

A Wetland Wonder

Architect, builder had to be at their best to build a golf course amid flood plains, marshes and streams

BY MARK LESLIE

Golf course architects talk in eloquent terms about “painting” a course on a “canvas.” When Robert Trent Jones Jr. and chief design officer Bruce Charlton arrived at the new Kanata Research Park in Ottawa, Ontario, to look over a property on which they were to build 18 holes, they discovered “the canvas barely had a frame around it,” Charlton said.

Here were 230 acres, the core of which was unusable for anything but a golf course. To make a golf course possible, though, Jones, Charlton and ASL Golf Course Construction would have to be at their enterprising best.

“A large portion of this land is flood plain and marsh, with some low-key streams,” Charlton says of what is now appropriately called The Marshes GC. “It is mostly flat or gently rolling. ASL basically filled the fairways, tees and greens to make playable high ground, and then reconfigured and re-established wetlands adjacent to those holes.”

The challenge of re-establishing wetlands, however, was exacerbated by the fact that the course handled not only its own water and drainage but also that of the 500-acre Kanata Research Park which surrounds the course. But Charlton sought to simplify the situation.

The challenge Charlton faced was to create a stream corridor that connected two points at opposite ends of the property. The government agencies gave him and ASL permission to make the stream meander through the golf holes in whatever fashion they desired. Kanata Research Park owner Terry



“We used the wetlands to provide all kinds of strategy and shot definitions on a number of holes,” says architect Bruce Charlton.

Matthews enlisted the help of Bernie Muncaster, a biologist with ESG International’s Ottawa office, and together they turned a detriment into a positive element of the golf course design.

“That corridor of interconnected wetlands

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Problem

How do you build a golf course on 230 acres of land dominated by wetlands? Architect Bruce Charlton faced several challenges in doing so.

Solution

Charlton had to re-establish the wetlands. In doing so he had to create a stream corridor that connected two points at opposite ends of the property.

Real-Life Solutions

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is how we created the drama in holes seven, eight and nine," Charlton says. "We used the wetlands to provide all kinds of strategy and shot definitions on a number of holes.

"The contrast of the linear marshes with the manicured turf is superb," he adds. "Nice clean, simple lines define the edges of the marshes. In the end, the wetlands became an opportunity we did not want to lose."

ASL engineer Murray Amirault said the plan saved Matthews from buying expensive native grass seed to provide the regrowth required in the wetlands.

Instead, ASL used excavators to scoop up 55,200 yards of the property's hydric topsoil, resembling muck, and stored the material in piles until it could be spread along the small ponds, canals and other waterways that Charlton wove into his course design.

Because marsh and pond habitat are

part of the same hydrologic system, Charlton created a wetland buffer zone to the pond habitat. "It works well, especially in non-play areas like next to tees and on the opposite side of the lake," he says.

Of the 27 acres of wetlands that existed on the site, about 11 acres were retained in their existing conditions, Muncaster said. He then set about crafting "duig" pools (a habitat and refuge for larger fish), riffles (shallow places where the water's surface flow is broken by rocks, gravel or logs and where small fish can spawn), and realigning 1.6 miles of water course to improve the habitat for small forage fish like minnows.

Whereas the property originally contained a channelized ditch, Muncaster said his revamped creek is another 25 percent longer, greatly improving the fish habitat.

"It's a very shallow gradient, so you have to be careful to maintain the flow

of the runoff," he says. "We do that by natural channel design, incorporating bends and curves and placing rocks and logs in specific places."

Muncaster said the wildlife will establish itself in the newly created wetlands from upstream in a natural process called "drift."

Integrating Muncaster's plans with its own, ASL used Total Station, which Amirault characterized as "a computerized system that performs as well as GPS." ASL digitized the plans and downloaded them into the Total Station, from which it was able to precisely lay out all features, including the exact layout, curves, pools, rocks and more in the realigned creek. The rest is history.

"Things grew like mad as soon as it rained and they were watered," Amirault says. "Everyone was surprised by how fast it grew. It looks like it's been there forever."

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Charlton said RTJ II International has used this simple system on a dozen projects with great success.

"We take the site's native hydric soils — those that stay wet most of the time — strip them and stockpile them for as short a time as possible," he says. "You create a depression, wetland, marsh or

linear hazard that you want to become a marsh, then put this hydric topsoil back down, about 1 foot deep. Typically, if you can do it within a month you're more successful, depending on how hardy the [transplanted] seeds in the soil are. The shorter the stockpile sits, the more active those seeds will be."

