

Shelter Harbor

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that caused delays centered on the state's desire to put in place significant buffer zones around the wetlands, Hurdzan said.

"When we would find small wetlands, then figure on a significant buffer, it really reduced the amount of usable area," Hurdzan said. "We were constantly trying to find the best compromise—how to protect the maximum amount of wetlands with the minimum amount of impact. There's no filling of wetlands that I'm aware of."

In total, Hurdzan said, the delays ran from between six months and a year because of the continual finding of new wetlands. Throughout the stop-and-start planning process, Hurdzan had to change the course's planned routing.

"I would say that the routing plan was substantially changed 25 or 30 times," he said. "Not just a little tweak, but going in and taking a whole different look at something."

Hurdzan said throughout the process, project manager Richard Anthony and the group of founders of the club handled the constant delays well.

"The Shelter Harbor people hired the best people they could, everybody worked very intensely and they played by the rules," Hurdzan said. "I cannot emphasize enough the quality of

the people involved in this and their willingness to compromise things they really didn't want to compromise, but they knew it was for the good of the project. The fact that the owners stuck it out says a lot about them."

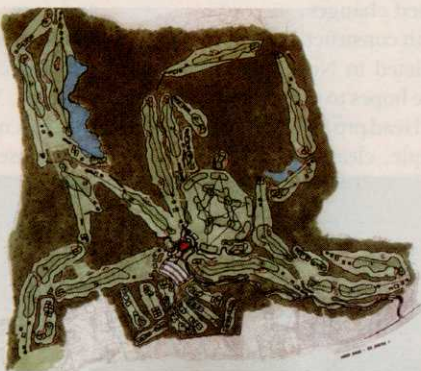
Because Hurdzan's firm, Hurdzan-Fry Golf Course Architects, has built a reputation of taking on challenging environmental projects like Shelter Harbor, he was prepared to see it through to the end.

"Donald Ross would never have built a golf course here because he would have given up on the problems that are associated with it," Hurdzan said. "Our attitude is that if it doesn't kill you, it makes you stronger. If we can make it through Rhode Island, by God, we can probably make it through anywhere."

Despite all the problems, Hurdzan said he wouldn't avoid a project in Rhode Island in the future.

"With the quality of clients we have and with the potential greatness we have with the site, I would absolutely take on a project in Rhode Island again," he said. "Would I want to work in Rhode Island on a routine basis? Sure, they're nice enough people and I would learn the rules as well as them, but you have to pick your sites very carefully in Rhode Island."

Upon completion of the course, Shelter Harbor's owners plan to deed the wetlands on the property to the state of Rhode Island, Hurdzan said. ■



Because of permitting issues, architect Michael Hurdzan had to "substantially" change the routing at Shelter Harbor 25 or 30 times.

Editorial Focus: Wetland Management

Purdue study: Wetlands effectively filter runoff

By ANDREW OVERBECK

WEST LAFAYETTE, Ind. — While golf course developers, architects and builders routinely loathe wetland regulations and the steps that must be taken to work around them, Purdue University's Kampen Golf Course actually created three wetland cells to study their ability to filter golf course and residential runoff.

inconsistent in the removal of organic nitrogen and phosphorous.

No unusually high levels of pesticides and metals or even oil and grease were detected from the runoff, although the common herbicide atrazine has been detected twice. In both cases the level of atrazine was reduced between the urban input and the entrance to Celery Bog.



At Purdue University's Kampen Golf Course, researchers created three wetland cells to study wetlands' ability to filter golf course and residential runoff.

The five-year study started in 1998 after the completion of the Pete Dye-designed course, and so far the results have shown that the constructed wetlands have been extremely effective in filtering runoff. The wetlands serve as a buffer to Celery Bog which used to handle the runoff coming from the two residential highways, a motel parking lot, gas station and 200 residences that surround the course.

According to Reicher, wetlands are effective filters because contaminants are absorbed by organic matter and then broken down by microbes. Reicher said the wetlands on the golf course might be more effective filters than wetlands elsewhere because they are constantly being recharged with water from the course.

Research is far from complete, however. Reicher is looking at ways to slow the water down and make the flow of the wetlands more circuitous.

The study, which is being funded by the United States Golf Association, Pete Dye Inc., and Heritage Environmental, monitors water quality at six points throughout the golf course.

"We are starting to understand the flow of the wetlands and how to improve efficiency," he said. "We want to try and slow the water down as best we can so it can filter more effectively. We will be putting in new vegetation and diverting other channels. The more circuitous you make it, the better job it does because it gives the microbes more of a chance to break down contaminants."

Runoff is tested as it enters the course to determine the initial level of pollutants and is then tested at four other points along the way before a final test as it leaves the property and enters Celery Bog. The water is monitored five times a year and during some storm events

Reicher hopes the created wetlands at Kampen GC are used as an example of how golf courses can benefit the surrounding environment.

"We did this because it was the right thing to do," he said. "We have to respect what we have or we won't have development opportunities any more."

"We have been able to prove that the golf course does not add any pesticides and fertilizers to the system," said Purdue's turfgrass extension specialist Zachary Reicher. "We have recorded reduced levels of chloride, nitrate-nitrite nitrogen, ammoniacal nitrogen, chemical oxygen and dissolved and suspended solids." The wetlands have been

Fazio-designed Ridge at Back Brook opens back nine

EAST AMWELL TOWNSHIP, N.J. — The Ridge at Back Brook opened its back nine for play in late September. Designed by Tom Fazio, the course's front nine opened in July.

number of smaller tributaries.

Complementing the course is a 20-acre practice facility that includes a separate teaching tee, a sand and bunker shot area and two putting greens. A short-game area with fairway, rough and sand bunkers is scheduled to open next year.

The two nines combined to form a course that plays from between 5,363 and 7,156 yards.

Future plans for the course include a rustic clubhouse made of wood, stone and rough-hewn beams, which will house the grill, lounge, pro shop and locker rooms.

The Ridge at Back Brook has been integrated into a 300-acre site whose natural features include multiple ridges with rock wall faces augmented by Back Brook and a

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