines, and Charles Banks, the less recognizable but equally brilliant architect of the Fourth Nine, are inspirations for the project. The



Third Nine went first and reopened on Memorial Day, as Campbell had promised the membership a year earlier. "There are a lot of things that have to come together over a year to hit that deadline," Campbell says. "There's a little bit of a sense of relief when you do it. It's very important to me that whenever we speak to the club, that it comes true."

Campbell has spent his entire life preparing to execute and achieve big things on golf courses. He became a superintendent at 25. Now in his 40s, his run at Montclair started immediately with implementing elements of a gargantuan master plan and included a dual stint as the club's turf leader and general manager. He prepared for the restoration by studying and sifting through archived photos, writings and records. All that happened while his team supported thousands of member

and guest rounds with no designated starting and ending points. Montclair might be the only 36-hole club where each nine is treated like a separate course. Members leave the golf shop, step to an open nine and begin playing. All four ninth holes end at the clubhouse and members seeking to play 18 holes leave a ninth green and head to an open tee box.

The presence of 36 holes limits the distraction members typically encounter during construction. Restoring one nine at a time means 27 holes remain open. The abundance of golf amid construction means Campbell and his team, which includes assistant superintendents Mike Sturdevant and Mike Sharp, must find ways to pace themselves. The digging at Montclair started in 2016 with the installation of a new irrigation system and it continued with tree removal

guided by Campbell and architect **Brian Schneider**, a senior design associate at Renaissance Design. The restorative work on the Second Nine started a few months after the Third Nine reopened. Work on the Fourth Nine will likely begin next year after the Second Nine reopens.

"It's a lot like football," Campbell says. "You spend a lot of time practicing and then all of the sudden, 'OK, it's gameday.' Then you get that small burst and it's back to planning. It's professionally rewarding, it's physically exhausting, it's mentally exhausting and it's a lot of hours. To be honest, whether we are doing nine holes of construction or 18, I don't think it matters. We have 27 holes we still have to maintain, we still have a member-guest, we still have to host a club championship, we still have to aerify those other greens while

construction is going on. There's still a lot of normal, day-to-day maintenance going on, plus the building, plus the stuff that's still being played on, plus the outings. Everything happens bigger at Montclair."

Given the volume of work and the labor shortages impacting maintenance departments and clubs throughout the New York Metropolitan area, Campbell concedes building and motivating a team is "pretty difficult." Campbell rebuilt the staff upon moving from neigh-



▼ The restored third hole on the Donald Rossdesigned third nine at Montclair Golf Club. boring Rock Spring Club, an architecturally fascinating course designed by Banks and Seth Raynor, to Montclair. "Our mission statement for the department is: 'We will be known as the hardest-working greens department in the state," Campbell says.

The potential to return Montclair to its architectural roots-Robert Trent Jones Sr. started tweaking the nines after Ross and Banks completed their work and his son Rees Jones directed later work - motivates Campbell and his team. "As far as I'm concerned, it's hallowed ground," Campbell says. "It's a historic piece of property. It's designed by Ross and Banks. Find me another golf property that can say that. So, it's paying homage to those guys while it still stands relevant 100 years later. Now it's been entrusted to us and understanding that responsibility and the importance of it, that helps with pace and staying motivated."

Schneider agrees that Montclair represents a rare restorative opportunity. Founded in 1883, the club hired Tom Bendelow in 1899 to design an 18-hole course near the location of the current First and Second nines.

Montclair commissioned Ross in 1920 to design the First, Second and Third nines. The club added the Banks-designed Fourth nine in 1929.

"The site is built on a pretty steep hillside. When you are building features into a hill like that, you end up with a lot of slope in your greens and some really steep and deep bunkers and some really interesting fairways," Schneider says. "The greens on the Second and Third nines are as severe as anything I have seen from Ross, which is saying something. It's been really fun to expand those. Expanding them and reclaiming lost hole locations has really opened people's

Montclair Golf Club has expanded fairways on its second and third nines by about 30 percent over the last four years by primarily using a methodical program implemented by director of golf course operations Michael Campbell, according to architect Brian Schneider. Areas plotted for fairway expansion are scalped, interseeded with bentgrass and then mowed via gradually lowering the cut to fairway

"Mike has taken a patient approach, and I think that's the best, the simplest and the least expensive way to accomplish it," Schneider says. "Some clients just want it done immediately. They like the sod approach. That's way more expensive and the end result is not always to the same standard as the simpler approach.

A third fairway expansion tactic involves killing rough followed by interseeding.

"In all honesty, we have done a little bit of all three," Schneider says. "As we are doing the work, we are generating some fairway sod and some tee sod and some approach sod, so we have some short grass that's coming off the holes we are working off and we are finding places to expand fairways and approaches with that sod without throwing it away. I'd say 80 percent of the fairway expansion work has been scalping it down, overseeding and doing it the patient, less expensive way."

> eyes to what they have been missing for years."

Aerials from the 1930s are helping support on-the-ground decisions being made in the 2020s. "I can't begin to tell you how many hours I spent staring at those old photos," Campbell says. The photos convinced Campbell that the restoration needed to begin with tree removal and the process was in an advanced stage even before the Third Nine closed last year for work executed by McDonald & Sons overseen by Northeast regional director Mike Tilleli. The removal has improved turf health and playing conditions and highlighted the beauty of the stately and healthy oak trees dotting the property. Campbell's ride down "1 of 3" includes a 15-minute stop at an undulating green, once surrounded by trees. The 007 bentgrass/Poa annua blend on the surface is vigorous. A walk to the back of the green reveals views of holes on all four nines. More than 400 yards up the hill, from the patios and windows of the clubhouse, the openness foreshadows what lurks beneath, including fairways connecting multiple holes.

"The tree removal has been remarkable," Schneider says. "When you are standing on the back of the clubhouse looking back on the hill, you see this big open expanse of golf. Opening that space up, connecting all those fairways, exposing the grandeur of the place was an important step."

From turf to trees, no decisions are being made on whims. A lifetime in the business means Campbell understands the importance of developing a network. Besides Schneider and Tilleli, the team supporting Campbell includes veterans David Oatis of David Oatis Consulting, Rob Finnesey of Tree Tech and Keith Kubik of Grass Roots Turf Products. The

decisions they are helping Campbell make are leading to enchanting golf strolls akin to another era that would have excited a person who knew a few things about restorations.

"My dad was somebody who I used to bounce a lot of things off," Campbell says. "This was bigger than anything he had ever done and he had done a lot of restorations. A lot of the approaches that I take have been a culmination of a lot of years of talking with him about restorations and operations. I'd like to think a lot of what we do starts with him and then I found my own way and changed it. If he was here, I think he'd be pretty proud of it." GCI

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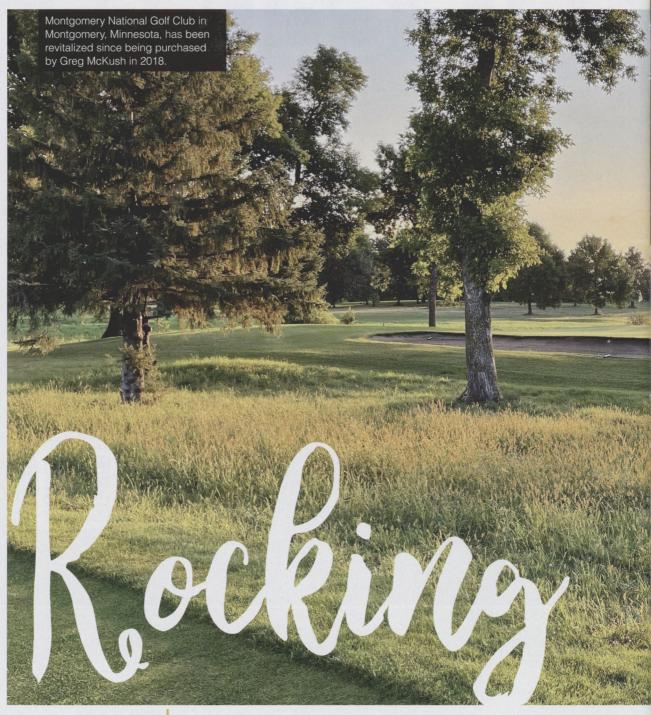


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on the renovation

A Minnesota course is undergoing a 'Magical Mystery Tour' to enhance its status in a crowded and golf-enthused market.





"About a decade ago, I saw this golf course for sale, though at a price which was too high," he recalls. "Yet, about six years' later, the price had come down nickels on the dollar, and I could figure out how to buy it. When the owners accepted my offer, I couldn't sleep for a week because

I was so excited to be back in the business."

His long and winding cart path to ownership appears both well-timed, and well worth the wait: With a unique, Beatles-themed marketing approach to Montgomery National, McKush seems to have ideally metered the zeitgeist of golf's surge in pandemic-era participation. Courting nascent, returning and non-traditional golfers alike, his grounds are also reaping the benefits of tee sheet green.

"It's about creating fun, not being stuffy, not having all these rules and thanking everybody for coming in," McKush says. "It's a different thing we're doing, and the opportunity to be creative with it, I'm just loving it." Such love involves ample homages to the Fab Four across the grounds,

Tron

By Judd Spicer



including:

- · Every hole named after a Beatles
- · A guitar-shaped bunker on the par-4 10th (named "While My Guitar Gently Weeps")
- · An actual yellow submarine on the home hole
- · "Help!" traffic markers and signage across the course to aid players with a thorough Montgomery National renovation and re-routing project.

