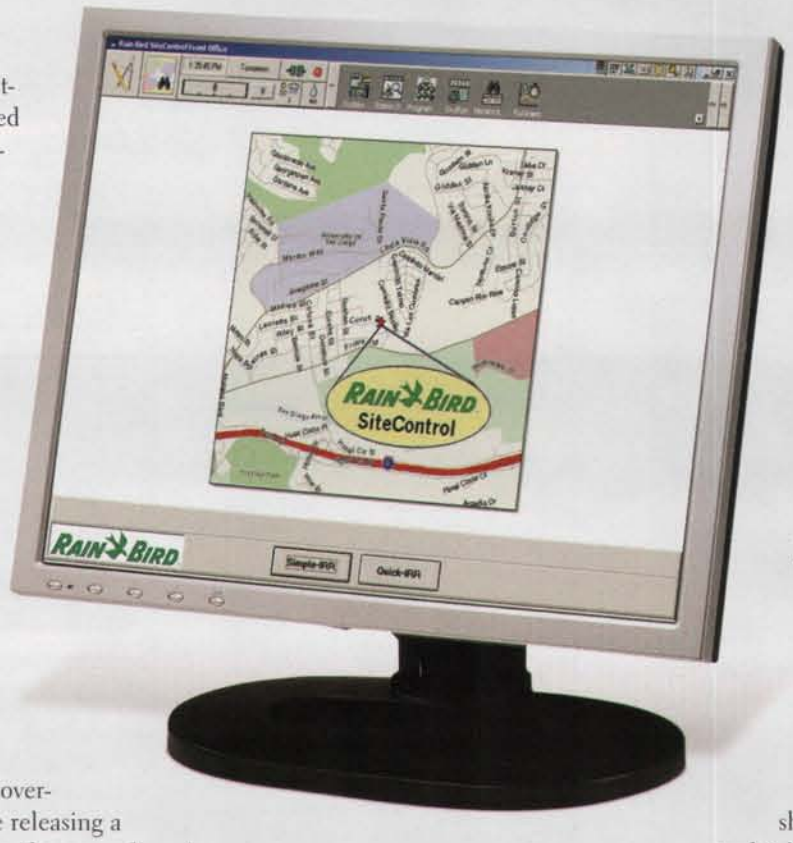
Connecting controllers with the Internet

BY **LUKE FRANK**



There was a time when irrigating a sports complex required considerable time and manpower. Central control was but a glimmer in somebody's innovative eye. But, gone (for the most part) are the days of dragging hoses across a hundred acres of turf eyeballing the uniformity for the day, doing your best to keep hot spots under control.

With the introduction of new piping materials after World War II, and a sprinkle of ingenuity, these hoses assumed the form of PVC pipe buried in the ground. What a concept—permanently bury a pressurized delivery system, cut down on labor, close the watering window, and establish a standardized coverage uniformity for the site.

Site managers surely must have felt smiled upon. They had improved control over what was applied when, and their turf presented a more even growth, color and overall health. However, it remained cumbersome releasing a crew to strategically punch sprinkler heads into the ground, each into its own quick-coupler. And when the irrigation set was complete, the crew went back out to pull heads from one zone and punch them into the next. It must have felt like some horticultural game of Battleship.

Then along came control zones hardwired to a mechanical clock, enabling the water manager to create irrigation "programs" with increased regularity and efficiency. No more manually opening and closing valves, nor did one have to be present to activate irrigation sets. This must certainly have felt pioneering, however the challenge of managing large sports turf sites still demanded a lot of time and resources.

A new level

Irrigation central control surfaced some 50 years ago, as mechanical controllers with pins and dials were hard-wired with relays to activate irrigation sets from a central location. From a single spot on the site, you could control irrigation zones as far away as you were willing to run wire. What a luxury for a turf manager, and what power to create and implement a practical irrigation management plan. Although the technology was proving itself to be efficient and reliable, adoption was cautious and measured.

Ten years later, computerized central control hardwired a network of solid-state irrigation timers together, taking water management to a new level. Communication with the control system was evolving into a two-way street, with newfound accuracy and reliability. Not only could you monitor and collect valuable, real-time field data, but also you could use these data to develop and upload irrigation programs back out to the satellites.

Over the years, various other forms of communication in the ground and over the airways have since linked irrigation managers with their systems. Radio control has come a long way in connecting disparate data points, sometimes miles apart, to activate and program irrigation. And the software and programming features are astounding, although 50 years from now preschoolers will laugh.

