

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

Continued on page 32

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

A more efficient, smarter system ensures a better playing surface, which promotes happy members and players.

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.

Vinchesi is president of Irrigation Consulting in Peperell, Mass. He also teaches irrigation design and water management seminars for the University of Massachusetts, Rutgers University, the GCSAA and the Irrigation Association. He can be reached at bvinchesi@irrigationconsulting.com.

“I couldn’t live without my radio controller.”

—PAUL DIEGNAU

Continued from page 31

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

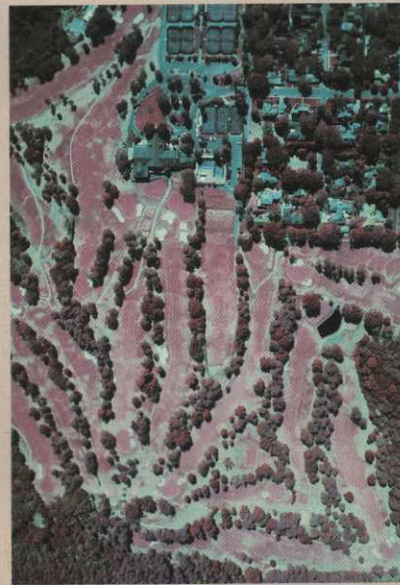


Infrared photography (right) brings irrigation system problems starkly to light.

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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Taking Control

Superintendent replaces antiquated central-control system with latest in high technology

BY DAVID AND PATRICIA FLETCHER

Open since 1904, San Gabriel CC is one of the oldest private golf clubs in Southern California. Its traditional layout, gently sloping terrain, mature oak trees and old-time club camaraderie keep members happy. While “classic” aptly describes the club, however, just plain “old” describes its centrally controlled irrigation system.

The problem

The club’s 16-year-old hardwire system had once been described as “state of the

Problem

San Gabriel’s 16-year-old hardwire irrigation control system failed often, operated slowly and wasted water.

Solution

Install a new Aurora control system, which includes 29 48-station field satellites and two-way communication through hardwire, radio and cellular telephone.



SAN GABRIEL CC

art,” but by 1998, it started to fail. When the system wasn’t in need of repair, it operated slowly and fell short of efficient water management.

“It was frustrating,” says Robin Henry, San Gabriel’s superintendent. “I could only make a few adjustments and couldn’t write specific [irrigation] programs for different soil types. We would also spend 45 minutes inputting the next day’s program and waiting to receive confirmation from the satellites. If one satellite didn’t get the signal, we’d have to drive out to it, reset it, resend the signal to all satellites, wait for confirmation and so on.

“We were making all this effort, paying huge repair bills, using lots of water and our turf *still* wasn’t very healthy,” he says. “I was ready for some new electronic controls.”

In any new system he purchased, Henry wanted multiple programming to isolate microclimates and microsoils, a short-band radio to control the system from anywhere in the field and the ability to integrate new technologies as they became available. He also wanted a system easy to install and manage.

The solution

“In 1999, I was asked to test a new central-control system

The turf is much healthier at San Gabriel CC because it’s getting the water it needs when it needs it.

manufactured by Signature Control Systems,” Henry says. “Our board of directors and I agreed to try it.”