With that complete, Charlton, Jones



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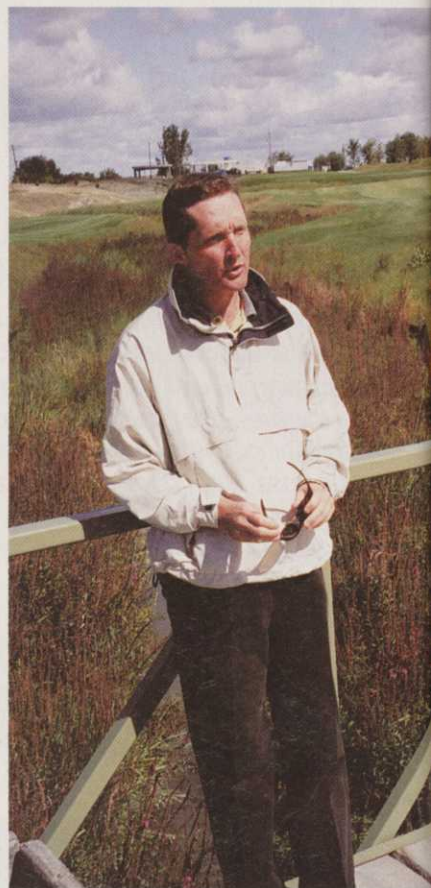
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Engineer Murray Amirault and his company ASL Golf Course Construction filled the fairways, tees and greens to make playable high ground. Then they reconfigured and re-established wetlands adjacent to golf holes.

and ASL can look over a canvas that is now fully framed and ready for presentation to the public. The Marshes GC opens June 1, and the word is it's already being eyed for major competitions.

That would fit perfectly into the portfolio of the owner. Matthews is the developer of Celtic Manor in Wales, a RTJ II design that will host the Ryder Cup in 2010. ■

Leslie is a free-lance writer from Monmouth, Maine.

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Real-Life Solutions
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New 'Strobie' Tests Well

Insignia 'will undoubtedly become a strong component in an integrated disease-management program,' Penn State professor says



Gray leaf spot, whose symptoms include leaf lesions with a tan center and an outer margin of brown, has devastated many golf course fairways in the Midwest, Southeast and North. Superintendents are banking on Insignia to help control it.

There's a new fungicide coming to town. BASF Professional

Turf expects the Environmental Protection Agency to soon register and approve Insignia fungicide, a new strobilurin broad-spectrum fungicide. BASF says research on Insignia shows it will effectively control at least 15 major pathogens.

Pyraclostrobin, the active ingredient contained in Insignia, is the third strobilurin to come to the market. Others are azoxystrobin (Syngenta's Heritage) and

trifloxystrobin (Bayer's Compass). Strobilurins feature low use rates and longer application intervals.

"Control of a wide range of turfgrass diseases caused by fungi from various classes is a major strength of pyraclostrobin," Wakar Uddin, assistant professor of plant pathology at Penn State University, wrote in a recent issue of *TurfGrass Trends*.

"The extraordinary broad-spectrum nature of this new strobilurin will undoubtedly become a strong component in an integrated disease-management program when the product becomes available to the market."

BASF and university researchers have been testing Insignia since 1996. Re-

search on the product indicates excellent performance across several turfgrass diseases, including brown patch, gray leaf spot, anthracnose and Pythium blight, BASF states.

Henry C. Wetzel III, BASF's biology project leader of fungicides and nematocides, says he's excited about Insignia because it will be the first "strobie" with "proven efficacy" against bentgrass dead spot, a turf disease that seems to be more severe on newly established greens under 4 years old.

"Bentgrass dead spot is a new emerging disease in golf turf," Wetzel says of the disease, whose initial symptoms appear as small red-

dish spots about 1 to 2 centimeters in diameter. "We're seeing it more when golf greens are constructed. So if we have a fungicide with strong biological activity on bentgrass dead spot, we would feel much better about the use of Insignia on newly constructed golf greens."

Several superintendents tested Insignia on their courses last summer, including Bob Zuercher, certified superintendent of the Blackmoor GC in Myrtle Beach, S.C. Zuercher, who says brown patch is a regular turf disease in the area, sprayed Insignia on July 10, Aug. 3 and Aug. 24 on four Tifdwarf bermudagrass greens.

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Problem

Got brown patch, gray leaf spot, anthracnose, Pythium blight or bentgrass dead spot?

