Ohio show hits hot buttons

President stresses green ‘marriage’

By MARK LESLIE
columbus, Ohio — Calling the relationship of the state’s golf course superintendents, sports turf managers and lawn-care operators “a beautiful marriage,” new Ohio Turfgrass Foundation (OTF) President Joe Duncan said the different groups are learning more and more from each other as time passes.

“That relationship has existed for a long, long time, but we depend on each other more than ever before,” said Duncan, owner of Evergreen Lawn Care Inc. in Troy, who succeeded Hank Chafin at the OTF Conference and Show here, Dec. 8-11. “We’re learning that everything we do is an integral part of each other’s work. Things that happen on sports turfs and on golf courses, and the research they are fostering, affect us all.”

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Business software allows contractors to hand-map courses

By KEVIN P. CORBLEY

Lakewood, Colo. — Computer-aided mapping is the future of golf course maintenance and construction. That’s the direction Larry Rodgers, Rogers Design here sees the industry taking. And his clients, some skeptical at first, tend to agree.

For more than a year, Rodgers has been using Global Positioning System (GPS) and Geographic Information System (GIS) technologies to monitor and map the installation of irrigation systems. He also uses them to design new golf courses and help existing courses manage their irrigation systems.

Questions abound in the golf course maintenance and construction business. For example, many superintendents wonder if they can build a course without involving the media. Others ask if their staff can be kept informed if they do not have a construction plan. Still others ask if they can manage their budget without involving the constructor.

“Digital mapping essentially replaces aerial photography in golf course mapping,” explained Rodgers. “GPS and GIS are a lot more accurate and much less expensive in the long run than air photos.”

Typically, an aerial photo of a course is taken after construction and has limited use as a map reference for some maintenance and future design changes. Digital mapping is conducted throughout the construction process, whether for a new course or a replacement irrigation system at an existing one. The digital map is created in layers as the project progresses and can be used to facilitate the construction itself.

“The bottom line is, this technology saves money by virtually eliminating change orders in renovations of existing courses,” said Rodgers.

Digital maps give contractors an extremely accurate visual guide they can follow during construction. As a result, completed projects match very well with the plans.

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Global mapping to make (golf) life easier

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closely with the original design, requiring few changes. And when construction does deviate from the plans, the designer sees it immediately on the updated maps and can fine tune the design as needed.

**GPS and GIS Explained**

GPS and GIS are separate technologies that work together in creating digital maps. GPS pinpoints the locations of objects, and GIS contains information about those objects.

"Imagine it like this," said Rodgers: "GPS gives the house address, while GIS gives a description of the house."

The U.S. government developed GPS as a navigation and positioning tool. Orbiting satellites emit signals picked up by small GPS receivers which determine exact latitude, longitude and elevation positions on Earth. Receivers are small enough to be carried in a pocket or backpack. The GPS receiver can record the location of a single point, such as a tree or sprinkler head, or the location and length of a linear feature, such as an irrigation pipe or fairway edge. It can even determine the area of a large spatial feature, such as a green or bunker, by collecting points along the perimeter.

These GPS points can be loaded directly into the GIS, which is a multi-layered map database. Besides containing attributes of features, the GIS also displays those features geographically in their correct absolute and relative positions. In other words, a bunker is mapped in its correct latitude/longitude coordinates, as well as its exact position relative to the green, fairway, tees, shrubs and irrigation equipment.

Rodgers spent about $30,000 for his GPS/GIS system, which includes a Trimble XRP backpack GPS, Fujitsu Pentium Pentop computer and mapping software. He has tailored the software to map golf course features.

"This system locates points with an accuracy of less than one meter," said Rodgers.

In a typical project, a member of Rodgers' field crew walks the golf course with the GPS backpack and computer, stopping at each feature to collect a GPS point with the press of a button. For spatial features, he walks their perimeter, recording points every few feet.

These collected points are fed directly into the pentop computer which creates an immediate on-screen map of the features as the associate walks. In addition, the associate uses a point-and-click interface on the computer to acquire database information.

For instance, if he plots the location of a tree, he chooses "tree" from the screen menu. Additional pull-down menus allow him to click on the type of tree, its age and condition. Back at the clubhouse, the course superintendent can add notes about when the tree was planted, when it should be fertilized and other information.

"This is how we build the course map and collect information at the same time," said Rodgers. "And because it's so quick, we go out many times and map each phase of construction, adding accurate information on sod, greens, tee boxes, irrigation pipes, layer by layer as they are built."

Depending on how many features the course manager wants mapped, Rodgers collects from 30,000 to 100,000 points on any given mapping project.

"Thanks to the digital map, we have few change orders on existing projects and very happy owners and designers at the ends of our projects," said Rodgers.

**Comparative Disease Spectrum Provided by Turfgrass Fungicides**

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**HERITAGE**—An Ounce of Prevention...

HERITAGE is a highly flexible fungicide that exhibits both preventative and curative activity against most turfgrass diseases, plus the following advantages:

- Improves turf quality
- Controls brown patch, Pythium, take-all patch, summer patch, anthracnose and snow mold
- Reduced risk to environmental resources
- Low risk toxicological profile
- Low rates, extended spray intervals
- Novel mode of action

**Editor's Note:** In next month's issue, part 2 in this series will describe the specific uses Rodgers and his clients are finding for digital maps in the construction and maintenance of new and existing golf courses.

Kevin Corbley is a Denver-based freelance writer specializing in GIS, GPS and remote sensing. He may be reached at KCorbley@aol.com.

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**HERITAGE**

**MAINTENANCE**

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