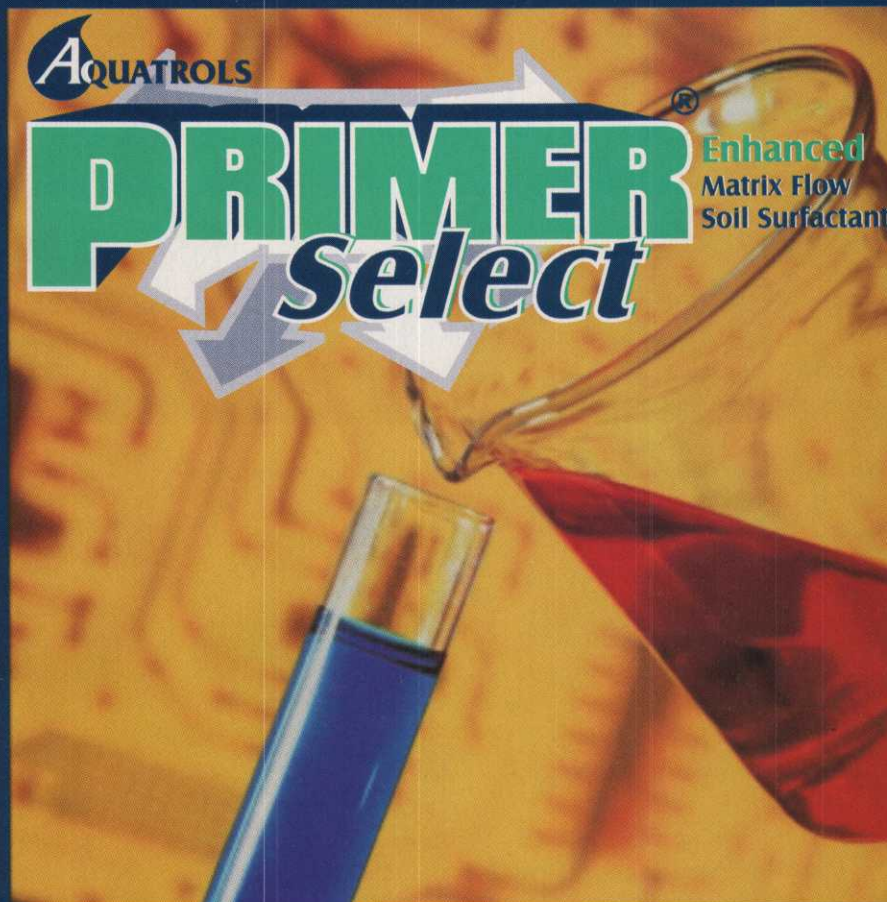
The central-control system, Aurora, is designed for commercial golf applications. The Aurora system features three levels of software and field satellites that can function as stand-alone controllers or manage an entire satellite network with or without a central computer.

“With Aurora, superintendents can build simple systems with just one

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Continued from page 34
stand-alone controller in the field," Henry says. "Then later they can network a series of satellites at remote locations."

Each controller/satellite has a built-in microprocessor and offers two-way communication through hardwire, radio and cellular telephone, according to Signature.

"Every controller in the field has the power of a central computer," Henry says. "That means you can walk to any satellite and receive and send information from and to any other controller or the entire network."

Henry's system includes 29 48-station field satellites for the entire golf course. He ordered pedestal-mounted, stainless-steel models. Rather than hard-

"Radio made installation fast and less disruptive because there was no trenching for wires."

—ROBIN HENRY

wire communication, Henry chose UHF radio as his communication band of choice.

"Radio made installation fast and less disruptive to play because there was no trenching for wires," he says. "We mounted new



SAN GABRIEL CC

pedestals and used the existing power and valve wires, upgraded the grounding system per specifications, and we were ready to go. We retrofitted our own golf course and had our programs up and running by ourselves. It only took a week to complete."

Henry also has an Aurora hand-held UHF radio remote for in-the-field control and a cellular phone modem.

"The hand-held remote is like my best friend; I rely on it constantly," Henry says. "I can be anywhere within a two-mile radius, and [I can] shut down or activate water cycles and individual stations. In fact, with my cellular phone as my remote, I can operate the system without having to be on the course."

Henry also uses a Palm Pilot for programming away from the course and for

downloading upgrades. He also uses it to program changes to field satellites.

"Best of all, I didn't have to buy new equipment to use cellular links or narrow-band radio," Henry says. "The controllers are digitally ready to integrate new technologies, so I don't have to call a meeting with the board of directors every time I want to upgrade my system."

Aurora's family of software runs off Windows. Henry has Aurora's most advanced level, called Professional, which can control up to 999 satellites and provide entire site management.

