



Irrigation's changing face

The trends that will determine how you will soon irrigate your customers' properties

BY BRIAN E. VINCHESI

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ater conservation is a huge issue in the irrigation industry. Providing products and systems that do more with less water is increasingly becoming the focus of ir-

What's cool in irrigation

The International Irrigation Show in San Antonio unveiled several cool new products, including:

- ▶ Redmond, WA-based **Remote Control Technology** showed its Phantom antenna to help landscape contractors control irrigation systems remotely. The vandal-proof antennas are buried under one inch of topsoil.
- ▶ Las Vegas, NV-based **Bio-Green Automatic Fertilizing** revealed its four systems to introduce fertigation into the commercial and residential landscape market. Easy to install (the process takes around 30 minutes), the four different tanks allow you to carry less equipment, use smaller trucks and have less bulk fertilizer on hand. You can set your clients up for regular refills, and your job is complete.
- ▶ The Rollcart from Althengstett, Germany-based **Perrot Rengerbau CALW** provides a compact, rolling irrigation system that needs little oversight. The Rollcart starts moving as soon as you turn on the hose (which hooks up to the back) and then moves slowly across the lawn along a previously laid steel track. Once it reaches the end of the track, it turns itself off, giving operators complete control over how much water they put down.

continued on page 32

rigation equipment manufacturers.

Look for equipment manufacturers to accelerate development of technologies such as smart systems, moisture sensors, interactive sensing, remote control and pressure regulation. These types of products will become standard in most irrigation systems.

Smarter moisture sensors

Soil moisture sensors have been around for years but the technology hasn't changed much. The sensors have required maintenance, removal for winter and calibration for accuracy. This will change. Reliable moisture sensors requiring less maintenance will be developed. Precise watering to match the needs of the plant will be mandated.

Moisture sensors are usually installed in pairs over an area and for each different type of hydrozone. Any irrigation system can potentially have a large number of sensors, increasing the installation costs but saving water. Many of today's moisture sensors are used to avoid over-watering and function like a rain sensor by "telling" the irrigation system not to water. Tomorrow's sensors will not only keep the system from coming on but will also tell the system if it needs to come on and when to shut off.

In recent years, irrigation controllers, especially high-end commercial ones, have featured two to

continued on page 32



Irrigation systems are being developed that will be able to tell when soil conditions require additional water and also can be programmed to be operated and tracked off site.

continued from page 30

four sensing ports, which are designed to interact with various accessories to better control irrigation. Devices that can be attached to these sensor input ports include rain sensors, wind sensors, temperature sensors, rain gauges and soil moisture sensors. Most sensor ports

continued from page 30

► Simi Valley, CA-based **Rain Master** introduced its line of evapotranspiration (ET)-based irrigation controllers. The Internet-ready system offers water-saving features, including an automatic or manual ET adjustment, along with electrical- and water-flow alarm capabilities.

► Looking for a way to control weeds while still allowing water and nutrients to get to the landscapes you maintain? Try Bridgeview, IL-based **Ground Cover Industries'** new Architect's Choice landscape fabric. The brushed polypropylene fabric conforms easily to the ground and features a rough surface that holds mulch or stone in place.

— Frank Andorka

have an override switch and a system override indicator. Soon these sensor inputs will also be incorporated on lower end controllers and be more interactive with the overall irrigation system. The more information the irrigation system receives, the more accurate it becomes.

Regulate the pressure

Pressure regulation is accomplished different ways on an irrigation system — at the point of connection, at the zone valve and, in some cases, at the sprinkler. Various pressure regulating valves have been available for the water supply for many years using either a plumbing type product like a Watts U5-B or Wilkins 600, or with a large Cla-val type product. These products haven't changed over the years. Pressure regulation options for the zone valve have also been available for many years, but only in the last few years have they become reliable. Almost all valve manufacturers offer this option and the required maintenance is much lower than it was in the past.

Spray sprinklers are the only pop-up sprinklers that have pressure regulation available at the sprinkler. Keep in mind that pressure regulation is different than pressure compensation, which has been available from several manufacturers for years. Until last year only one manufacturer made a pressure-regulating

sprinkler and now there are at least three. Soon, we'll hopefully see pressure-regulating rotors that are already available on the golf market.