For McKush - himself a singer-songwriter who has played ample gigs (including in a band with his

> kids) - the Beatles theme didn't come via a broad stroke upon purchasing the course, but, rather, note by note.

"It's been baby steps," he says. "In 2018, I saw the submarine on the side of the highway at a place called Hot Sam's Antiques & Foto Park. It's along I-35W, so a lot of people would just drive right by. The sub was painted gray, but when I drove by, I thought, 'Holy crap. I need to check that out.' So, after I bought it, I had one of my members, who's an artist, paint it yellow. And then I come to find out that the sub was a prop for the movie "Tora! Tora! Tora!" They had two of them, and didn't need (this one for) a second take. Soon, after I put it in, people started coming from far and wide just to take pictures with the darn thing."

Evolution of the hole names also began by chance.

"We had a gentleman who,

three years ago, had a massive

heart attack on our first green. Luckily, there was a helicopter overhead, it parked on the green, and he was saved. A crazy scene," McKush remembers. "The guy is still a member —he's doing great—and I said doubling down on the grounds. to him, 'John, because of what

happened, I'm gonna' call our first hole, 'A Day in the Life.' And he said, 'I'd prefer if it was called, 'With A Little Help From My Friends." Said fun with names find further

highlights on No. 9 (aptly named "Number 9"), along with "Strawberry Fields Forever," the par-5 sixth that includes red-painted tee stones and actual strawberry bushes running alongside the hole.

Opportunity to chart his course with a melody unchained, McKush is finding further fun — and ample success — with marketing outside the tee box. To wit: A recent promotion offered free golf for those who brought in a Beatles album. The result? "I got 600 Beatles albums," McKush laughs.

Painting the property with a creative brush has also brought a combo of city mice and Beatles diehards to the grounds.

"Couple weeks back, I had a group of 16 guys come out — all wearing Beatles T-shirts," McKush says. "And they came from 100 miles away. Over time, as I've seen this coming into its own, this course, this property, has started to feel like one big canvas."

According to McKush, he's already been approached (twice) with offers to sell the course, but the owner isn't jumping sub mid-stream. Rather, he's

Reconnecting with Minneso-

ta-based architect Paul Miller and his eponymous firm - the two worked together when McKush was director of golf at the Meadows at Mystic Lake, which Miller designed as a then-partner at Gill Miller, Inc. - Montgomery National is in the process of ample course improvements and a new clubhouse project.

"Like the Beatles theme, it started organically," McKush says. "We began with little touches, people liked it and we started seeing more players. So, as the money kept coming in, I didn't keep it in my pocket."

Per the clubhouse, McKush envisions golf's version of Hard Rock Cafe (he already bought a yellow submarine jukebox), a space that includes plans for an outdoor amphitheater —"where we'll have live music a few nights a week, if the city doesn't get mad at me," McKush smiles.

On-course reinvestment in the 1970 design from Joel Goldstrand has seen a multi-year master plan taking shape between the McKush-Miller mind meld.

"We're doing well, and, with all the changes, it's exciting to see the transformation," says superintendent J.D. Stanger, who was hired by McKush in 2018. "When I first got here, it was a good course, but with all the changes now and into the future, this has the chance to be something really special. We'll just



▲ Paul Miller



▲ J.D. Stanger



▲ Greg McKush







keep rocking and rolling with all the improvements."

The thorough re-route has included a hole re-numbering to now bring Nos. 9 and 18 back to the new clubhouse. "I asked Paul one day how we could make our former No. 5 our 18th hole," McKush says. "He grabbed a napkin and said, 'Like this?' That's how fast his brain works."

The changes are aimed, in part, at improving course flow.

"For the most part, our job has been adding new cart paths to direct traffic, and, of course, putting up the Beatles 'Help!' signs to guide players," Stanger says. "The re-route is fun. It changes the course for the better, makes it a more enjoyable play than the original 18."

Re-sodding multiple tee complexes, adding new tee boxes and tree removal projects on Nos. 2, 10, 13 and 18 have also been part of the agronomy plan. "To improve line of sight and make it more accessible," Stanger says of the work on the 10th. "It allows players to see the entire hole and just opens it up much better."

New holding ponds on Nos. 12 and 15 were installed to improve drainage, while an additional pond project on No. 10 aims to assist both course and community. "This fall, on No. 10, we'll open up the pond area in conjunction with the city," Stanger says. "Everything that runs from the (adjacent) housing development runs to this pond, so once we expand it, it will take relief from us and the property line, too. So, yes, it is a benefit for both us and the city."

Maintaining the music-themed turf does bring about its unique details, including maintenance of the sound hole on the guitar bunker. "We have a little grass island in there, which we'll mow every 10 days," Stanger says.

From Stanger's vantage, the "Come Together" at Montgomery National is proving a winner, from turf to tune.

"I think it's great," he says. "From the guitar bunker to the yellow submarine, it has been a draw for people to come out. It makes golf fun, it's something different and has made for a very fun atmosphere. And since Greg has taken over, we're seeing a lot more people drive down from the metro area. The Beatles theme, along with the course improvements, have a lot to do with that."

With an ultimate goal to have Paul and Ringo stop by for a round, McKush's unique push for a more inclusive, non-traditional game and grounds is proving that all a dated course needs is, well, love.

"It makes people feel that they're part of this," McKush says. "Maybe it's golf's rise during COVID, maybe it's a bit of what I'm doing. But we're seeing a lot of players, and it's a great diversity of players." GCI

Judd Spicer is Palm Desert, California-based writer, a Minnesota native and a frequent Golf Course Industry contributor.

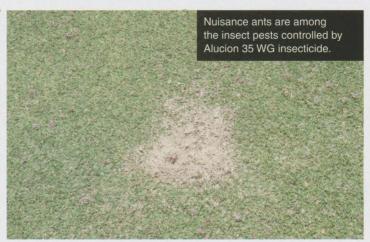


Editor's Note: BASF and Golf Course Industry are working together to tell the story of how three new products are coming to life for the golf market. This is the third part of a three-part series. The first part appeared in the April issue and the second part appeared in the September issue.

n golf course maintenance, insect pests are a potential problem lurking in every region. Just consider the recent armyworm invasions.

Long before armyworms made their menacing 2021 northern migration, a team of skilled and experienced researchers from BASF pondered the possibilities of combining a pair of active ingredients from different insecticide classes. The result of their efforts has led to BASF introducing its first insecticide for golf courses.

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A BROAD SPECTRUM, NON-RESTRICTED USE SOLUTION FOR HARD-TO-CONTROL SURFACE FEEDERS

From chinch bugs and cutworms to annual bluegrass weevils and nuisance ants, there are dozens of insects waiting to feast on your turf. Stop them in their tracks with Alucion 35 WG insecticide, featuring a brand new, dual-action formula that delivers the broad spectrum control, fast knockdown and strong residual your turf needs to stay protected from surface-feeding insects. It's the powerful solution your toolbox has been waiting for.

For more information, visit betterturf.basf.us/products/alucion.html



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35 WG insecticide is the only synthetic pyrethroid with a non-restricted use label available to the golf market, according to BASF technical service specialist Jen Browning.

"It's been a number of years in the making," Browning says. "Alpha-cypermethrin, the pyrethroid molecule belongs to BASF, and we spent a good amount of time finding the right partner molecule and then testing to confirm that to-

gether they would deliver the speed and residual that we were targeting."

Insecticide innovation isn't a new concept for BASF. The company has a successful professional pest control division, and the active ingredients in Alucion 35 WG insecticide also help control insects within structures. One division's staples can become another division's innovations with thorough research and development.

"Both of these active ingredients have come over from the pest control side of our business," says BASF senior technical specialist Kyle Miller. "They are well proven, and they are very good performers there. That's one of the reasons they ended up together and we went forward, because we knew they would have a fit and they are just overall strong actives."

How does Alucion 35 WG insecticide fit into a golf insect management program?

BASF worked with researchers, universities and collaborators across the country to gain an understanding of what turfgrass insects are controlled and suppressed by Alucion 35 WG insecticide. For some researchers, such as Penn State University associate professor of turfgrass science Dr. Ben McGraw, Alucion 35 WG insecticide has presented an opportunity to perform trials with a new combination for turf.

"There's always the possibility for synergy between two components when they are in a mixture," says McGraw, one of the leading turfgrass entomologists. "That's always interesting. Even if it's an additive, you can have one component weaken a specific life stage and the other active ingredient can come in



and do the cleanup."

Alucion 35 WG insecticide is labeled for control of ants, armyworms, cutworms, sod webworms, billbugs and chinch bugs. Helping golf and turf professionals in cool-weather regions cope with armyworms represented a huge part of McGraw's August and September

days. "I'd rather talk about some other insects," says McGraw, alluding to the devastation armyworms caused to turf this year. "We did some Alucion trials on fall armyworm and it looks really good on them."

BASF defines commercial control of an insect as reducing individuals by 80 percent or more, according to Browning. BASF defines commercial suppression as reducing individuals by between 70 percent and 80 percent.

Alucion 35 WG is also labeled for suppression of annual bluegrass weevil (ABW), European crane fly and mole crickets.

