



Resort Course Floats To Prominence

The world's first floating island green at The Coeur d'Alene Resort Golf Course.

This coming April the first foursome of golfers will hit off the 14th tee at The Coeur d'Alene Resort Golf Course in Coeur d'Alene, ID, and then step into a boat to ride to the green. That's right. They must traverse 100 to 175 yards of Lake Coeur d'Alene before they can finish the hole. There is no other way to reach golf's first floating green.

From the beginning, golf and water have been intertwined by architects and builders, but never quite like this. The man-made, five million pound naval vessel disguised with trees, bunkers, and bentgrass is more than a gimmick to attract golfers to a resort in picturesque northern Idaho. It is one man's way to blend golf into a region where spectacular scenery and the lumber industry have coexisted for a century.

Ever since he took the helm at the Coeur d'Alene Press, a daily newspaper in the community nestled on the shores of Lake Coeur d'Alene, Duane Hagadone has sought ways to emphasize the beauty and recreational potential of the area. National Geographic listed the lake as one of the five most beautiful natural lakes in the world. The Coeur d'Alene native realized that the city had a unique resource to bolster its economy.

The city's two primary industries do not seem compatible. The logging industry uses

the lake to move huge trees cut from mountain slopes to saw mills. Huge "booms" of trees float off shore awaiting processing into lumber. Shoreline mills produce mountains of lumber to meet the demand of the U.S. housing industry. Unfortunately, the demand for timber is cyclical and the community suffers as a result.

During good times and bad, water-skiers, sailboats, and pleasure craft negotiate around the few bobbing islands of timber. The logging industry also does its part not to disrupt the growing resort business. Today, Coeur d'Alene has achieved a balance of industry and recreation compatible to its unique environment.

For years, Hagadone envisioned a resort and golf course on the lake. He and business partner Jerry Jaeger made their first move six years ago when a lakeside hotel went on the market. In short order they developed a resort/convention center which was recently ranked by Conde Nast as the best resort in the country. Finally, after eyeing an adjacent abandoned sawmill for three years, they were able to complete the package with the purchase of the 160-acre mill site.

The idea of a floating golf green actually evolved from the log booms characteristic of the lake. From the shore, Hagadone had often imagined hitting a golf ball onto the

islands of logs anchored in the lake. What if the logs were a golf green instead? What would happen to such a green when storms stir up three-foot waves or when the lake freezes over in the winter? These are the same questions asked by those who have docks on the lake. Could a golf green actually be a large floating dock?

When Hagadone Hospitality Co. started to search for a golf course architect, it discovered that while island greens were a popular feature for golf courses, no one had ever built a "floating" green. Instead of giving up on the idea, the company included a floating green in its list of course requirements and invited five golf course architects to participate in a paid design competition.

The winner of the contest was Scott Miller Designs of Scottsdale, AZ. Prior to opening his own design firm, Miller had worked with Jack Nicklaus Design Group. Four of the courses he designed with Nicklaus are now included in Golf Digest's Top 100. He had no problem finding work after leaving Nicklaus, including international projects such as The Forum Chichibu in Chichibu, Japan.

"I personally don't like the look of island greens like the Tournament Players Club [in Ponte Vedra Beach, FL]," said Miller. "Mr. Hagadone wanted a more natural look. So we included mounds, trees, juni-

pers, and beds of geraniums on a 14,000-square-foot island. The putting surface takes up 7,200 square feet with bunkers in front and back. The other idea was to offer different levels of challenge by changing the distance between the shore and the green.

"We were proposing a great deal, but his [Hagadone's] commitment to design was first class," adds Miller. "He was willing to make the investment in design, engineering, and construction, and brought in his own construction expert, John Barlow, to help work out details."

Miller and Barlow, who is vice president of Hagadone Corp., spent months evaluating three basic design concepts. "We recognized that there were a lot of skeptics who questioned the practicality of a floating green," Miller remarks. "If we succeeded, we'd be the first. If we failed, we'd never hear the end of it."

The first candidate was an inverted honeycomb made of steel. The second was a structure made out of a fiberglass and plastic composite. The third, and the eventual choice, was a system of concrete cells filled with polystyrene.

