

Here's what you need to know
before you lay pipe

BY FRANK H. ANDORKA JR.,
MANAGING EDITOR

BUILD A BETTER Irrigation System

Pat Gradoville, superintendent at Palos Verdes GC in Los Alamitos, Calif., refuses to call himself an irrigation expert, despite his extensive experience in both renovating and constructing systems during his 15-year career. He has supervised installations on new courses and overseen renovations on systems that outlived their usefulness.

Gradoville says building an ideal irrigation system is as much art as science.

"To call myself an irrigation expert would be a misnomer," Gradoville says. "It takes time and research before you can install a system to serve your course's needs effectively."

No matter how much experience you

have, it's always good to review the steps you should take to avoid creating irrigation headaches for yourself in the future, he says.

Hire an irrigation consultant

Bob Wren, superintendent of Chantilly National Golf & CC in Centreville, Va., says most superintendents have a difficult time designing irrigation systems on their own.

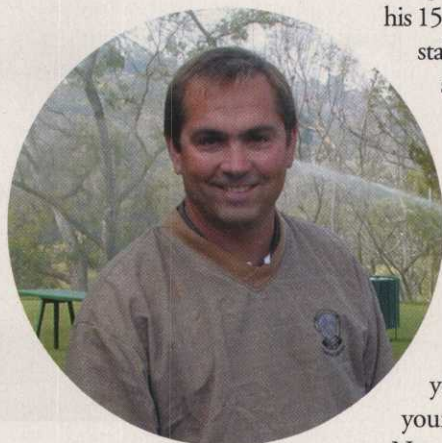
"Spend the money and hire an outside consultant," Wren says. "They're the experts. They'll be able to look at projects and point out potential problems you never considered."

Wren says irrigation consultants possess experience with a variety of systems, so they can recommend a system to fit your budget. (*For more on the advantages of hiring a consultant, see "Smart Design Pays Dividends," page 31.*)

Insist on the largest pipe you can afford

Pipe size, particularly on the main line, can define the success or failure of an irrigation

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Pat Gradoville, superintendent at Palos Verdes GC in Los Alamitos, Calif., draws on his vast experience when he installs irrigation systems.

MIKE KLEMM

Irrigation System



PAT GRADOVILLE

Pull enough wire while trenches exist so future expansion doesn't force a similar disruption to the course.

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system, says Steve Kurta, superintendent at Tuscarora GC in Macellus, N.Y. He suggests installing pipe large enough to handle water speeds of 3 feet per second.

Gradoville recommends using nothing less than 4-inch pipe for the mainline and preferably nothing less than 6 inches. At his course, the mainline consists of 10-inch pipe, with successive branches getting smaller by 2 inches. The pipe at the smallest branches is 4 inches.

"Sizing your pipe should be the first item on your agenda when you're talking to your consultant about design," Gradoville says. "If you pick the wrong-sized pipe, you're setting yourself up for major problems."

Plan for further expansion from the start

Whether you're doing a renovation or installing a new system, you should know your club's 10-year construction plan, Wren says.

"A common mistake is building a system that serves your course now without accounting for future expansion," Wren says. "If the course wants to add another nine holes, you need to plan for it. You need to be thinking 10 or 15 years down the road."

Pull enough controller wire throughout the course to accommodate future system additions,

Companies Say They Haven't Abandoned Affordable Irrigation

The irrigation industry has come under fire recently from superintendents, consultants and developers for focusing on high-tech gadgets for high-end courses. Critics say the industry has forgotten about providing affordable irrigation systems for low- and medium-budget clubs.

Steve Snow, director of golf renovation and sales for Toro Irrigation, admits high-end golf courses received most of the attention during the recent course construction boom from 1997 through 1999.

"During the hey-day of new golf course construction, when people built 400 to 500 courses per year, the majority of the courses were high-end projects," Snow says. "Irrigation companies found themselves caught up in the building boom. Now that it's over, it's time to reassess our strategies so that we can appeal to all golf courses."

If superintendents research different systems, they will find that low- and medium-budget products exist, says Phil Robisch, marketing and promotions manager for Hunter Industries.

"The reason you don't hear about them is that marketers must talk about the new stuff with all the bells and whistles," Robisch says. "After all, it's where you've spent all your research and development money. That doesn't mean, however, that lower-end products aren't available."