Solution

You might want to try Insignia, a new strobilurin broad-spectrum fungicide, as soon as it's registered and approved by EPA.

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Insignia applications were made in strips with a check plot for comparison.

"Any place we used Insignia, we didn't have the disease," Zuercher says. "There was a noticeable difference in the spray area vs. the check-plot area."

Zuercher uses Primo plant growth regulator on his greens. He suspects there's a brown patch strain that's attracted to heavily managed greens.

"You can see it in the underlayer and the thatch," Zuercher says. "I think Insignia will clean it up. It might be a good match with Primo."

Another strong feature of Insignia is that research shows it can suppress dollar spot.

Steve Potter, certified superintendent of Woodholme CC in Pikesville, Md., was impressed with Insignia's activity against dollar spot on a bentgrass

Another strong feature of Insignia is that research shows it can suppress dollar spot.

fairway. He made several test applications to the fairway, cut to seven-sixteenths of an inch.

"The dollar spot came right to the line and quit," Potter says. "I know it was the Insignia working. I got about about 90 percent control."

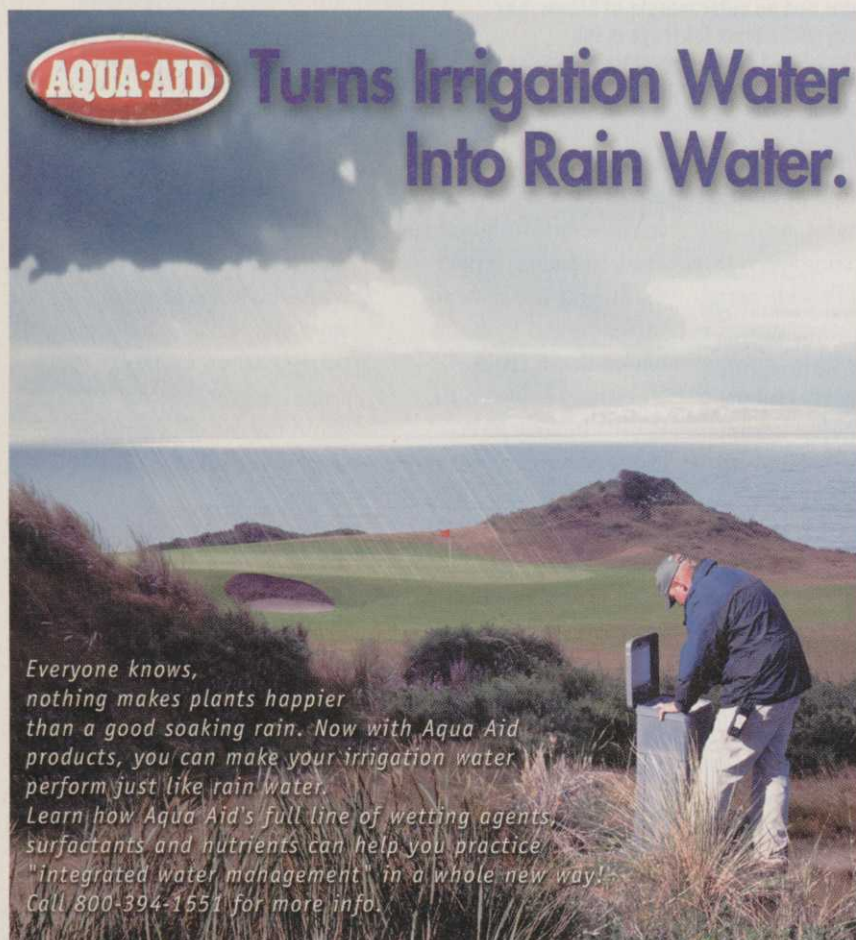
Potter also set up trials in his roughs for gray leaf spot, but the dis-

ease did not hit hard last year so the trials were not conclusive. Potter says he'll use Insignia again this year, either as an experiment or part of his regular fungicide maintenance program.

Wetzel suggests superintendents work Insignia in as part of a rotation program with other non-strobilurin fungicides to treat dollar spot.

"If you're in an area that doesn't have significant dollar spot pressure, you'll get control," Wetzel says. "But if you're located from the northern edge of the transition zone to further north where dollar spot is a big problem, you'll get significant pressure of the disease, but you won't be able to control it." ■

Golfdom Editor Larry Aylward contributed to this story. He can be reached at larylward@advanstar.com



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