"By having multiple programs, I'm able to put water in the zones accurately," he says. "For example, my 13th fairway runs from east to west. The north side, which is in the sun, always needs more water than the shady south side, so now I

Superintendent Robin Henry says he relies on his UHF radio hand-held remote constantly.

just input a program for each side of the fairway and change the water budget by percentage."

The outcome

The club's turf improved dramatically, Henry says.

"Our board and chairman were thrilled," he says. "The turf is much healthier because it's getting what it needs when it needs it. From a financial standpoint, the system is affordable, and there has been a noticeable savings in water use and electrical use by the pump house." ■

David and Patricia Fletcher are principals of Santa Rosa, Calif.-based DP Fletcher Marketing, a marketing communications agency that specializes in the green industry.

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CIRCLE NO. 124

At public, private and resort golf courses, superintendents often find themselves forced to take machetes to their budgets and start cutting. When the money-green blood of relatively booming times suddenly turns red like the numbers of the short-term bottom line, financial types are programmed to begin telling everyone to stop spending. Golf course maintenance fits in their cross hairs squarely because it represents expenses only — not an opportunity to create revenue.

Bean counters and chicken littles fail big time when they forget that a dynamic and living golf course requires great care. Without that care, no one will play golf. (Please, perish the thought of some kind of return to the minimalism of yesteryear when goats, sheep and rabbits did the greenkeeping.)

Golfers have been spoiled by our ability to maintain amazing turfgrass. When they don't see that it's amazing anymore, they stop playing. It makes me sick, but it's a reality of the business.

Now, suddenly, superintendents are being told to stop doing the very thing that clearly makes a difference. For those of you who don't think that golfers care, you can get a dose of reality by going to any of the facilities on anyone's top-whatever list and ask golfers why they're there. They won't tell you it's because of the nice job the kitchens do with the daily soup. And they won't express their willingness to spend money because the owners increased the size of the clubhouse to have weddings and charity auctions at the pretty new golf courses.

I don't know how to answer some of the questions posed to me lately. Some are so absurdly beyond the pale that I find myself slack-jawed. There are the obvious questions, such as, "I have to decide whether it's a good idea to fertilize next year at all." But there are the unsolvable puzzles, such as, "They told me I have to decide between fuel for the machines and people on the crew and cut one or the other."

A Look at the Big Economic Picture

BY DAVE WILBER



PANIC AND POOR CHOICES RESULT IN GOLF COURSES THAT WILL HAVE TOUGH TIMES GETTING BACK UP TO SPEED

There's also the deferred maintenance roll of the dice, where a turf manager asks himself, "Do I really need to rebuild that well pump, even though it's the course's only source of water and barely made it through last season?"

Superintendents are baffled by what's going on, but not because they don't want to do their part. It's because the people throwing around the messy alternative spending schemes are in many cases successful business people who should understand that not taking care of your primary infrastructure spells disaster.

Some operations are doomed to fail. Their financial pictures are so thin that a little missed revenue causes their pro-forma cash-flow projections to read like a fantasy novel. The superintendents at these operations are probably already trying to get blood out of the turnips — and now they're being told they need the turnips to turn into wedding receptions or a holiday parties. (It's a shame that when times are good, the superintendent is the last one off the hook when the competition is doing better.)

Panic and poor choices result in golf courses that will have tough times getting back up to speed. Letting things go until things get better economically is plain stupid, and superintendents know this.

Superintendents have to fight hard, but the responsibility of stewardship comes with the unpleasant task of telling people what they don't want to hear. The golf course will speak volumes — but only after it has not gotten what it needs to prosper.

Dave Wilber, a Sacramento, Calif.-based agronomist, can be reached at dave@soil.com.