Trials have demonstrated Alucion 35 WG insecticide to be an intriguing tool in the cool-weather tussle to prevent ABW from damaging turf. "As far as ABW, I would recommend waiting to apply after the adult peak and before early instars are present (or post-egg hatch timing)," McGraw says. "That also allows you to come with a larvicide should you need to. In some of our really pyrethroid susceptible populations, this single application would give you what I could consider really good control. Having

There's a new herbicide, too

BASF's busy 2021 also involves releasing a new non-selective herbicide to the golf market that it has positioned as an alternative to glyphosate.

Finale XL T&O herbicide joins an herbicide portfolio that includes

Drive® XLR8 herbicide, Pylex® herbicide, Tower® herbicide, Pendulum® AquaCap herbicide, Basagran® T&O herbicide and Segment® II herbicide

"It fills a nice void for us," says BASF senior technical specialist Kyle Miller. "In the non-selective herbicide business, there are just a few choices, and we have one of them. We feel that's important.'

Finale XL T&O herbicide possesses a myriad of potential uses on and around golf courses, including the ability to control weeds along cart path edges, at the base of trees, pond edges, pump houses, bunkers, fences, gravel walkways and parking areas, and landscape beds. It can also be used to make spot treatments in rough and native areas.

"The big thing is, wherever you spray it, that's where it controls that particular weed," Miller says. "It has pinpoint accuracy and gives you nice clean edges. If you are treating on the golf course or you want to edge bunkers or a cart part or whatever it might be, it's great with really low use rates. We're

about half of what is used for glyphosate in a lot of situations."

BASF technical service specialist Jen Browning adds, "It also doesn't come with the baggage of weed resistance that glyphosate has. This year, there are 47 weeds worldwide that are resistant to glyphosate. Seventeen are in the United States and three of them are Poa species. There are no Poa species that are resistant to glufosinate, the active ingredient in Finale XL T&O herbicide. There's only one weed in the country that has shown any glufosinate resistance and it doesn't show up in turf and ornamentals.

Finale XL T&O herbicide also brings a different hue to the spray tank. The new formulation from BASF features a red color, allowing applicators to clearly see the volume in the tank.

> it early allows for additional product to be incorporated into that program should they be needed. This is an insect that we are not making a single application and walking away from in a generation."

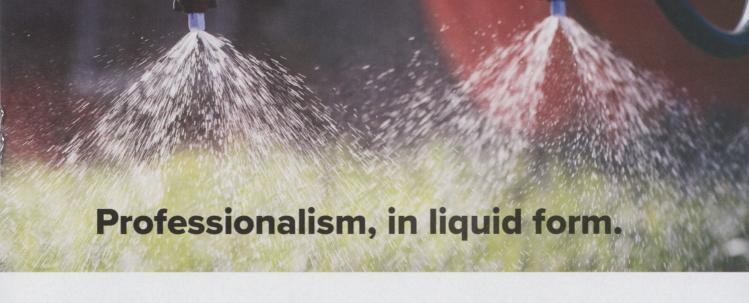
> Ultimately, customers will determine how innovation can best solve potential problems. Insects vary from region-to-region and even from course-to-course. Alucion 35 WG insecticide can be applied wall-to-wall or via spot treatments once per year. Superintendents will surely find innovative ways to use a new product.

"It's up to the pest," Browning says. "That dictates to superintendents how they are going to use a product and how they are going to dial it in to their insecticide programs."

D • BASF

We create chemistry

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A Deeper Respect



mature

Baltusrol Golf Club modernizes everything beneath the ground and returns the surface appearance on its Lower Course closer to what A.W. Tillinghast envisioned

By Guy Cipriano

t's the second day of summer. It's raining. And the Lower Course at Baltusrol Golf Club yields bounces, thumps and other onthe-ground delights.

Walk the first fairway. Bracing for squishes underneath soft spikes? Don't fret. Strut forward and allow a nifty network of pipe, sand, gravel, soil, valve and passages to do their thing. Pouncing on this prized and historic piece of New Jersey golf land in 2021 — and beyond — means stepping in fewer (if any) puddles and experiencing a course with the abundance of options A.W. Tillinghast envisioned in 1922 when he completed what later became a National Historic Landmark that has hosted seven U.S. Opens, two PGA Championships and two U.S. Women's Opens.

Plenty changes in 99 years, though. Bet Tillinghast didn't envision that humming near the second tee. That reassuring subsurface sound emanates from a PrecisionAire system installed to help putting surfaces thrive in lousy weather. Who says approach shots can't thump and then trickle up, over and around Golden Age contours





Members of the Baltusrol Golf Club turf management team from left: Thomas Utter, Sean Carroll, Shawn Haverdink, Greg Boring, Jeff Reggio, Dan Spall and Christopher Brewer.

on wet days?

Bet Tillinghast also didn't envision the ingenuity, grit, coordination, adaptability and courage required to restore *his* work on one of *his* most well-known courses.

Baltusrol unveiled the reconstructed Lower Course to its members on May 18, 2021, ending a process filled with anticipation and nearly halted by a global pandemic.

Greg Boring arrived as director of grounds in January 2019 and major decisions, including whether to embrace or attempt to eradicate *Poa annua* on greens, had to be made. By Boring's first fall on the job, which included a significant clubhouse fire, crews were placing mainlines for the new irrigation system.

Construction was scheduled to accelerate in April 2020 with the arrival of a large crew from golf course builder Total Turf Golf Services. The club opted to start earlier than planned. Total Turf's and Boring's teams started executing a thorough plan devised by architect **Gil Hanse** on March 2, 2020. "Who knows what would have happened had we

not started early?" Total Turf vice president **Greg Hufner** says.

A few weeks after construction commenced, the magnitude of the COVID-19 pandemic emerged throughout the New York City metropolitan area. Office jobs moved to remote locations; some occupations and businesses were ordered to temporarily halt or adapt work methods. Outdoor construction continued and crews restoring Baltusrol operated from separate carts, staging areas, housing and even restrooms. Everything slowed outside the club, to the point where a lack of traffic re-



duced Boring's 32-mile, 70-minute commute to Baltusrol from his western New Jersey home to 30 minutes.

Tillinghast designed a pair of championship courses at Baltusrol—a similar restoration is planned for the Upper Course in 2024—and each course requires around 22 grounds employees when fully staffed. The pandemic prevented both courses from approaching budgeted 2020 crew sizes. Lower Course superintendent Shawn Haverdink, who served as a project manager, had 12 employees for grow in and regular maintenance. Upper Course



"Our staff realized we were restoring Baltusrol. If you can't get up for that, you might want to go be an accountant. We looked past the hours and it brought us closer together as a team. Let's face it, you couldn't really do anything. You couldn't go out and have a meal, you couldn't go out and have a drink. Sure, there were times we saw a little too much of each other. But we got through it."

- Greg Boring

superintendent Jeff Reggio maintained the club's open course with 12 employees. The Upper Course received more than 27,000 rounds in 2020, a significant total considering the state didn't permit golf in March and April, and groups were limited to twosomes when courses reopened in May. A busy year at Baltusrol, according to Boring, includes around 35,000 rounds between both courses. "It was a daunting task for those guys," says Boring, referring to Haverdink and Reggio, "but they did a great job."

"For me, it was pretty much a big adrenaline rush every day because you are so busy running around to different places," Haverdink says. "The day goes by fast, even if it's 12 hours."

Uncertainty permeated through-

out spring 2020. Crews, for example, worked on the third green during an April evening using vehicle lights to illuminate the surface. Tasks often extended into darkness because of the murkiness surrounding state and local pandemic mandates. "We were trying to get that done because we weren't sure if we would be able to continue the next day," Haverdink says.

Fortunately, the project included no major interruptions and the primary motivator for members of Boring's team remained unchanged despite the unknowns and lengthy days. "Our staff realized we were restoring Baltusrol,"

Boring says. "If you can't get up for that, you might want to go be an accountant. We looked past the hours and it brought us closer together as a team. Let's face it, you couldn't really do anything. You couldn't go out and have a meal, you couldn't go out and have a drink. Sure, there were times we saw a little too much of each other. But we got through it."

Hanse regularly commuted from his southeast Pennsylvania home to oversee the progress during a period he calls "the strangest of strangest times." As he traveled unimpeded on normally overcrowded roads, he revisualized inspiring onsite scenes. "What we saw was an amazing commitment from everybody on site to work their way through it," he says.

The final product includes distinct features members and guests see such as the rebuilt "Sahara" bunker on the par-5 17th hole and fescue replacing flowers behind the expanded green on the par-3 fourth hole. Cool stuff, indeed. But during a media day presentation before rain started falling on that second day of this past summer, one of the club's more influential members emphasizes what Baltusrol sought with the restoration. "We're looking for

Restored course

Director of grounds Greg Boring and the Baltusrol Golf Club team are using data to determine how to best maintain the rebuilt Lower Course.

A Google Drive file accessible by everybody on the turf management staff documents the time and resources required to mow and spray expanded greens and restored bunkers and waste areas. Fleet tracking software has been installed on maintenance vehicles and mowers aid the data-collecting process.

"One of the things the leadership of the club challenged us with this year is becoming more efficient and becoming more data-driven," Boring says. "It's definitely been a little bit outside of our comfort zone and it's something that's adding a little bit to what we have to do. But we have been pleasantly surprised with how we have been able to use the data that we generated."

Boring's team is still in its first season of accumulating data on the restored course, although they have already learned enough to reconsider a few practices.

