

Engineering feats exemplify '90s construction

A bridge too far...

World's 2nd and 3rd stressed-ribbon structures installed at Calif. track

By MARK LESLIE

RANCHO SANTA FE, Calif. — To a man who builds \$60-million freeway bridges, work on the new golf course at The Bridges at Rancho Santa Fe here was "the most unique project we've ever done."

FCI Constructors of San Diego built two 285-foot "stressed-ribbon" bridges over a canyon to access several holes of the Robert Trent Jones II-designed course.

"We usually build \$20-million to \$60-million bridges, but we saw this [call for bids] and thought it would be interesting," said project manager Tom Cameron. "It was. They are the first ribbon-type bridges we've built. It's new technology."

In fact, only one other bridge, that which crosses the Sacramento River in Redding, has been built with this technology.

The stressed-ribbon technology was chosen, according to course superintendent Mike Hathaway, because of environmental conditions — to avoid habitat mitigation.

"It allows you to avoid the canyons altogether," Cameron explained. "Normally when you build a bridge you build false work up from the ground (poles and bracing, etc.) to support the concrete until you pour it and brace it and it can support itself. In this case that was not necessary because of the cables..."

"We built abutments that are anchored into the rock on each edge of the canyon, and then strung



An FCI Constructors crew works on a stressed-ribbon bridge at The Bridges.

You have to have rock at either end for this procedure. If not, you could put a load in the middle and it might pop out of the ground. There is tremendous uplift force to support the bridge.'

— Tom Cameron, project manager
FCI Constructors

cables between the abutments," Cameron added. "Then we suspended 10- by 13-foot x-slabs from the cables. They are concreted together and stressed a second time... All the work is done from the ends."

At each end of the bridge where the abutments are located, 12 shafts were rock-drilled into the canyon and rock anchors were sunk at various angles down 70 feet into rock.

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And a beach too short

Daufuskie Island Club's 3-1/2 miles of beachfront gets 'renourished'

By MARK LESLIE

DAUFUSKIE ISLAND/HILTON HEAD ISLAND, S.C. — Using supercharged equipment and 5-foot-diameter pipes that ran along the ocean floor, contractors have "renourished" 3-1/2 miles of beach at Daufuskie Island Club & Resort in a \$6-million project here.

Setting up oil rig-like gear 2-1/2 miles offshore at Barret Shoals, Great Lakes Dredge and Dock Co. of Illinois dredged up and pumped more than 1.4 million cubic yards of sand along the beach. Bulldozers spread the new sand from the beachfront 50 to 200 yards out into the ocean.

With the additional sand, the tides no longer reach, and threaten, the bulkheads that run along the 17th and 18th holes of Daufuskie Island Club's Jack Nicklaus-designed Melrose Course and for a half mile to the beach club. And the salt water no longer sprays onto those fairways, making turf maintenance difficult.

Natural erosion had severely depleted the beaches at the resort. Resort management worked with U.S. Fish and Wildlife Service and South Carolina Department of Natural Resources officials to plan the project. It was delayed at one point last year until a nest of osprey chicks had fledged.

"The company feels strongly that it is our responsibility to protect the wildlife and environment that make Daufuskie Island unique," Club Resorts

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GUEST COMMENTARY

Building's progress huge in last decade

By BILL KUBLY

"High velocity" best defines the vast changes that have occurred in the golf course construction industry over the past 10 years.

The game of golf is healthy. Its popularity throughout the media continues to reach more new viewers. The economy is making it possible for investors to direct dollars to the golf industry confident in successful returns on their investments. These factors have driven the demand for new golf facilities and the restoration of existing ones. Golf course contractors across America have been, and are constantly looking for the best methods to meet the demand.

With demand comes the need for contractors capable of delivering a product that meets the high expectations of a game rich in tradition, and a philosophy

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Bill Kubly

Bill Kubly is president of Landscapes Unlimited in Lincoln, Neb., and of the Golf Course Builders Association of America, headquartered in Chapel Hill, N.C.

Some course architects adding construction to portfolios

By PETER BLAIS

Golf course architects are becoming increasingly involved with the actual construction of their designs.

Offering limited construction services — usually shaping and related finish work — provides architects both extra revenue and additional control over the completed product.