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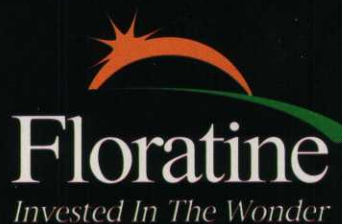
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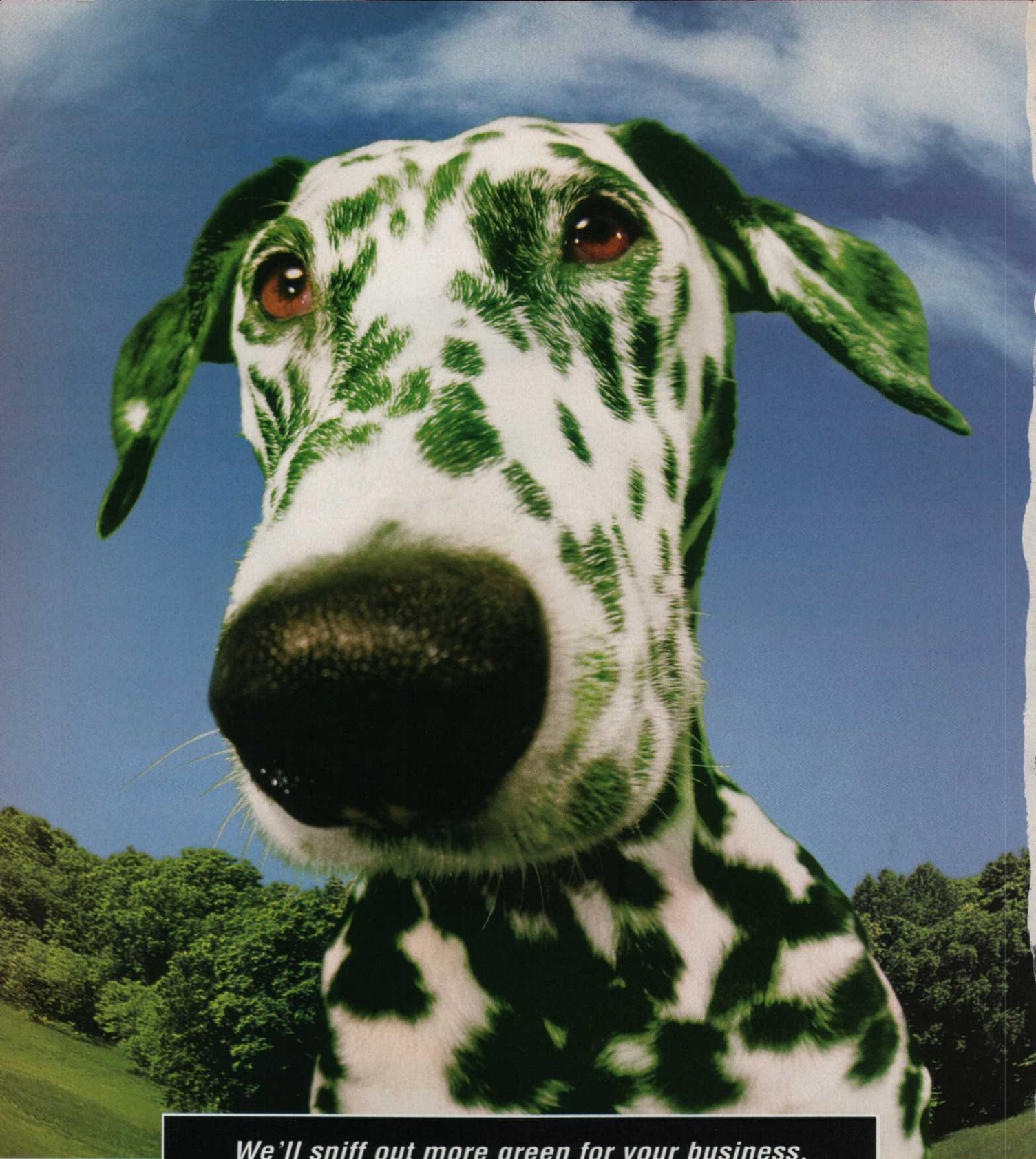
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