"One of the things that's surprising for us is that we spray plant protectants on Friday mornings and we Spray Hawk greens. We have noticed a decrease in green speeds on days that we spray," Boring says. "Is it the stickiness of the product? Even once the product is dry, we are seeing a decrease in speed. That's something we have to manage for. Maybe (the solution) is allowing the product to dry and throwing another roll out there. Without this data and recording all of this, it's something we might overlook."

near-championship conditions for members and guests on a daily basis," says club president Matt Wirths, the chair of the master plan committee for the project.

Achieving this directive requires tremendous turf. Cultivating an environment for tremendous turf in an erratic four-season climate possessing site-specific microclimates requires a tremendous investment in infrastructure, thus the addition of 261/2 miles of drainage, a new pumphouse and irrigation system, and PrecisionAire beneath greens. The eighth green represents the toughest environment to grow a "championship" quality putting surface on the course, because it sits within a tree-covered corner of the property. To help the surface resemble the 17 others on the course, the club in-

> stalled two pop-up fans adjacent to the green. The fans only leave the ground when they are being used. Subtly placed synthetic turf covers rectangular holes housing the fans.

"Three-quarters of what we spent on the golf course were on things members don't even see," says Boring, who uses an example from an early June evening to illustrate how the investment benefits the membership. "We got 1.7 inches of rain at 7 at ◆ Tree removal opened views of the course from the Baltusrol clubhouse.





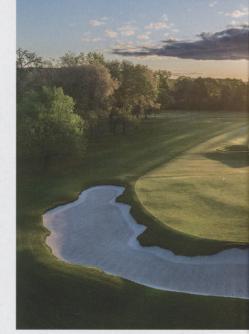
▶ Greens were expanded as part of the Lower Course restoration at Baltusrol Golf Club.

night and the next morning we came in and mowed fairways," he continues. "It would have taken us three days to mow fairways prior to the restoration. And the greens have drained well beyond our expectations. The members wanted a firmer golf course, they wanted a faster golf course. We had to modify soils, we had to change our growing medium and we had to install drainage to get the membership the type of conditions they wanted to see on a daily basis."

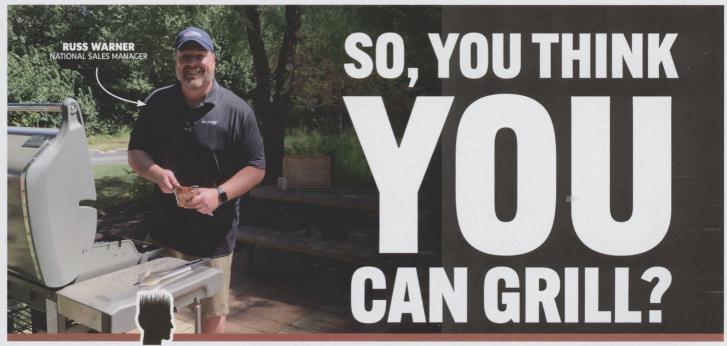
The toughest decision Boring made involves the turf atop the greens. Instead of shunning Poa annua, he opted to embrace it. Similar to fellow New York Metropolitan area puncher Winged Foot Golf Club, also a 36-hole facility with a

major-championship history and courses originally designed by Tillinghast and restored by Hanse, Baltusrol stripped existing Poa annua from its greens and placed it back on surfaces reconstructed to original sizes and contours. Before the project started, Boring's team built a one-acre nursery using greens plugs from the course. Poa annua from the nursery green helped supply sod for greens expanded from 123,000 to 157,000 square feet. Haverdink and the Lower Course crew were responsible for hand watering the Poa annua sod awaiting its return to the course.

"Any time you are trying to keep grass alive in the summer on plastic, when it's just sitting there, time is of the essence. It's not like you could



have it sit there for two weeks and then pick it up," Total Turf's Hufner says. "It adds another layer to the project. Everything is new. The golf course was restored to what it was



GOLF COURSE





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CONSTRUCTION AND RENOVATION



back in the day, but it's all new infrastructure. It wasn't like you were peeling it off and putting it back on in three days. There were a lot of steps to get it back on there."

The project also transformed fairways, with Hanse returning them — and thus enlarging them — to the curvy, wide expanses Tillinghast left the membership in the 1920s. Instead of purchasing pure bentgrass sod, Boring concocted a plan to replicate the longstanding Poa annua/bentgrass mix on the Lower Course. Following a fairway aerification, Baltusrol sent nine tractor-trailer loads of plugs to Coombs Sod Farm in southern New Jersey. The plugs were used to grow the Poa annua/bentgrass mix needed for the expansion.

The architectural, grassing and infrastructure decisions immediately created a feel described as a "new, old course." Through the logistics and politics involved in a massive project amid an unforeseen public health crisis, Baltusrol accomplished its objectives for the Lower Course.

"If we are truly going to do the job, then the scale and scope of what we are doing has to match that original design," Hanse says. "That takes a commitment financially, that takes a commitment from a disruption standpoint, and ultimately that takes a commitment from a maintenance standpoint to put that picture back the best way we can. The greatest satisfaction we get and the greatest compliment that we can get is that this generation of members at Baltusrol will be the first generation in 70 or 80 years to see the picture how Tillinghast painted it versus how the other generations have seen the evolved picture." GCI

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Q&A WITH BRIAN THOMPSON

Turf Marketing Manager at BASF

Brian Thompson, turf marketing manager at BASF, explains how the 2022 Early Order Program has evolved to offer the most powerful benefits for superintendents.

Can you talk about what the BASF theme POWER-FULL means for your customers and what their expectations should be for this year's program?

Our 2022 EOP is full of innovation and full of savings. One thing that was very clear when I took this role is that our customers want programs that are easy to navigate and that offer customization, because it's not one size fits all. There's some fatigue in the marketplace for pre-configured pallets and combinations of products that may or may not fit customers' needs. What I like about our 2022 EOP is that we really have the ability to add more. In this day and age, when our customers have to overcome challenges with labor or price increases, we're adding more rebates and more opportunities for our customers to save.

How is the BASF 2022 EOP different from previous years?

The big difference in 2022 is that we're giving customers an opportunity to trial our new products by adding what we call "innovation kickers" to the rebate levels. With products like Encartis™ fungicide and Alucion™ 35 WG insecticide, we're giving superintendents an opportunity to heighten their rebates. We're offering an additional 2% if they buy minimum quantities of both products. We really feel confident that these solutions are valuable for our customers. They get to trial some new innovations and put them to the test, and we get to reward them for their confidence in BASF. We've built this legacy that our customers trust—that new products from BASF are something they can rely on right out of the gate.

If you had to give one reason why turf professionals should start their season by ordering through the BASF 2022 EOP, what would it be?

We've upped the ante with our innovation kickers that heighten the rebate levels, and this is the time for the best

rebates on the best products on the market. I really feel like our products — specifically in the Design-Your-Own Program fungicide portion of the EOP — deserve to be in a rotation because of their performance. We see a lot of smiles on customers' faces once they use Lexicon® Intrinsic® brand fungicide, Navicon® Intrinsic® brand fungicide, Maxtima® fungicide and Xzemplar® fungicide, and we feel very strongly that with Encartis fungicide they'll feel that their program is strengthened.

What role do Maxtima fungicide and Navicon Intrinsic brand fungicide play in 2022 EOP?

We certainly feel like there is more opportunity to gain a broader acceptance of these two technologies, proving to the marketplace that [they're safe] to use on all turfgrasses, under any conditions, in any weather. They're cornerstones in our product recommendations and very important fixtures in a sound disease management program. I think that we're giving our customers the best chance to be successful. You take products like Maxtima fungicide, Navicon Intrinsic brand fungicide, Lexicon Intrinsic brand fungicide, Xzemplar fungicide, and now Encartis fungicide, and we really feel like we have a great rotation.

How can the online EOP tools help customers know exactly what to expect during the BASF 2022 EOP?

The online calculator is a great tool for customers and distributor sales representatives to build their EOP plans. Every customer has a different volume of acreage to treat, and they all have different pests and diseases that are prominent at their own facility. It's a great tool to help lay out and organize a program that's unique and customized to that property. It's also something that gives us some ability, in the future, to catalogue how our customers designed their programs the previous year so they can design their programs easier in years to come.

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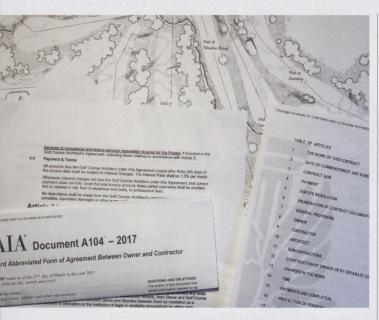
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CONSTRUCTION CONTRACTS

here are a lot of things superintendents find out when they undertake a renovation project. One of them that no one really talks about is the kind of construction contract you enter into. The industry today runs the gamut, from standard arrangements where the architect hands the detailed plans over to a third-party contractor for construction, to a more flexible arrangement called design/build where the process unfolds in the field.

If the scope of needed work is big enough, clubs first must go through the process of selecting an architect. It's a task for which there is no end of self-proclaimed expertise available on any number of social media outlets focused on golf design. Interestingly, there is very little talk of the next phase in such a plan — selection of a contractor and of the type of contract or design arrangement by which the work gets implemented. It's not just some pro forma matter of legalese. In fact, this is where the real success of any master plan really begins to take shape. The best-looking plans of a premier designer will get wasted if they don't properly get articulated in the field.

