

# The oddest commodities

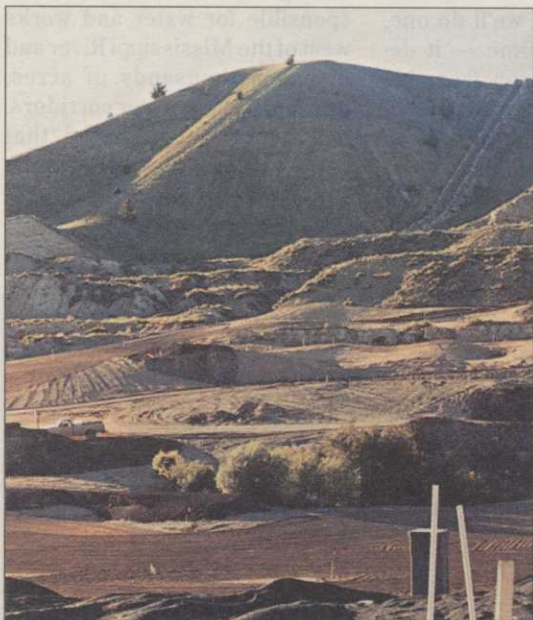
**GCN APRIL**

## Old Works' magic: black bunker sand and much more

By MARK LESLIE

**A**NACONDA, Mont. — It's a legend before its own time, designed by a legend in his own time. Old Works Golf Course won't open until May 31, yet it has already made its mark: A Superfund cleanup site, which Jack Nicklaus called "one of the ugliest properties I've ever seen," transformed into a golf course that builder Chip Roe lauded as "breathtaking."

The former copper mine closed more than 90 years ago, but left behind a legacy of arsenic over its 250 acres. Turning it from a moon-landscape-like wasteland into a safe golf course presented immense technical and engineering problems — problems tangled in a web of legal hassles, extraordinary safety procedures and a sense of (as Roe said) "doing something for the children."



Jack Nicklaus called Old Works, with its mining flues and ovens, a golf museum.

"It has transformed this whole piece of property," said Old Works GC superintendent Fred Soller Jr. "Plus, the scope of the entire project has attracted a lot of interest from the EPA [Environmental Protection Agency] and scrutiny from people around the country waiting to see

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**GCN JULY**

## Blowing up quarry adds spark to Bay Harbor project

By NORMAN SINCLAIR

**PETOSKEY, Mich.** — Golf critics are running out of superlatives to describe Bay Harbor Golf Club, taking shape on a five-mile stretch of Lake Michigan shoreline in northern Michigan where once stood a cement factory and sand and gravel quarry. The 27 holes, 18 of which are open this season and nine of which will be ready for limited play in the fall, "shreds every adjective in the book," said golf writer Jack Berry.

Architect Arthur Hills had high praise for the site, describing it as the opportunity of a lifetime. The golf course is the centerpiece of a mega-million-dollar Victorian-theme development that includes a yacht club, condominium-suites hotel, and shopping and restaurant village.

Seven holes play along the water, some on bluffs 170 feet above Little Traverse



Bay Harbor Golf Club took shape on a 5-mile stretch of Lake Michigan.

Bay. Hills routed the 27 holes over and through four diverse geological formations — sand dunes, a quarry, lakeshore and wooded uplands.

The Links Course holes flow along the top of the rocky bluffs above the water bluffs, with fairways and some greens

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## Bay Harbor

Continued from previous page

perched on the edge of those bluffs. Four of the Quarry Course holes play down into the old limestone quarry; then out to two more bayside holes. Several are routed through natural sand dunes. The rest are cut through northern Michigan hardwoods.

The 10,000-square-foot clubhouse has a commanding view of the bay as well as the 9th hole on the Quarry Course.

The golf course reclaims what was once a scarred and browned-out cement factory, adjacent to a sand and gravel quarry, jutting out over the pristine bay.

Three years ago the land was an environmental disaster dotted with poisonous piles of kiln dust, a 90-acre hole in the ground, and two huge cement and brick smoke stacks. "The place looked like a windswept lunar surface," said Andy Stempke, an environmental quality analyst of the Department of Natural Resources (DNR).

No vegetation would grow on the piles of kiln dust which contained arsenic, lead and other metals — residues of the cement-making process. The poisons wafted up into the atmosphere when the wind blew off the lake, while some of the polluting metals constantly seeped into the bay.

Today the smoke stacks are gone. The kiln dust has been replaced by rolling green fairways, and the huge hole in the ground is a deep blue-water harbor.

With the permission of the Michigan's DNR and the U.S. Army Corps of Engineers, the developers blew a hole in the sea wall, allowing water from Lake Michigan to flood the old quarry and creating the 75-foot-deep Quarry Lake where 100-foot Hatteras yachts regularly congregate. Bay Harbor has already hosted more than 50 Hatteras yachts for one function, the largest such gathering of those luxury models on the Great Lakes.

The yacht club boasts a 23,000-square-foot clubhouse and 500 slip marina. The "slipominiums," as they are called, sell for \$150,000 and include a yacht club membership.

The ramshackle cement factory buildings have been replaced by 10,000-square-foot Victorian-styled waterfront mansions. Where fences once encircled browned-out land, green park land now invites passersby to enjoy the view of Little Traverse Bay.

The peninsulas created on each side of the dredged-out entrance to Quarry Lake gave the developers prime frontage that they turned into \$1 million lots featuring the bay in front and the new lake in the backyard.