Why is pressure regulation important? Every sprinkler has an optimum range for operation. For each pressure the sprinkler throws a specific distance and uses a precise amount of water. From a manufacturer's standpoint, the more pressure ranges and distance a sprinkler can cover, the fewer sprinkler types need to be designed and built. However, each sprinkler still has an optimum pressure for how evenly or uniform the sprinkler applies water. The more uniformly the water can be applied, the less time the sprinkler needs to operate and the less water it will use.

This optimum pressure is usually in the middle of a sprinkler's pressure range. That pressure for spray sprinklers appears to be 30 psi. Rotors will probably vary with their size, but the pressure will be determined by manufacturer testing. Expect to see a lot of pressure regulation of individual sprinklers in the next decade. They'll cost more but they'll be worth it. In the meantime, pressure regulate the zone valves to save water.

Remote control

Remote control is a great service tool for the

continued on page 35



Tomorrow's irrigation specialist will require more education and may need a license or certification to install and maintain systems.

for communication between the controller and a PC or other devices.

Smart controllers

Once the irrigation system controller can communicate with other devices, the possibilities are limitless. Large-scale central control systems have been communicating with different devices for many years, some successfully, some not. This technology is filtering down to smaller irrigation systems.

The smart irrigation system of the future is likely to be semi-automatic and irrigate when needed instead of when told. Smart systems, for example, will have the ability to sense the soil moisture, determine if the irrigation system needs to water, turn it on and then shut off the system when the optimum soil moisture level is achieved.

A smart system will monitor the flow and pressure from a pump system, and if there's more or less flow available than the irrigation system is using, the system will turn on or off more sprinklers. A smart system, used with other equipment, will tell if there has been a significant pipe break or leak, determine if it's a main line or lateral, isolate the location, shut down that part of the system and continue to operate the rest of the system. It will also inform the responsible party, either through a page or phone call, about the location and problem.

There are also some irrigation trends we'll see in the next few years or sooner that aren't related to equipment but the environment. These include regulatory restraints and some installation procedures.

Restrictions on the increase

Expect more regulation with the irrigation industry. This may be in the form of reduced water availability and residential irrigation system restrictions such as a ban on automated systems or new potable water taps, as is currently the case in some areas. Additionally,

groundwater sources from private wells will also be under increased scrutiny. Licensing or certification requirements for installation contractors will become more prevalent.

Bills are pending in New York and North Carolina, and more states will likely require that installers be properly trained and educated. This will involve either mandated licenses or voluntary certification of installers. There will be increased costs and the need for more education of the industry.

Step in this direction

Directional boring is another trend that will accelerate. Boring under roads, railroad tracks and other obstacles has been around for decades, but it has been limited to straight bores that were expensive due to the size of excavations required and amount of time and labor needed to complete the bores. New technology is now available from companies such as Ditch Witch and Vermeer.

The directional bores don't require the deep excavations, straight lines or time of traditional bores. The machines are almost 100% automatic and the operator uses a joystick much like playing a video game. Even though the operation is still performed by specialty contractors, the cost of boring is now competitive if not less expensive than open cutting, trenching and patching of a road crossing. The costs for directional boring continue to decrease and more irrigation systems are using this technology.

In summary, competition for water will force more restrictions on irrigation systems and those who install these systems. New technologies geared toward using less water and still meeting the watering needs of the area being irrigated are just around the corner. **LM**

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continued from page 32

contractor because it saves time and labor, and therefore cuts costs to not only the contractor but the end user as well.

Ten years ago, there were only two handheld remote controls available in residential/commercial irrigation. These controls were basically from third party manufacturers whose equipment could be added to any manufacturer's controller. Today, almost all manufacturers offer remote-ready controllers through their entire controller line.

Although we'll continue to see improvements in the on-site remote control of systems, the exciting area is in off-site remote control.

There are several ways this control can be accomplished, like off-site programming of the controller through a personal computer (PC)-based software program. You would then simply go to the site and upload it. Or, it can be a faceplate that can be removed from the controller, programmed, then put back into the controller. Most directly, it can be a modem, internet or satellite connection that interfaces directly with the controller.

For contractors with a large commercial or homeowner association customer base, this technology provides unlimited cost savings and potential increased sales.

Controllers of the future will be equipped with RS232 communication ports to allow