Clubs, boards and superintendents often end up in uncharted waters. That's because they don't fully anticipate the benefits and costs of different ways of creating a contract that ensures an outcome suitable to the club's culture and patience. Clubs that focus on timeliness, efficiency and getting things done with minimal involvement of club personnel will probably favor a traditional contract where you hand things off to a builder. Those keen to allow for creativity

in the field and are willing to assume the risk — with the likelihood of saving money if weather cooperates — will lean toward a design/build model.

Both have their efficiencies. Both conform to budgets. But the one model relies on the well-established capacities of the big-name firms who are members of the Golf Course Builders Association of America. Among them are the familiar and experienced stalwarts such as Landscapes Unlimited, McDonald & Sons, MacCurrach Golf and Wadsworth. The other draws strength from the growing army of freelance shapers and skilled construction people who tend to work for craftsmen architects on an ad hoc basis. That's how designers like Bill Coore and Ben Crenshaw, Tom Doak, Gil Hanse and Jim Urbina achieve their own stylized look.

If you are working in municipal golf, then city contract rules for bidding virtually require a strict contract with a construction company that follows detailed plans, with little wiggle room for innovation in the field. If adjustments must be made, there's a little give and take on earth moving volumes here and there that contractors can adjust for; otherwise there's formal need for what's called "a change order" to adjust the initially contracted volumes. In this case, the architect's role, following a paper trail of planning, is contractually limited to one of a consultant or observer of the construction process, making sure the master plan is followed, and with the contractor doing all the measurements of volumes, limits of disturbance and feature shaping.

In an effort to save money, some clubs will work with architects and take on the risk of creating their own construction team, along the way stockpiling the needed materials and self-directing the shaper crew. The potential financial gains could be as much as 20 percent — assuming cooperation of the weather and the timely delivery of supplies, neither of which is guaranteed. In this model, the superintendent effectively functions as the owner's representative and takes care, along with the architect, to make sure the plans and specifications are being followed.

There's also a hybrid model, where the club hires out an experienced contractor firm for the bulk earth work, drainage and irrigation while setting aside a carefully defined degree of final feature shaping to the design/build team itself.

There's no one ideal format. It all depends on the club's degree of risk proclivity/aversion and the willingness of the superintendent to get involved on a daily management basis.

The old, established model of a contractor following detailed plans to the letter and number have had to give way somewhat for the sake of creativity and site-specific distinctiveness. Even the biggest firms are flexing to keep up with the trend. It's one of many legacies of the Pete Dye model of building, creating and imagining in the field. A whole generation or two of his former design associates are now out in the field as fulltime design/build folks. They've changed everything. Contractors have had to adjust. So, too, do superintendents. GCI



BRADLEY S. KLEIN, PH.D. (political science), former PGA Tour caddie, is a veteran golf journalist, book author ("Discovering Donald Ross," among others) and golf course consultant. Follow him on Twitter (@BradleySKlein).

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Q&A WITH CON HATHAWA

Technical Services Manager, Turf & Ornamental, Nufarm

uestions regarding naturalized areas or reduced input areas don't only cover how to increase aesthetic quality or increase playability but how to accomplish these things with the fewest inputs as possible. This means thinking about the relative cost of inputs, the time it takes to provide an input, and which inputs are worth that time and money. In the end, the goal is to provide the beauty of contrasting tan colors and inflorescence in the summer with few inputs. However, success will be accomplished by developing a plan to include the most necessary inputs.

Which inputs are most important in naturalized

Because these areas aren't mowed regularly, weeds can get out of hand quickly. Herbicide applications are the most important input to maintain pure stands of whatever was established. When perennial weeds with vast networks of vegetative reproductive parts, like common milkweed and Canada thistle, are left untreated they get stronger and multiply quickly. Turf managers should make time to treat these areas at least once per year; it won't make a huge difference whether it is in the spring when weeds wake up or in the fall as they prepare for winter - consistency is key because weed pressure is constant.

Which herbicides will be most valuable in

Millennium Ultra® 2 is a broadspectrum herbicide that consistently provides great broadleaf weed control on golf courses, including in naturalized areas. Some weeds emerge late and some areas have high weed pressure and require some spot treatments mid-season. Sure Power® will burn-down these weeds quickly and provides activity on a range of mid-season weeds including broadleaves, annual grasses, and many sedges. Those who have established these areas with fine fescues have a huge advantage when it comes to control of perennial grasses sethoxydim and fluazifop can be applied over the top of fine fescue species to provide selective control of many perennial grassy weeds like quackgrass, reed canarygrass, etc.

How are naturalized areas established around

At establishment, seeding grasses at a low rate is key. A playable naturalized area may have 1 large plant per 1 square foot of area. This is a huge difference from the hundreds or thousands of grass plants in the same area mowed from 0.125 - 4 inches, and may call for a vast departure from what we are used to. Accomplishing such a sparse stand of plants is easier said than done, but here are some tips:

- 1. Choose plant species that are clump-forming and won't spread via stolons, rhizomes, or other vegetative structures into open voids. If you are seeding fine fescue species, this may include hard and sheep fescues versus creeping red fescues.
- 2. Decrease your seeding rate. For fine fescues, 10 lbs of seed per acre, or even less, may be sufficient. Set up a few test plots and compare a few low rates so you become comfortable with rates much lower than commonly used.
- 3. Add some annual ryegrass to the mix to provide some quick cover and competition for your desired species - this is a good way to ensure a thinner stand.

4 naturalized areas be

Once these areas are established, they become much more difficult to thin out, so starting thin is key. These options for stand thinning should be tested as research in small areas as they are few and inconclusive.

Keeping these areas thin will help increase plant aesthetics because they aren't competing as much with each other, but thin stands increase the likelihood of weed infiltration, so, again, weed control is key.

- 1. Use PGRs. There is anecdotal evidence of superintendents using PGRs such as trinexapac-ethyl and prohexadione-Ca (Anuew™) to thin stands, but little conclusive research. PGRs are used in grass seed production fields to reduce lodging (plants falling over) and increase seed production, but not necessarily to thin turf stands.
- 2. Use preemergence herbicides. Because naturalized areas produce seed each and every year, a huge amount of seed is being added to the soil seed bank. If these seeds are allowed to germinate and recruit, they may increase density over time. A preemergence herbicide application may limit survival.
- 3. Nonselective herbicides like glyphosate or glufosinate (Cheetah® Pro) could possibly be used in creative ways to thin out naturalized areas. Perhaps a boom sprayer could be used with every other nozzle turned off and a random pattern through the areas. This may seem like an odd method, but it would get the job done quickly.

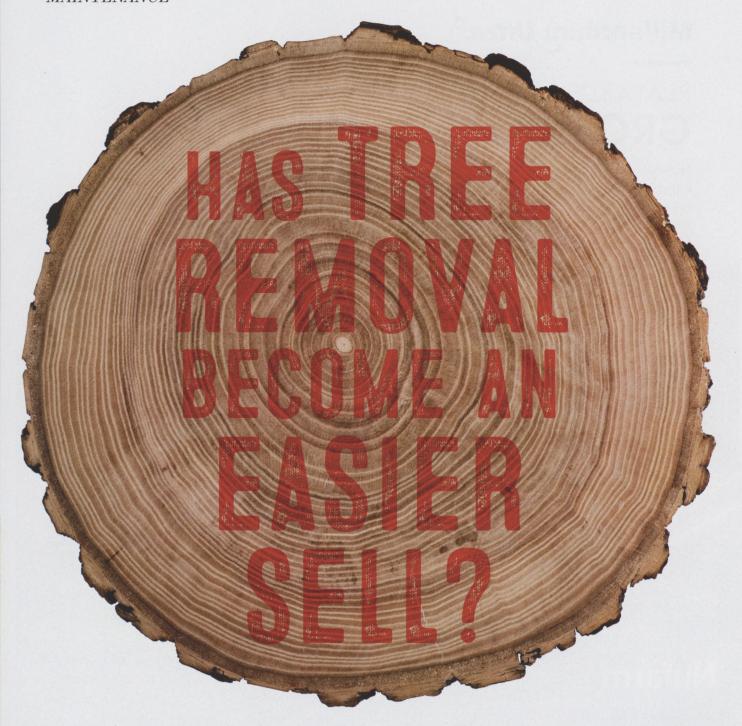


GROWING HARMONY

Naturalized areas can be both beautiful and beneficial to your bottom line. However, it is important to remember that naturalized areas do require some maintenance to prevent weed takeover. Our line of herbicides will help you achieve optimum balance between naturalized, yet managed, landscape settings.



Grow a better tomorrow



AGRONOMICS, SAFETY, PLAYABILITY, VIEWS AND REDUCED MAINTENANCE COSTS. CALCULATED COMMUNICATION AND RESEARCH SHOULD CREATE A STRONG CASE FOR CLEARING THE WRONG SKYWARD HAZARDS.

By John Torsiello

uperintendent Tim Johnston and his grounds crew at Wedgewood Country Club in Stowe, Massachusetts, have been quite busy the past few years with their normal agronomy duties as well as with an ambitious tree removal program.

"In my six years at Wedgewood, my assistant, my owner and I have removed over 660 trees," says Johnston, adding that the labor-intensive work is executed in-house. "On a good day, we could average about eight tree removals and that is eight to 10 hours of back-breaking labor."

