Golfdom
The Magazine for Superintendents

Print

Construction

Let It Drain

November 1, 2005
By: **Peter Blais**
Golfdom

The three most important words in real estate are: location, location, location. Arguably the three most important words in golf course maintenance are: drainage, drainage, drainage.

The time-worn real-estate adage is a cliche. The parallel saying to golf course maintenance, however, reveals a basic truth.

"Drainage is the key to turf management," says Scott Cybulski, superintendent at Falmouth (Maine) Country Club.

That goes for greens, tees and fairways.

That said, adding drainage to existing greens is a touchy operation that most superintendents seem to believe is best left to specialists. Britt Pollock, superintendent at Northwood Country Club in Meridian, Miss., knew he had to do something to the push-up greens at his 75-year-old course after they endured several consecutive wetter-than-normal summers. Back-to-back summers with many rainy days often meant several days between mowings and mowers occasionally sinking into greens. The course's green committee was convinced it had to add new drainage, although members did not want to go to the time and expense of shutting down the course and putting in United States Golf Association (USGA)-spec greens.

Superintendents are looking for drainage solutions that are less-invasive.

"I learned a long time ago that if you do not have to do a job like that in-house, do not do it," says Pollock, who contacted Marrero, La.-based Turf Drainage Company of America to complete the project. "It's too much trouble. It's easier to hire some good people to [do the job]."

Dennis Hurley, president of Turf Drainage, told Pollock that his company could remove the existing sod, add drainage, replace the sod and have a green back in play within 48 hours.

"We strip the sod from where the drain lines will be put in, mark each individual piece of sod [potentially hundreds] and estimate how much they might stretch," Hurley says. "We put in the drainage, replace the sod and the golf course can put the green back in play the next day."

Bud White, senior agronomist with the USGA's Mid-Continent Region, agrees that installing drainage on greens can be a tricky proposition.

"Ideally, sod should be lifted out carefully and then put back on greens in the same orientation it came out," he says. "Otherwise, the sod lines will always remain visible. They need to be aerified and topdressed to make them seamless with the rest of the green again."

Cybulski says he has repaired crushed drainage pipe on his 20-year-old greens but done little else in terms of drainage work to putting surfaces.

Many Northeastern U.S. courses with older push-up greens have contracted with specialized drainage companies. Six years ago TDI International, through its recently renamed subsidiary, XGD Systems of Stuart, Fla., added internal drainage to the fourth green at Rockrimmon Country Club in Stamford, Conn.

"It turned our worst green into a very playable one," says certified superintendent Tony Girardi. "It took about four days to do one green. They worked off plywood the whole time. They [dug] down 14 to 16 inches with a trencher, excavated all the spoils and took them off the green. They laid down a special 2-inch pipe and back-filled with putting green construction mix.

"Then they laid the 7-inch pieces of sod they had carefully removed, numbered and rolled up on the side. They put them back in the exact same order and tamped them all down. When they were finished, you could cut a cup and have the green playable that same day."

<!--pagebreak-->

Fairway and bunker drainage projects are more likely to be done in-house, White and others agree.

Every fairway drainage line should have two components, White adds. First, the upper end should have a flush out so it can be cleaned on a regular basis. Second, drain lines should have a locator wire, usually a 14-gauge piece of irrigation wire, laid in the trench so water locators can be hooked to it to find the drain line in the future.

When the Seminole Golf Club flooded a few years ago, it installed a siphon drainage system from Turf Drainage Co.

Fairways are a combination of French drains and catch basins, depending on the application, White notes. Bunker projects generally involve a French drain line with fabric laid over it and then sand. Tees are basically the same as fairways, although the best way to drain tees is to laser level them as opposed to adding drain lines. Laser leveling tees usually costs about $1.20 per square foot to level and resod.

"Drainage is simply a matter of getting materials in the right place and having the water fall on the pipe," White explains. "Some of the most important things are using proper gravel and quality sand. You should not sod over French drains because sod can seal them off and they will not function properly. If you have to sod a French drain, the sod should be aerified the first grow-in season after sodding. Aerifying should be done a minimum of three to four times, the cores removed and the holes filled with sand to remove the surface tension the sod layer creates."

Many fairway projects can be completed with minimal disruption to play and revenue by performing work in stages, says Hurley, whose firm specializes in improving drainage at existing courses. "We provide an alternative to completely closing down the golf course ... [instead] closing a hole at a time and then reopening it when the work is done."

Regarding fairway drainage, it's important to be able to define the problem first. Does it result from surface water or seepage? Surface water is anything that streams or puddles. Seepage is anything not seen on the surface but interferes with playability. Seepage can come from several different sources, such as one-time surface water that could not flow off the property or a high-water table associated with surrounding bodies of water.

"To get rid of surface water you have to design the right type of inlet collection system," Hurley explains. "You have to get as much water off the property through open inlets as possible.

Water is less expensive to drain as surface water than seepage water. Once trapped in the profile as seepage water, you have to dig deeper and put in more permeable material in the profile. But if you just look at draining off surface water, your project will probably fail. There will always be seepage water that has to be designed for and removed."

White and Cybulski note that drainage projects are usually done later in the season — late summer and early fall in the Northeast, late fall and early winter in the mid-continent region — when the ground is driest and the impact on play is minimized.

Green committees rarely realize the man-hours needed to remedy a drainage problem or the burden it may place on a superintendent to perform the job in-house, Hurley says. When contacted by a superintendent, Turf Drainage first estimates the man-hours needed to complete a project, which the superintendent can then present to a green committee.

Hurley described one instance when a committee planned to have its superintendent undertake a drainage project using four members of his own maintenance crew. The committee believed the workers could perform their mowing assignments in the morning, work on the drainage project in the afternoon and complete the project in a few weeks without having to pay them any overtime.

<!--pagebreak-->

Under that scenario, Hurley estimated it would take the superintendent's crew 40 weeks to complete the job. Not only would the course be torn up that long, but the club would also have to pay rental fees on the excavators, trench compactors, harvesters and other equipment needed to finish the work. On the other hand, Hurley estimated an outside contractor, working full time on the project and using its own equipment, could complete the job in just nine weeks.

The greens committee eventually chose the contractor.

Peter Blais is a freelance writer from Monmouth, Maine.