"The technology is the same used for concrete docks," says Barlow. "Bellingham Marine Industries [in Bellingham, WA] patented a technology called the Unifloat. It involves encasing big logs of expanded polystyrene in reinforced concrete. We asked Glostén & Associates [Seattle, WA], a naval engineering firm, to adapt the Unifloat and design a kidney-shaped floating green."

Basically, Glostén's design consisted of 104 concrete cells assembled in two layers. Each cell is 30 feet long, ten feet wide, and up to 41 inches high. The layers of cells are staggered like "Lego" blocks and then tied together with steel tension rods. This is the foundation of the vessel.

The complicated part of the project was to take this floating foundation and transform it into an island green shaped like a catcher's mitt. A computer was required to design the precise contour of the surface. "The center of gravity had to be monitored continually from design through construction," explains Barlow. "Each yard of soil or sand placed on top of the base had to be considered for its weight and location. The green was designed the same way a ship would be. It's really a naval vessel."

To satisfy weight and contour requirements, Glostén specified computer-shaped sections of styrofoam to create the mounds and undulations of the island's surface. The soil and USGA greens mix would be placed

on top of the light foam. Provisions were made for five tree wells, two utility rooms, two large storage tanks for drainage, and the bunkers fore and aft. Two large anchor winches below the surface would move the green closer to or farther from the shore.

Hagadone selected Dix Corporation of Spokane, WA, to be the contractor. As Bellingham worked on the cells, the sections of styrofoam were shaped in British Columbia. A small bay three miles from the golf course was selected by Dix as a site for assembling the green. Piece by piece, the island took shape this past summer.

In the meantime, the rest of Miller's design was taking shape next to the resort under the supervision of superintendent Steve Maas. The year before, Maas had just



Hillside holes have view of Lake Coeur d'Alene.

completed the grow-in on Forest Highlands in Flagstaff, AZ, for Tom Wieskopf and Jay Moorish. He was preparing to build another course for the pair of designers in Scotland. Miller talked Maas into meeting with Hagadone at the GCSAA Show in Anaheim to discuss a project in northern Idaho.

"Looking back today, I'd have to say I was more excited about building a course with bentgrass fairways than I was about the floating green," Maas states. The superintendent had graduated from Penn State University, the origin of the Penn-series of bentgrasses. He'd previously worked at the Nicklaus-designed Country Club at Castle Pines in Castle Rock, CO. Miller had never met Maas, but had heard of his work at Forest Highlands and Castle Pines.

"It's hard to say no to Mr. Hagadone," Maas reflects. "He was clearly committed to golf and northern Idaho. That kind of dedication rubs off on you. So I found myself moving to Coeur d'Alene instead of Scotland."

When Maas arrived in 1989, he found the remnants of an old abandoned sawmill bordered on one side by the lake and on

the other by a rocky mountain slope covered with Ponderosa pines. Miller wanted to preserve the natural features of the site and convert the flat mill yard into open rolling terrain. Thousands of truckloads of mill waste and spoils had to be removed and hauled to a landfill. Nearly two thirds of the site had to be restored before the earth could be contoured for the golf course.

Tees, bunkers, and greens had to be blasted out of rock on the four hillside holes. A creek was added to carry rainfall and melting snow from the mountain slopes. It meanders down through the links-like mounds to the lake. "Water comes into play on most holes," says Maas. "We also added more than 300 Ponderosa pines to the interior to tie the forest with the lake. The entire course is landscaped with rhododendrons, Japanese maples, wild roses, azaleas, and dogwoods. Even the rest rooms are hidden beneath elevated tees."