Most of the tree work has been and continues to be strictly for turf health. "But there have also been several removed for new projects such as our ninth green expansion and a new chipping area," Johnston adds.

The trees being removed have consisted of hardwood and pine. Explains Johnston, "We are fortunate enough to have a mini excavator, tilt trailer, grapple bucket and stump grinder on property, which makes felling and cleanup a bit easier."

Architect Mark Mungeam, who designed the club's green expansion and chipping area, "pinpointed exactly" which trees to remove, Johnston says. "Opening sunlight and airflow windows, thus reducing root competition, has been crucial to providing top-notch playing conditions."

A side benefit of the project is that the club has been able to sell the wood to members, friends and the community. "Pine logs, which typically haunt a golf course dump site for years," were "unloaded" to local mill yards, Johnston says.

"Membership has been extremely understanding of the tree removal program," he adds. "Sunlight windows for us turn into golf shot windows for them. We've opened some beautiful vistas that highlighted holes and even changed the way some holes are played. Most of the areas have turned into manageable rough, but we have also let some areas naturalize with fescues."

Mungeam has nothing against trees. "I love seeing trees. I love courses where the holes are separated by trees. I appreciate their shade, beauty and contrast," he says. "But there are many courses that are cluttered with too many trees, have trees that negatively impact turf health or have trees that have become too big and impact play." In those situations, he believes, trees should be removed.

Mungeam says there are "multiple" reasons for tree removal, including:

- · Improving turf conditions and health by reducing shade and increasing airflow
- · Eliminating a potential safety issue when trees are damaged or in poor health
- · Restoring corridor width where trees have grown in and made a hole too narrow
- · Improving vistas across the course or of adjacent features
- · Restoring strategic elements that

may have been lost by past tree plantings

· Reducing maintenance costs

Regarding that last reason listed above, Mungeam says trees can add considerable expense to the maintenance budget because of leaf removal and disposal. "There is blowing leaves and cleanup after wind events, a reduction in rough mowing efficiency, the labor involved in hand-mowing or string-trimming around each tree, damage to paths and drainage systems from root intrusion and an increase in chemical applications due to shade or reduced airflow."

Tree "competition" around greens and tees can be "very problematic", according to architect Robert Mc-Neil, cause long-term issues with turf and limit the ability to sustain turf quality in these areas. "One other area that doesn't usually take priority when planning is along cart paths," he says. "Root growth over time can break up asphalt or concrete cart paths."



One of the key reasons to consider tree removal, says McNeil, is "agronomic enhancement." He explains, "Trees, though aesthetically pleasing and providing a natural environmental cooling mechanism, can be impediments to growing healthy golf turf." Root, shade and nutrient competition from trees "too close" to greens, fairways and tees will cause a superintendent "great angst" when trying to grow and maintain turf in these critical areas. "Usually, that means more water, more fertilizer, more fungicide, etc. to win the battle.

It should be noted that some shade through the middle (hottest) parts of the day is beneficial, providing a cooling effect on the turf."

The best time to complete tree work if it involves removal or pruning would be in the late fall and winter months. "During this time the ground is more firm for equipment to reach the work and leaves have already fallen to lessen the amount of cleanup required," McNeil says. Play is also likely dramatically reduced, lessening the effect on daily operations and reducing any safety issues

with players roaming the course.

Experts say that some tree removal projects may be done in-house. It all depends on the abilities of the staff, the equipment available and the complexity of the work. Small trees or even larger trees that are not proximate to high-value amenities (greens, tees and structures) can be removed in-house. More complex projects requiring careful removals close to amenities or neighboring properties will require a specialty tree management firm to be used, McNeil says. "Many firms now have very technical equipment that can remove and dispose of large trees and remove or grind out stumps very efficiently, saving clubs a lot of time and money," he adds.

David Oatis, principal of David Oatis Consulting, agreed with Mc-Neil when he said greens and their surrounds are the "most critical" areas of golf courses, as trees around greens are always the most problematic. "However, when they're located too close to or block sunlight to other critical areas (fairways, tees, bunkers, etc.) they may need to be removed as well. Trees that drop debris on greens, tees or in bunkers are a major nuisance and increase labor. Species with invasive root systems can damage and shorten equipment life and clog and ruin drain lines."

Most courses, Oatis explains, do some tree work in-house, but the amount and extent depends on resources. "Tree work is dangerous and it requires training, so this is not a job for amateurs," he says. "It is critical to have the supporting equipment such as chippers, saws, stump grinders, etc. Most courses contract some work out. Big, dangerous trees that are located close to critical structures are good ones to contract out."

Some courses use contractors to help with cleanup as well. "It's important to remember that getting the trees cut down and cleaned up is only half the job," Oatis says. "Restoring the turf area, which includes stump removal, debris removal, adding

WHAT TO DO ABOUT

The trees are down. Now what to do with them? Well, there are several solutions to getting rid of unwanted logs from tree removal projects rather than pushing them into the woods where they will prove unsightly for years to come:

- Arrange with a local lumber yard to pick up the logs for their purposes. You might even make a little money off the deal.
- nice bonus for hours of tough work.





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topsoil, regrading and reseeding or sodding takes even more work." If requirements are extensive, it may be practical to use an outside contractor, and perhaps even land clearing firms that can do the job much more quickly and efficiently, he adds.

Oatis believes input from a certified arborist should be sought whenever there is a question regarding tree health or safety. Using a consultant who understands golf course architecture, playability, trees and sun angles also is critically important.

"Arborists obviously know trees inside and out, but most don't have a background in course architecture," Oatis says. "Similarly, some architects have an excellent knowledge of trees, whereas others do not. Regardless, it still is critical to utilize a consultant

with an in-depth knowledge of sun angles, because understanding sun angles is critical to identifying which trees should be removed and which removals will be most impactful."

It is also important to consult with membership/players when considering a major tree removal program. "Golfers often like trees and believe them to be important for playability," Oatis adds. "More trees equate to greater difficulty in the minds of many golfers. The truth is, trees often produce weak turf and playability problems, and defending golf holes with trees is usually a bad idea. Trees can fail due to a storm, lightning strike, or pest or disease. Trees are a nice addition and complement many designs, but rarely are they essential."

Architect Jeff Mingay employs a

simple criteria when it comes to removing trees from a course. "If trees pose potential health and safety risks to golfers and course maintenance workers, those need to go first and immediately. Trees that threaten turf health or complicate course maintenance are next on the target list." Those reasons for tree removal, he believes, are "logical" and pretty easy to sell to membership and golfers. "Playability and aesthetic considerations are more subjective and often take a bit more educating as to the reasons why those troublesome trees should also be removed."

Typically, other than health and safety considerations, trees that threaten turf health on greens are most problematic. Trees that shade greens and present root competition



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that threatens turf health and playing conditions on the putting surfaces ideally "need to go," Oatis says.

John Daniels, a USGA Green Section Northeast Region agronomist, believes many golf courses have the necessary equipment on hand to take down trees. "However, the tools needed for the cleanup, like chippers and stump grinders, might be absent and require the assistance of a tree service company," he says. "Just because you can take a tree down in-house doesn't mean you always should. Certain trees require specialized equipment and training to make the process safe and efficient."

Working with an ISA Certified Arborist, Daniels adds, is always a good idea. "They have the necessary training to assess the health of individual trees and help answer questions regarding safety." Depending on the scope of the tree work, it might be worth soliciting the opinion of an architect to help answer questions about playability and design intent of specific holes as they relate to trees.

Daniels says trees are "dynamic," meaning they must be occasionally pruned and removed based on a number of different factors. "Just because a tree wasn't a problem a few years ago doesn't mean it shouldn't be removed now. Trees grow and the problems they can cause also grow each year if not properly managed."

Mungeam says the best way to sell tree removal to customers is to clearly convey why the removal is proposed. The superintendent should make it "difficult" for the members to disagree

with the removal request. "It's a multipronged approach. Superintendents should first identify and make a list of what trees they feel are impacting turf health. Use an arborist to identify the hazardous trees and a golf architect to identify the trees impacting strategy and playability. Create a list of the trees backed by the experts' reports and some photographs of the trees recommended for removal."

In the end, when done in a studied and careful approach, tree removal projects can improve agronomics, reduce labor, enhance the playability of holes for golfers and add to the overall aesthetics of a course. GCI

John Torsiello is a Torrington, Connecticut-based writer and frequent Golf Course Industry contributor.



RFHEADS GUIDE TO

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WHAT YOU NEED TO KNOW ABOUT SUPRADO

By Dr. Ian Rodriguez, Quali-Pro Technical Services Manager

WHY DID QUALI-PRO DEVELOP SUPRADO AND HOW DID **QUALI-PRO DEVELOP** SUPRADO?

Quali-Pro

Novaluron, Suprado's active ingredient, was established in agricultural and professional pest control seg-

ments, so we set out to develop formulations for turf applications. We were screening several for controlling a number of turf pests and did an initial study on ABW with Dr. Ben Mc-Graw at Penn State in 2019. It performed better than anything he'd seen in a while, so we expanded testing. As it turned out, Suprado proved to be even more effective and versatile on the pest than we expected. With that kind of efficacy, it was a no-brainer to continue with this new-to-turf mode of action for such a difficult pest with known resistance concerns. Three years of ABW trials with multiple cooperators led to the EPA registration we received in July.