Robisch says the less-expensive alternatives, such as controllers without features like satellite control, are available in commercial applications, which can be adapted.

Matt Zirkle, marketing manager for Rainbird Corp.'s Golf Division, says the industry's new focus will be renovating older systems rather than installing systems at new

courses. He says companies realize they must do a better job of segmenting their products to reach all market levels.

"Many courses would love to buy irrigation systems that don't have all the fancy add-ons," Zirkle says. "We have to make sure we reach them as well."

Snow says the industry is developing lower-cost personal-computer control systems for the lower-budget courses. He also says Toro is giving courses the option of financing the systems over five to seven years. But Snow says some of the criticism his industry has received about the expense of its technological innovations is unfounded.

"We don't introduce technology just for the sake of introducing technology and driving up the price," Snow says. "We follow the market."

— Frank H. Andorka Jr., Managing Editor

Gradoville says.

"You should be able to install future sprinkler heads with few problems if you pull the wire during the original installation," Gradoville says. "You don't want to install wire once the system is complete."

Don't scrimp on the zone valves

Paul Diegnau, superintendent of Keller GC in Maplewood, Minn., says you need to isolate as many areas of the golf course with individual shut-off valves off the main line as possible. He knows from experience: He has few isolation valves at his course.

"You don't want to find yourself having to shut down the whole system every time you want to make a repair, which is what I sometimes have to do," Diegnau says. "You don't want to put all the turf at risk through a lack of water if you just have a pipe problem on No. 14. That's ridiculous."

Wren suggests superintendents divide each hole into three distinct irrigation zones: tees, greens and fairways.

"You shouldn't have to punish the entire golf course to make repairs," Wren says. "You can't have too many isolation valves."

Make sure your pump house has a variable frequency drive (VFD)

A VFD slowly increases the amount of water flowing through the irrigation pipes when the pump first turns on and reduces the water flow gradually when the system shuts off, Diegnau says. This process subjects the pipes to less strain, thereby preserving the system's joints.

"This is especially important if you have glue joints," Diegnau says. "If you have a system that goes on full blast from the beginning, you're going to wear those joints out fast."

Since glue joints break down more easily, Kurta says superintendents should install duct fittings and gasketed joints.

"Gaskets will last you far longer than glue joints," Kurta says. "It's more expensive at first, but you'll save yourself money in the long run."

Choose a control system with which you're comfortable

Resist the temptation to buy a system that's fancier than you need, Wren says. If the sales pitch for a

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Smart Design Pays Dividends

An irrigation consultant can cut costs, improve aesthetics

By Brian Vinchesi

I recently spoke with a superintendent about why he should not be satisfied with manufacturer/distributor/contractor-prepared irrigation designs and consider retaining an independent irrigation consultant. I mentioned how a qualified consultant can help save water, energy and money for clients. As president of the American Society of Irrigation Consultants, I noted the qualifications and expertise of the professional members of this organization, many of whom have spent decades in irrigation. Then he interrupted me, cutting right to the chase.

"You're preaching to the choir," he said, pointing out that he and his peers are well aware of the reasons to retain an independent consultant. "You need to convince my boss."

Thus, I share a few reasons — from the standpoint of the greens chairman, club manager, pro, owner or club leader — to retain an irrigation consultant. The reasons are mainly financial and visual.

In my experience, it's often wise to start by showing how independent irrigation consultants can save money — and they do.

First, a good irrigation consultant knows all brands of irrigation and related products and can therefore ensure that a client obtains the finest product at the best price. Second, a consultant can work with a superintendent to design an irrigation system for maximum efficiency, saving water and energy — and money. Many of my peers in ASIC tell me that clients routinely "pay" for the consulting fee with the savings from having a more efficient system. Third, in our design and installation oversight work, we can guard against technical and mechanical problems that could eventually necessitate expensive below-ground repairs.

The argument about cost savings is usually the most tangible and easily argued position. Following an irrigation consultant's audit, it usually is not hard to estimate the financial benefits that might be obtained from lower

water and energy bills, not to mention maintenance.

Just as important are the above-the-line, above-the-ground benefits of hiring an irrigation consultant. A more efficient, smarter system ensures a better playing surface, which promotes happy members and players. After all, retaining — not to mention recruiting — members and players is ultimately what any manager or owner is after.