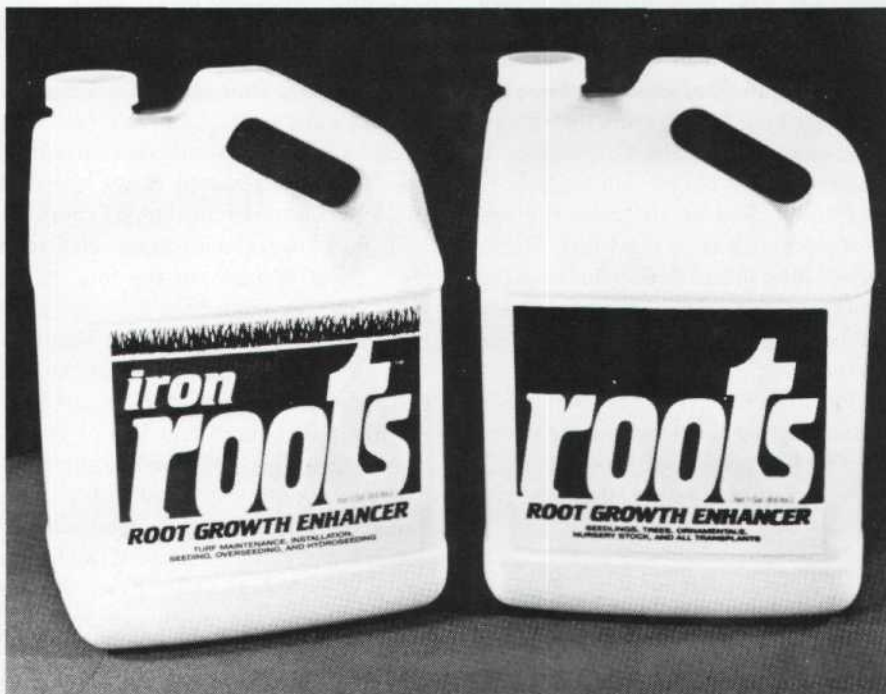
By September, Maas had the bentgrass tees, greens, and fairways and the Kentucky bluegrass roughs nearly ready for play. Bright white silica sand filled the 45 bunkers on the 6,300-yard layout. A Rain Bird Maxi IV with weather station was on line, controlling almost 1,400 valve-in-head sprinklers.

The final piece of the course floated in a bay three miles away. Dix had to give Maas enough time to sod the green before the scheduled October 1 unveiling. In addition to the flotation structure and surface features, the vessel includes its own irrigation and drainage systems, cable winches, and two telescoping night lights.

Water from the lake is pumped to the sprinkler heads by a 25-hp submerged pump, but not a drop is returned to the lake. A plastic barrier beneath the green gathers all percolated water and directs it into two storage tanks. The drain water is then pumped through an underwater pipe to land where it is disposed of in a leach field. "We worked closely with the fish and wildlife people to protect the lake from any chemicals used on the green," said Miller.

The vessel draws five feet of water and rises five feet above the lake at its highest point. The sides above the waterline are covered with wood planks to match the seawall of the golf course. Three Austrian pines and two Washington hawthorns grow from large tree wells. Twelve inches of topsoil provide a growing media for the turf on the green banks. The typical 18-inch structure of pea gravel, sand, and organic matter makes up the USGA rootzone for the putting surface.

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Resort Course

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With everything but the sod in place, boats tugged the five-million-pound green up the lake to the course. The journey took six hours. Upon arrival, the island was connected to two parallel lines of steel cable running from a few yards from shore to the bottom of the lake, nearly 300 yards out. Computer-controlled winches in a storage compartment of the island pull it to and from the shore. Once in place for the day, the winches tighten the cables to pull the vessel further down into the water for stability.

"I've been on the green in three-foot waves and it doesn't move at all," said Maas. "We maintain it like all the other greens on the course. We use a pontoon boat to get equipment and crew out to it. Since it's the 14th hole, we have a little extra time in the morning to work on it."

The floating green was the only one on the course that was sodded. Penncross sod was shipped to Coeur d'Alene from Illinois in refrigerated trucks in September. A number of trips by the pontoon boat were necessary to move the 7,000 square feet of sod from the resort's dock to the green. The green banks were then sodded with Kentucky bluegrass.

On October 1, the green was officially unveiled by Idaho Governor Cecil Andrus, four members of the Idaho Land Board, local dignitaries, Miller, Barlow, Jaeger, and Hagadone. Even though the course doesn't open until April, guests at the resort can see the illuminated green at night from the shore.

A custom water taxi will take golfers from the 14th tee to the green when the course opens. "One person will be hired to operate the taxi," Maas states. "It's covered so a second foursome can hit while the boat returns with the first."

For the next few months, the green will be positioned 270 yards off shore and covered with snow. The engineers had to consider that snow on the green can weigh up to 600,000 pounds.

Up to now, most resort guests have been skiers or conventiongoers.

Hagadone believes that many of his guests will return with their golf clubs this spring to play the course with the only floating, moveable green in the world. They won't even have to walk to the golf course. Water taxis will take them from the resort's dock to the Pro Shop, one mile away. Golf and water have never been mixed together quite like Coeur d'Alene. ●