Novaluron is an insect growth regulator (IGR) and represents the first IRAC Group 15 product labeled for turfgrass uses. It inhibits chitin synthesis in immature insect growth stages. This leads to abnormal or disrupted formation of a new exoskele-

ton when molting, causing death. Although adult insects no longer need to molt, we have also found that Suprado has a strong effect on breeding adults and eggs, resulting in excellent prevention of the damaging larval stages.

WHERE ON A GOLF COURSE CAN SUPRADO BE USED?

ABW damage can become severe on any close-mown turf with a significant amount of annual bluegrass. Overwintering adults migrate from wooded areas to fairways, tees and greens, all of which can show damage when large larval stages have been allowed to develop

unchecked. It is not uncommon to see well more than three ABW applications per season, even on fairways.

HOW SHOULD GOLF COURSE MAINTENANCE PROFESSIONALS USE SUPRADO?

Suprado can fit into a number of program timings providing an alternative chemistry option with excellent results. It is well suited for any of the first three typical application timings: adult peak migration, internally-feeding, small larvae (L1-L2) and medium-sized larvae (L2.5-L3). It has also shown good results against larger larvae in the soil, which would make it an excellent choice for summer apps where growth stages are increasingly asynchronous.

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▲ Southern Hills Country Club in Tulsa, Oklahoma, installed a hydronic system under 25 surfaces.

Drip irrigation and hydronic systems offer distinct advantages for course care. These technologies require faith in what isn't easily seen — though the results are clearly visible.

By Lee Carr

ommon characteristics between subsurface drip irrigation (SDI) and hydronic systems include more flexible maintenance routines, environmental benefits, cost efficiencies and an untapped potential.

In 2019, Southern Hills Country Club in Tulsa, Oklahoma, reopened after a major renovation with a hydronic system installed under 25 surfaces, including course greens, the putting green and the nursery green. "It's a game changer," Southern Hills superintendent Russ Myers says. The Club at Las Campanas in Santa Fe, New Mexico, is using SDI for bunkers, tees and on some edges of fairways and roughs.

"Courses are often familiar with using SDI on bunker faces but installing this technology in teeing grounds is a new concept," says USGA Green Section West Region agronomist Brian Whitlark. "I don't think cost is a problem as SDI is not really more expensive than PVC overhead irrigation, but the SDI can't be seen while it's working and that makes people uncomfortable. We are seeing a 50 to 80 percent reduction in water use with drip compared to overhead irrigation."

Research on subsurface drip irrigation is being conducted at The Club at Las Campanas.

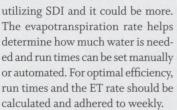
In 2016, Dr. Bernd Leinauer, regents professor and turfgrass extension specialist at New Mexico State University, received a grant from the USGA to learn more.

SUBSURFACE DRIP IRRIGATION

Leinauer worked with Tom Egelhoff, director of agronomy, and his team at Las Campanas. The Sunrise and Sunset courses, both 18-hole Jack Nicklaus Signature designs, have bentgrass tees, greens and fairways. The rough is bluegrass and there are five teeing grounds on each of the 36 holes. The research started with six tees and testing materials donated by Toro and Rain Bird. Two years later, Netafim and Hunter joined the research. The four product lines are currently being tested on three tees each.

SDI requires placing drip lines four to six inches beneath the surface to supply water directly to the root zone through emitters,

> ideally spaced 12 inches apart. The flow rate is between a half-gallon and two gallons per hour and most emitters are pressure-compensating. The overarching benefit is water conservation as SDI provides a reduction in the amount of water needed to supply an area of turf. Las Campanas is consistently seeing a 50 percent reduction in water use for areas



SDI makes irrigation more flexible because the watering window is extended. The course can be watered as people play or when off-peak water rates are available. "We normally water the tees at 6 a.m," Egelhoff



Normal maintenance takes place on SDI areas. "Our first few years having SDI we would verticut those tees aggressively instead of aerating them. Now, we pull shallow plugs on the tees in spring or fall," Egelhoff says. Regarding maintaining the SDI system, "period-

ically, check the Y-strainer before the valve. That's a little bit extra but it's not cumbersome," he adds.

It's clear if something is wrong. "Clogged emitters create round areas of dying or stressed grass and there you dig," Leinauer says. "Emitter clogging is a concern with very hard water but with a sulfuric acid injection it can be overcome."

SDI also prevents wind drift, spray overlap and overspray, particularly useful in the desert. Eliminating overspray saves labor hours managing unwanted plants, and on island tees, SDI creates defined contrast along the edges. Water is not lost through evaporation and a lower operating pressure can be used to save energy. With carefully controlled moisture levels, disease pressure can be reduced.

Drawbacks for drip irrigation include the upfront cost, disruption for installation, no deep-tining and difficulties determining setup. Granular applications require consideration, though they can be hand watered or washed in by the rain (tricky!) or use overhead irrigation. It is possible to deliver liquid fertilizer through the SDI system. Longevity of the systems is unproven, but SDI systems should

be as durable as standard irrigation

Another advantage to SDI is that it makes it easier to use effluent water. By law, many courses using effluent water must keep sprinkler heads a certain distance away from residential or commercial boundaries. With SDI, that is more manageable. "The fairways are close to some external properties at Las Campanas so using SDI in some fairway and rough areas eliminates the risk of wind drift or overspray," Leinauer says.

Mowing is unaffected. "If anything, you don't have to worry about sprinkler heads being damaged when they stay up after sprinkling. SDI, overall, has lower maintenance than overhead sprinklers," Leinauer says. And when SDI is used near bunkers, there is no water washing out the sand.

Costs of systems vary a great deal and depend on soil type, product type and amounts of hardware required. Costs are offset by relative water rates, maintenance benefits, changes in labor and playability. Honestly, there's a lot to think about but while you're at it, another ground-breaking technology (terrible pun?), is hydronic systems.



▲ Brian Whitlark

HYDRONIC SYSTEMS

A hydronic system is a closed loop roughly 12 inches below the surface that can circulate warm or cool water to alter the temperature of the soil. It operates in the same way that a heating/cooling system does for a house, but instead of circulating air, liquid is circulating (water, gaseous water or a water-solution).

At Southern Hills, a few people on the staff know how to work the system and it's not complicated. "There are set points and we monitor that it's operating properly," Myers says. "With our system, we know that five inches down we are 15 degrees cooler on the greens that have it."

The hydronic system has shifted labor requirements. To keep the bentgrass greens cool during summer, hand-watering them requires four skilled staff members watering from 5 a.m. to 5 p.m. for about 12 weeks. "You are locking those people in to that task every day and it's a huge commitment," Myers says. That affects water use and playability. "Now, over those 12 weeks you might have 15 to 20 days where you hand water spots and you might send one person around in the afternoon to help dry spots on greens," Myers says. The need for fans (previously two per green) has been eliminated and those are significant changes.

Myers is effectively managing turf in a more controlled environment. When it's too hot, the grass is challenged by a temperature where it won't photosynthesize properly. "It's not able to handle stresses and traffic, won't recover from ball marks and struggles with 90 days of rolling and mowing in the heat," Myers says. Reducing temperature stress enables Southern Hills to mow six days a week and maintain consistent green speeds year-round. "We lose a little bit of firmness but not as much as we would without the hydronics," Myers says. The risk of having to close the course due to heat making areas unplayable is also almost eliminated.

Advantages of SDI

- Water is applied directly where it is used, to the nearest inch
- ✓ There is no overspray, wind drift or sprinkler overlap
- ✓ Helpful for effluent water with boundaries (for example, with residential property)
- ✓ Can irrigate while people are playing, during off-peak water rates and with reduced pressure
- ✓ Pesticides and fertilizer can be delivered directly to the root zone minimizing exposure for wildlife and
- ✓ Reduction in disease pressure due to carefully controlled moisture levels

Drawbacks of SDI

- × Deep-tining is not possible (shallow coring is no problem)
- × Granular fertilizer or other applications needs to be washed in (hand watering, overhead irrigation, or rain; liquid fertilizers can be delivered through the SDI system)
- Clogged emitters (become obvious quickly, can be cleared)
- Root intrusion (into the system or from nearby trees usurping the water)
- * Improper installation causes problems (just like an overhead irrigation system)
- × Upfront costs and disruption for installation

Another benefit of hydronics is a more flexible schedule for aerating. Courses normally aerify as close to the oncoming heat as they can, usually May. Southern Hills doesn't have to, translating to an additional four weeks of premium playing conditions. Aerification happens when it needs to be done instead of on a rigid schedule, so maintenance practices affect golfers as little as possible. October aerification can be pushed into November by using hydronic heating, to help the grass grow and recover from aerification. Myers can also verticut throughout the year, when normally that would be too risky in the summer. "I am a lot more comfortable executing maintenance practices in stressful environments than I would be without the temperature control," Myers says.

The Southern Hills system was sold through Precision Small Engine out of Pompano, Florida. The units are built by RAE Technical Systems. There are components that may need to be replaced occasionally but the system should last around 30 years. The hydronics system works even more efficiently than expected, so scalability is something to consider.

"The more it is in use, the more that can be learned about what is optimal for each site and location," Myers says. "When I worked with hydronics at Augusta National Golf Club and Los

Angeles Country Club, and as I speak to other superintendents, it's hard for people to understand. I couldn't be a bigger believer in this technology.