Among the more active architects/builders are Roger Rulewich, Bob Lohmann, Denis Griffiths, Craig Schreiner, Tom Fazio, Rees Jones, and Robert Trent Jones Jr. Following is a brief look at three of those construction firms.

ROGER RULEWICH

The Roger Rulewich Group in Bernardston, Mass., has done finishing and feature work since the mid-1990s.

"We're not golf course contractors like a [Wadsworth Golf Construction] or Landscapes Unlimited or any of the major golf course builders," Rulewich said. "We specialize in shaping, grading and, at times, putting in materials and drainage. We finish greens, tees and bunkers and sometimes do the grassing. But we don't handle the major

earthwork, major drainage and irrigation, and most often not the final grassing.

"The shaping is so important and integral to the design that we offer to combine those services with our design. We've gotten to the point that if people want us to do the design without the shaping, we're not interested...We give our clients a price for design and shaping right up front."

Rulewich said his design/shaping requirement excludes the firm from many municipal jobs, which usually require those services go out to bid. "We find we don't work with golf course contractors, either, because taking the shaping out of it isn't of much interest to them," Rulewich said. "We usually end up working with local earth-moving contractors, people who do clearing and drainage work. Our jobs usually are a combination of other contractors along with our own people."

Despite warnings from fellow architects that requiring developers to use his construction company might scare away business, Rulewich said: "I found it to be an easy sell."

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GUEST COMMENTARY

Designers exceeding letter and spirit of regs

By BILL LOVE

Golf course architects, builders and superintendents certainly have intensified their effort in recent years to develop and maintain golf courses in concert with Mother Nature. In some ways, the regulatory process has progressed in a similar pattern, becoming much more sensitive to complex local and national issues.

However, in certain areas the process could be streamlined for the benefit of both regulators and developers. The ability to develop layouts in a way that balances environmental, economic and design concerns has become the norm rather than the exception.

Earlier this year, the Environmental Committee of the American Society of Golf Course Architects (ASGCA) updated "An Environmental Approach to Golf Course Development." First published

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Bill Love

Bill Love is chairman of the Environmental Committee of the American Society of Golf Course Architects.

Some architects using own construction divisions

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Clients have become more aware of how courses get built and are much more sophisticated than they used to be... Most of our clients are quick to accept that combination."

The majority of the people involved in the Rulewich Group come from construction backgrounds.

"We have seven shareholders who are part of the Roger Rulewich Group," Rulewich said. "Five of them are involved more with construction than design. All seven of us were with [Robert Trent] Jones [Sr.]."

Rulewich's construction services work particularly well on renovation projects. "Remodeling is probably the place where the idea works best because we can work quickly, efficiently and we're right there with it... Most of our remodeling projects start small but end up expanding into something bigger once the clients see how well everything goes," Rulewich said.

Working directly with the architect's construction team can also minimize the type of work-order changes that usually result in higher construction costs. "The promise we make when we do the shaping is that there are no change orders, there are no extras," Rulewich said. "We'll eat any changes if we have to."

The Rulewich Group has a fairly large equipment inventory, mainly because several of the principals worked on Alabama's Robert Trent Jones Trail and held onto the machinery when they started their own firm.

"Equipment is something you can play with," Rulewich said. "You never want to carry more than you need or can keep busy. So you have to be ready to buy and sell and move equipment

around rather quickly... I'm often surprised when I get out on a site and find out how much we have. In Alabama, we even had a D-8, which is a big machine that I wouldn't think most shapers would have. But it made sense on that project, and now it's making sense on our project in Myrtle Beach."

DENIS GRIFFITHS

Griffiths' construction firm is a rather low-key affair that evolved from the Georgian's love of automobiles and anything mechanical.

In the early 1970s and 1980s, Griffiths and then-partner Ron Kirby dabbled in the construction arena, but more to satisfy Griffiths' passion for machinery than to embark on a new venture.

"We did a lot of work out of the country, which gave me the opportunity to climb on a lot of machinery," Griffiths remembered. "I started on a box blade and ended up on dozers. When you couldn't speak the language and explain something to someone, it was often easier to climb on a machine and try to show them what you wanted to accomplish."

Kirby left in 1986 and Griffiths signed on to do a project for an Atlanta developer who had little use for architects who couldn't act as builders, too.