A future in irrigation?

Leaps in technology have an interesting effect in our society. They excite pioneers who have the foresight to refine its use and bring it mainstream. But not without risks. As quickly as new technology emerges and the production race heats up, existing technology is rendered obsolete.

It seems that combinations of computer software, hardwire connections and the airwaves are coming together to further shrink our ever-contracting world. Central control is becoming global in scope. The question remains whether or not it can be engineered in a simple, affordable, practical configuration that will be adopted by the masses.

Hardwiring components together remains the gold standard, but you can download irrigation data from the field and program irrigation sets through radio frequencies as well, provided you are able to clearly define the radio signal range and clarity. These technologies cost money and require some end-user sophistication.

Other transmission/receiver equipment that can be used includes modems, cell modems, e-cards, dedicated servers and so forth. These transmission lines span the globe and can deliver a wealth of information quickly and reliably.

I'd be surprised if most irrigation controller manufacturers weren't developing a prototype that incorporates the World Wide Web, and there are those that already have products on the market. Besides the obvious advantage of connecting manager with site wherever the Internet reaches, use of the Internet is reliable and affordable.

It might be worth exploring how complicated and expensive these control system options are, and how practical they might become. You never know when you'll need to connect cricket fields in Orlando with soccer fields in Katmandu in an intricate irrigation web of water management. ST

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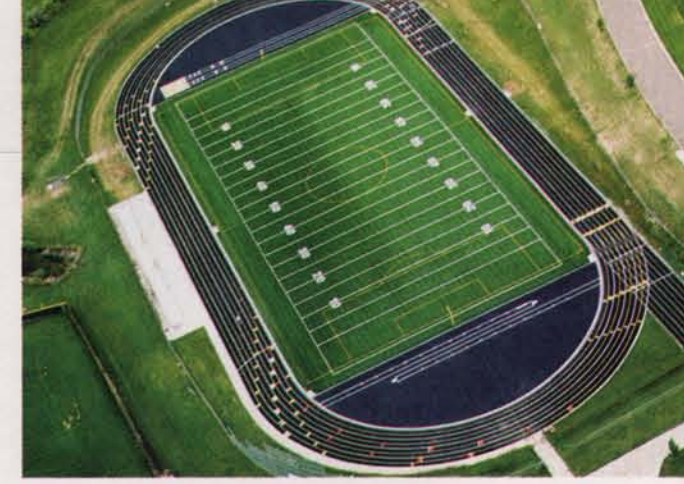


Underlayment can affect drainage, hardness

In Boulder, CO, Boulder Valley School District (BVSD) has more than 50 schools serving nearly 28,000 students. BVSD's operations department manages the sports and athletic programs for the district's six high schools. Given Colorado's harsh climate with extreme temperature variations and intense sun exposure, field maintenance is one of the biggest challenges for the department.

For a recent field installation at Monarch High, BVSD, having decided on a synthetic field, assembled a complete team of architects, engineers and contractors to review their various options. They then chose a Tarkett Prestige (29mm average sand/rubber infill) turf system, as well as a base system by Brock USA comprised of polypropylene beads.

According to school district project manager Lou Novak, "To date there has been no adverse drainage incidents. We did have an intense 1-inch downpour late last summer and there was no noticeable effect on the field.

Traditional under-turf systems lower the G-max rating (a common measurement of field hardness). Softer may make safer but also slower. Brock USA says its product has the ability to absorb impact without affecting the speed performance of the field.

"The field plays very fast. We are aware of this because the District has three fields with "e-layers" under them and they are noticeably softer and slower playing," Novak says. "We had the field tested by Biomechanica last October using the ASTM F1936 and ASTM F355 methods. The average field G max was 93, which would indicate a soft field."

Brock USA says its system provides rapid water drainage both vertically and laterally, actually draining water faster than the turf itself, so in many cases a simpler drainage system can be used. The system's 4 x 4-foot mechanically interlocking panels are installed completely flat to secure a foundation for the artificial turf. The final field profile is around 4-5 inches including the turf.