An organization of professionals within the irrigation industry, ASIC was founded in 1970 to provide a forum

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where irrigation design professionals could exchange information and advance their skills. Our dozens of professional consultants are well-qualified to provide information detailing the effective use and management of water and other natural resources.

For a list of current ASIC members or additional information about irrigation, we invite you — and your boss — to contact ASIC headquarters by telephone at 312-372-7090, by mail at 221 N. LaSalle St., Suite 3500, Chicago, 60601, or online at www.asic.org.

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"I couldn't live without my radio controller."

—PAUL DIEGNAU

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high-tech computerized system seduces you, you may end up with features that you don't need.

"You're the one who's going to have to program it," Wren says. "While you may think you need all the features when the salesman is talking to you, you regret that decision later."

Do insist on a remote controller, however, Diegnau says.

"I couldn't live without my radio controller," he says. "It makes you more mobile and you can react more quickly if there's a problem."

Investigate your local service providers

"You can have the best system in the world,

but if your service is awful, it won't matter," Kurta says. "You need to know who you can turn to if you have a problem and how quickly someone can fix the problem."

Diegnau says he knew he was in trouble when he discovered his nearest service provider operated in Wisconsin. When pipes burst on his Minnesota course, Diegnau found himself without an irrigation system for three weeks. He has since switched to a system that has local service support.

"When your system goes down, you'll be in a hurry to get it fixed," Diegnau says. "Do your research to find out where your nearest dealer is." ■

Infrared Photographs Help Sell New System

Chuck Gast, certified superintendent at the Country Club of Little Rock in Little Rock, Ark., could see firsthand his irrigation system wasn't working as effectively as he wanted during the first few months of 1999. As he toured the course, he saw brown patches of grass where the water couldn't reach.

Despite evidence so obvious to him, Gast couldn't convince his members to fund a new irrigation system until late that summer. That's when he hired an aerial photographer to snap pictures of his course using regular and infrared film.

Photographers can load infrared film into a normal 35-mm camera, so it costs only slightly more than regular photography. Gast says his aerial photographs cost between \$300 and \$400.

"We'd had 65 straight days of drought, daily temperatures that ranged from the low 80s to the high 90s, and the turf suffered from horrible heat stress," Gast says. "I took the pictures then because I thought photographs from that period would provide the most stark evidence of our needs."

The regular photographs revealed enough. Stretches of turf along the rough seared by the summer sun and drained by tree roots appeared as brown patches. When Gast placed the infrared photographs next to the regular photographs, however, the problem turf was even more obvious.

"Infrared photographs are great because they simplify what you're looking at," Gast says. "Red areas are healthy turf. White areas

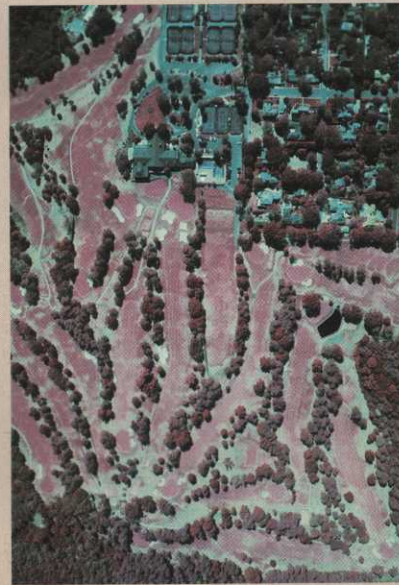


Infrared photography (right) brings irrigation system problems starkly to light.

are areas that are desiccated because they're not getting enough water."

What looked merely like thin grass on the regular photographs appeared as great swaths of white space on the infrared photographs, Gast says. The damage wasn't limited to the edges, however. White streaks appeared down the middle of some fairways as well.

"The widespread nature of the problem startled them," Gast says. "They saw the damage in the regular photographs, but the infrared photography showed the



problem was far more widespread than imagined."

Gast's photographic presentation finally convinced the members that a new irrigation system was necessary. The club then funded a new irrigation system that will cost between \$750,000 and \$800,000. Work on Phase I, an upgrade on the back-nine system, finished last spring. Gast expects the second phase to be completed in the spring of 2003.

"The photography was invaluable in helping me to make the case for a new irrigation," Gast says. "As the health of our turf has improved, it's clear that we made the right decision." — FA

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