The 1,100-acre site will have 800 homes and condominium units, GOLF COURSE NEWS

clustered in groups of 25 neighborhoods, each with different themes. There are waterfront homes where owners can walk out their front door to their yachts; homes on the golf course; and clusters of condominiums near a shopping and restaurant district.

The golf club is open to the public for now. When all 525 memberships are sold (opening price \$25,000) Bay Harbor will be a private facility.

## BEST OF DEVELOPMENT '97

### Diablo es Grande

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Diablo's first two courses are already in place.

In June, The Ranch Course designed by Denis Griffiths opened for play. Phase one's second course, Nicklaus and Sarazen's Legends West Course, should open for play by the end of November — the last hole was seeded Aug. 5

"It's probably the most incredible piece of inland property I've ever seen," said Griffiths. "It's a perfect piece of property for golf."

"The property was loaded with old California

Oak trees when we first saw it," said Panoz, "and we didn't cut one tree when building either course."

He said 700 to 1,000 trees will be planted on the two tracks over the next few years. "We've allotted 3,500 acres for a nature preserve with approximately 63 percent of the land devoted to wildlife habitats," he said.

"We had zero wetland impact, all of streams had stream buffers on them, we used fescues and other native grasses and irrigated only 85 acres. We were very careful," said Griffiths.

Work on the next four neighborhoods, which will stem off of phase one, is underway.

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# Old Works

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if it will fly."

Indeed, has any project drawn so much attention from so many varied groups? The federal and state EPAs had representatives on site every day during construction. The Montana Fish and Wildlife Department, U.S. Department of Justice, environmentalists of every ilk, sportsmen, townspeople.

"There are 100-year-old pictures that show not one blade of grass was growing on that 200 acres," said Kirk Welsh, di-

rector of field operations for North America for Nicklaus Design.

Soller confirmed the deadness of the property in his initial contact with the Audubon Cooperative Sanctuary Program. He listed "none" under "existing species." Yet, today there are moose, elk, deer, bluebirds... "You name it, it's amazing," said Welsh.

"When grass started turning green people were driving off the road," said Sandy Stash, general manager for the Montana Division of Atlantic Richfield Co. (ARCO). ARCO bought the old mine

from Anaconda Minerals Co. in 1977 and closed it down in 1980. Later, the federal government formed the Superfund and mandated that companies clean up toxic sites around the country. ARCO, not Anaconda Minerals, was stuck with the costs.

Superfund, Stash said, is "a you caught it you clean it law."

Faced with a \$60 million cleanup bill, ARCO sought a better way out. Grabbing hold of an off-the-cuff suggestion of a golf course from the then-county manager, the company began several years of negotiations with the federal EPA. The

struggle, she said, was convincing the state, EPA and Department of Justice that this was a good idea.

"Once they bought into the concept they were a wonderful partner," Stash said.

ARCO spent about \$15 million building Old Works. It will be turned over to the County of Deer Lodge and operated by the local golf authority board.

Approvals aside, building a golf course on a smelting site, with its ovens and flues, was a chore that consumed most of Tom Roe & Son Construction's time for nearly three years.

Some parts of the work took twice as long as normal — two weeks instead of one to build a green, for instance.

The course was shaped, lined, capped and reshaped, and finally seeded or sodded.

First, Soller explained, subdrainage was installed. Roe capped this with 2 inches of crushed limestone as a buffer zone between the subgrade and the cap. An 18-inch layer of heavy clay material was then spread over the whole site, and, on top of that, a sand-loam material in which compost was incorporated as the growing medium.

Roe's crews spread 60-mil PVC liner under the bunkers, greens, tees and the two lakes on the property.

Special care was taken with the greens. Herringbone drainage was installed. The liner was cut and fit down in the drainage, with the intent that no water will ever go through it. Because engineers felt that the gravel layer of the greens might puncture the liner, a 3/8-inch felt material was laid over the liner. Only then were the normal U.S. Golf Association-spec greens built — minus only the choker layer.

The materials used? The subgrade took 600,000 cubic yards of material, while trucks hauled in 550,000 cubic yards of heavy clay and 150,000 cubic yards for the growth cap, according to Soller.

Chip Roe estimated that there were 500,000 square feet of liner under one of the two manmade lakes and 200,000 square feet under the other.

The water supply, Soller said, comes from on-site wells and from water captured by the lining material. The front nine drains into a lake on the 5th hole. When that overflows it feeds into the second lake on the back nine, which serves as the irrigation pond.

Perhaps most eye-catching of all the facets of the course is the jet-black sand in the bunkers. Created decades ago when water was pumped into the hot slag from the mining operation, the sand, Nicklaus said, is "the best material he has ever hit out of in his life."

"Thomas Turf Labs tested it out beautifully," Soller confirmed, "And it gives the course a really unique appearance." A number of waste bunkers (called "low-maintenance bunkers" on this Superfund site) give the course aesthetic flash as well.

Through it all, Nicklaus has carried the mining theme through to the finished product. Old flues and ovens provide a fascinating backdrop to the fairways, greens and tees.

"The idea," Nicklaus said, "was to put up signs at each hole to give a brief history for people to understand what's there. It's like a museum."

The result is a Nicklaus signature design that sits halfway between Glacier and Yellowstone national parks, with a \$20 green fee.

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