According to Novak, "We were able to go with less of a drainage structure, which saved money. Other

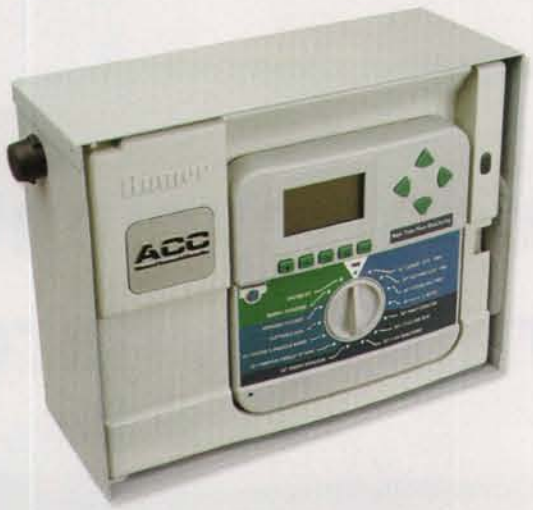
systems we researched can take 5 days to lay and 8-10 days to cure but our installation time was 3 days.

"Maintenance involves regular brushing to pick up debris, during heavy-use periods, weekly or bi-weekly, during lighter periods, monthly," says Novak. "We don't do much in grooming or raking as the brushing adequately raises up the turf blades. Also, given the low g-max, we don't need to soften up the infill mix. We have plowed snow from the fields on a couple of occasions and had to redistribute some of the rubber granules that were pulled up," Novak says. **ST**

SITECONTROL VERSION 2.0

Rain Bird's SiteControl Version 2.0 is the latest version of its single-site, commercial central control product line; this version is now standard with all Rain Bird SiteControl packages. Using RainWatch for SiteControl, Version 2.0 offers communications flexibility through satellite and two-wire decoder options for ease of installation and expandability. It also includes a Minimum ET capability that postpones irrigation until a minimum evapotranspiration threshold is reached, promoting deep watering for optimum turf conditions and water savings.

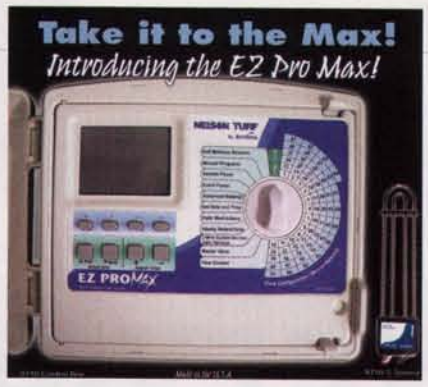
Rain Bird/800-984-2255
For information, circle 076 or
see http://www.oners.ims.ca/5064-076



HUNTER'S NEW CONTROLLER

The new ACC is the first standalone version of a top-level controller to offer both real-time flow sensing and site specific Et capabilities. Hunter's most advanced controller ever, the ACC also offers the opportunity to add central control communication capability. Additional features include 6 independent and 4 custom programs, independent day schedule options for each program, non-volatile 100-year memory, and the unique ability to conform to "watering windows."

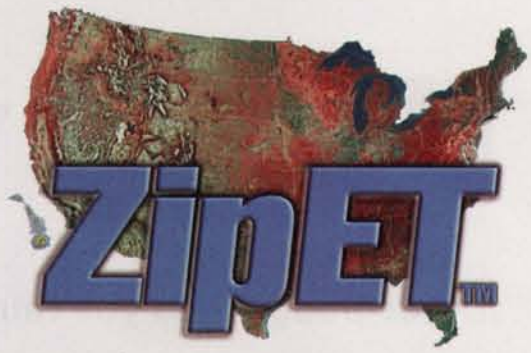
Hunter Industries/760-744-5240
For information, circle 083 or
see http://www.oners.ims.ca/5064-083



NELSON'S EX PRO MAX

The 8710 EZ Pro Max is a sophisticated 2-wire, water-on-demand system. The moisture sensor measures the absolute water content of the soil by taking three independent readings: soil moisture, soil temperature and soil conductivity. The 8710 can easily be retrofit to any traditionally wired system by using a 16 and/or 32 zone decoder box. The decoders can be retrofit to any manufacturers 24V solenoid.

LR Nelson/888-635-7668
For information, circle 077 or
see http://www.oners.ims.ca/5064-077



RAIN MASTER'S ICENTRAL WITH ZIPET

This ET (EvapoTranspiration) data collection and dissemination service is offered by Rain Master to its Internet customers. Using ZipET users can get site specific daily ET (based upon zipcodes) delivered to any specific Eagle-i controller location throughout the US. The controllers automatically adjust irrigation watering schedules based on daily ET conditions so only water that has been depleted from the soil is replaced.

Rainmaster/800-777-1477
For information, circle 078 or
see http://www.oners.ims.ca/5064-078