"To install it, the greens need to be rebuilt and the environment needs to make sense," he adds. "It's in its infancy but don't miss the opportunity to put the infrastructure in. You have electrical costs and expenses but as far as what you are providing, in certain places, if you don't do it when you next renovate, by the time you renovate again, everyone around you is going to have it, making it hard for your property to compete."

The members at Southern Hills are willing to invest in the playing experience and the membership at Las Campanas is supportive of sustainable development, with both clubs utilizing available technologies to achieve their goals. "In our industry we should be taking more time to explore," Egelhoff says. "If no one takes a chance on the technology and it doesn't have the support it needs going forward, we can't get better."

The work of SDI and hydronic systems is imperceptible to many, but for course maintenance, the potential is easy to see. GCI

Lee Carr is a Northeast Ohio-based writer and frequent Golf Course Industry contributor.



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MORAGHAN continued from 8

TREATS

New golfers

Lots of them, and many of them on your course. They're out there enjoying the challenge, the fresh air, being outdoors and being with friends — the same qualities that have made golf enticing for generations. Besides pleasing these new golfers with your success providing a well-cared-for facility, you should be talking to them about what you do and how you do it. Communication and education.

Tools, knowledge and resources

Do you know any other industry that is so encouraging of its constituents to work together? To communicate, share knowledge and help one another?

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Every weed scientist, soil physicist and entomologist is a "treat." Ones you should enjoy.

Work environment

Your "office" spans at least 100 acres of turf, trees, flowering plants, water and much more. Sure beats a desk and filing cabinet. With today's focus on woring from home and remote offices, we're lucky to work in spacious, open-air environments with Mother Nature our office mate (until she gets ornery, of course).

We also work with others who like to be outdoors, getting their hands dirty to make something so beautiful. Even with the drought, the rain and the worms, you shouldn't take where we work for granted.

Summer fun

I love summer, always have. So, I could never understand why superintendents want summer to end. Yes, most of us forfeit our summers for the "good of the game" and for the enjoyment of others. But it's also the time that we get to do what we do best.

That said, we each need to find a way to make more of our summers. Perhaps the millennial philosophy of "me time" has some merit. Take time to enjoy your family and friends away from the golf course. Make the most of summer where you work but also in your personal life. Don't wake up 30 years from now having missed all those summers.

But fall is a treat, too

Shorter days, longer nights, cooler temperatures. In much of the country, leaves are turning, kids are back in school (truly a special treat this year!), and we feel the cycle of life back in step. Apples, pumpkins, football ... and maybe a chance to catch our breaths. Even if just a little bit.

And that rare treat ... a 'thank you'

The final, but sweetest, treat is when someone takes the time to thank you for the job you do. For making "their" golf course beautiful and fun, and special to them.

In truth, you shouldn't need someone else to tell you when the course is just right. You know when you and your team are doing a good job. Never forget to take pride in a job well done — and be sure to let your crew know they're doing a great job,

But if someone else notices and tells you so? That's the treat we all live for. GCI

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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.



CLEANUP LAP MOWER GUIDE BAR

very consistent cleanup mower leading-edge along with keeping the 30-inch collar width consistent also is being achieved when they are being mowed three to four days per week. The 1/8-inch thick flat steel bracket is approximately 18 inches long by 1 inch wide, bolted in place. 1/8-inch nuts are welded to both upturned ends of the bracket. The 1/8-inch diameter threaded rod can be positioned on either side when mowing clockwise or counter-clockwise, which are alternated during each mowing. The end of the threaded rod has a 1/2-inch thick by 5-inch long mud flap made of recycled rubber and bolted in place, for guiding the mower operator to the outer edge of the



collars. Most of the materials were in stock, while the threaded rod cost less than \$20. It took less than two hours to build. Lucas Lownes, superintendent at the Aspetuck Valley Country Club in Weston, Connecticut, got this idea when he worked as an assistant at Muirfield Village Golf Club and modified the idea to fit his needs. Lester George is the renovation architect.



DURABLE, DECORATIVE WALKUPS

he former crushed gravel, used on the walkups from the cart paths to the tees and greens, easily tracked onto the playing surfaces, which required four to six hours per day to keep the desired look, for cleanup, raking and to reduce the cost and labor of grinding the reels and bedknives from gravel damage. Kafka Granite Polymer "Autumn Blend Color" was installed after each area was



prepped to a 2-inch depth, compacted, material installation and either wheel-packed with a utility vehicle or rolled with a larger asphalt roller. The crushed granite material is shipped in bulk, where one ton will do approximately 150 square feet at a 2-inch compacted depth at about \$2.13/square foot. It took just a few hours to install 1,000 square feet after site preparation. "The switch to this material provides a more finished look to our walkups, there is no more cleanup and messy appearance and it still retains the natural look that we desired," said Ryan Knapp, superintendent at the Stock Farm Club in Hamilton, Montana. Assistant superintedent Nick Harreld spearheaded the installation of the material. Knapp and Harreld are very pleased with their handiwork. Tom Fazio and Ron Smith are the architects.



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COUNT YOUR **ELBOWS**

e hear the phrase "managing player expectations" all the time. These words are normally in the context of course conditions, and great superintendents are good at managing or tempering those expectations, so golfers do not come away disappointed following their round.

But what about other expectations? Ever play a new course that you have heard nothing but grandiose things about only to come away underwhelmed? I know I have on numerous occasions.

I had a history teacher in high school who used to say, "Opinions are like elbows ... everybody has two." I first played Southern Pines Golf Club in 2008. We had just finished planting the last fairways of our renovation at Carolina Golf Club and the past president thought it important I see two other courses originally designed by Donald Ross: Pine Needles and Southern Pines.

Pine Needles had hosted three U.S. Women's Opens (in 1996, 2001, 2007) and was renovated by John Fought prior to that 2007 event. Pine Needles was polished and highly conditioned while Southern Pines was raw, "rough around the edges" and in need of a makeover. With similar features to ours, I could easily envision what a renovation would produce at Southern Pines.

Since that initial visit in 2008, I have lost count of the number of times I have played both courses along with neighboring Mid-Pines. These are three classic golf courses designed by Ross, residing in the shadows of the towering pines cast by his most famous course in the area, Pinehurst No. 2, which I played in 2012 shortly after the famed Coore-Crenshaw renovation.

After all these visits and trips around the courses, Southern Pines became my favorite. I genuinely thought it might be the best golf course in Moore County, despite its Spartan appearance and upkeep. Every time I played the course I could see past the present and envision the past. What resided in my mind was truly special.

Last month Southern Pines reopened following a major renovation led by Kyle Franz. Following the success of the Pinehurst No. 2 renovation in 2011, Franz, who worked as a shaper for Bill Coore and Ben Crenshaw on that project, took up residence in the Pinehurst area and began renovation work on Mid-Pines. That work was highly touted. He then parlayed that experience into the opportunity to renovate Pinehurst No. 3 in 2017, a golf course barely measuring over 5,000 yards and playing to a par 68.

In 2018, Franz began renovations to Pine Needles as they were preparing for the 2019 U.S. Senior Women's Open and the 2022 U.S. Women's Open. Every time I play Pine Needles, I see a little more of Mid-Pines as he continues to tweak and adjust the rustic appearance. Both courses have been renovated to look like Pinehurst No. 2 with vast open sand scrapes and native grasses in lieu of thick, manicured rough.

Which brings me back to Southern Pines. The group that owns and operates Pine Needles and Mid-Pines purchased Southern Pines in late 2020 and wasted no time in giving Franz the opportunity to restore the golf course.

I traveled to Southern Pines this past April to see the ongoing work and was immediately impressed with the tree removal, creation of sand scrapes and the bunker renovations that would restore the rugged character to this 1906 Donald Ross design.

The course reopened last month following the greens conversion and I could not wait to play it. For 13 years, I have imagined what this golf course could be. But I somehow knew it was not going to live up to my expectations.

I loved the golf course and did not love it at the same time. The view of the 11th hole from the eighth green was breathtaking, and the repositioning of the 11th green nearer the water looked like it had always been that way, simply brilliant.

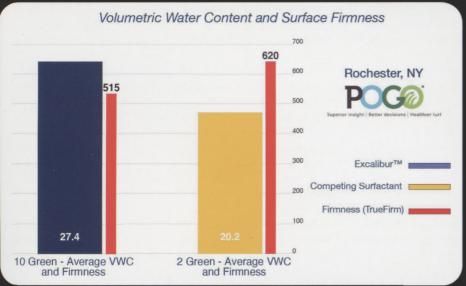
But I believe the enlarged greens probably possess less pinnable area than prior, and the bold contours and slopes within will be difficult to maintain. Visually, I would describe the golf course as Pasatiempo meets Tobacco Road, though I have never been to Pasatiempo. The golf course is perfectly suited for walking, although the rerouting of nearly all the natural paths creates awkward moments getting from green to tee without interference.

I waited 13 years for this renovation, and I am happy this vintage Ross course finally received the long-awaited makeover it has needed. But the makeover was too extreme for what this girl really needed and the hidden gem those of us in the know adored for years no longer resembles her former self. I miss her already. GCI



MATTHEW WHARTON, CGCS, MG, is the superintendent at Carolina Golf Club in Charlotte, North Carolina and past president of the Carolinas GCSA. Follow him on Twitter @CGCGreenkeeper.





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