"It was one of those deals we had to do, the first course at Chateau Elan in 1988," Griffiths said. "We bought some pieces of equipment and rounded up some people. Since then we've done seven or eight projects."

Far more of Griffiths' projects are done with major golf course builders than with his own construction company. "We try to stay in the Atlanta area if we get involved with the building," he said. "There are a lot of great contractors out there and

we want them to know we are not in competition with them."

The real benefit to using Griffiths' construction services, he explained, comes when a developer already has a relationship with major earth-moving, drainage and clearing contractors. This is often the case with a residential golf course development.

"The developer knows he's getting the most competitive numbers on the market already and we can make a real good fit with them by picking up the shaping, features and irrigation subcontracting," Griffiths said.

Griffiths also noted that design changes are easier to implement with his own construction crew. And there is no additional expense to the developer.

"We spell out to our clients that this is the price and if we build it, no matter if we have to change it 14 times, it's our money, not yours," he said.

ROBERT LOHMANN

Lohmann has been in the design business since 1984 and started his construction firm, Golf Creations, two years later.

"Basically, it was providing a shaper on remodeling jobs that were too small for a construction firm but too large for the superintendent to handle alone. We'd bring in a shaper to help shape tees, greens or bunkers, then the superintendent would finish the job," Lohmann said.

Frequently, the superintendent ended up asking Lohmann to finish the drainage, put in an irrigation system or do some sodding. Over the years, the firm grew. "Today, we may do the whole project and have a construction superintendent on site with an entire crew," Lohmann said.

Being able to take the architect's

vision all the way through to the final product is a key advantage of using his construction firm, Lohmann said.

Early in his career, Lohmann found himself drawing plans for developers who would then finish the job using their own crews.

"Sometimes," Lohmann said, "it would turn out bad. The first question people would ask is 'Who's the architect?' So we started asking for the opportunity to work with the developer through construction and provide the key shaper or construction superintendent to make sure it turned out okay."

Lohmann rarely gets involved in heavy earth moving, irrigation or cart-path installation. "We're more of a landscape company that does golf course work," he said. "It's a turnkey situation that allows me to satisfy the developer who wants to make sure the job turns out right at a guaranteed price. We can give the developer a plan and promise that it will cost this much and no more."

Being the builder also gives Lohmann the chance to get in and out of a job quickly, without having to deal with an outside contractor.

Since many renovation jobs are done when play is at a minimum — i.e. off season or after dark — speed is important. "It's just me and the owner," Lohmann said. "We know what we need to do and we just get it done."

Lohmann estimates Golf Creations is involved with half the jobs he designs. The rest are done by golf course builders.

Lohmann's regular construction crew consists of three shapers, three superintendents and a seasonal crew that peaks at 40. His equipment includes tractors, skid loaders, trenchers, small bulldozers (the biggest is a D-4). Dump trucks are rented or the task subcontracted out. ▶

ARCHITECTS SURVEY

Wetlands regs, financing get mixed reviews

By MARK LESLIE

As developers fire down the home stretch towards opening more than 400 courses for the third consecutive year, it appears neither wetlands regulations nor finding enough good builders will stop the growth — although both may hamper it a bit. On the other hand, easier financing may enhance opportunities.

A *Golf Course News* survey of course architects discovered that 42.8 percent of those polled felt it is getting difficult to find qualified golf course builders for their projects, while 57.2 percent replied it is not difficult.

Asked if their clients were finding it easier to obtain financing, 73.2 percent replied "yes."

WETLANDS REGULATIONS

Meanwhile, feelings ran the gamut on the impact of wetlands regulations. Forty-three percent of the architects responded that wetlands regulations are slowing the planning process, but an equal 43 percent said they are having no effect, while 14 percent felt the regulations are actually speeding the process.

"It is getting more difficult each year. The rules keep changing," said Rick Robbins of Cary, N.C.

"Every new regulation slows the process," said

Gary Linn of Knott & Linn in California. "The new wetland rules essentially require a full 404 Permit, which can take one year to obtain. Complete avoidance is the goal in design, although usually that is not feasible."

The regulations are "slowing down the permit process at all levels," said Bobby Weed of Ponte Vedra Beach, Fla.

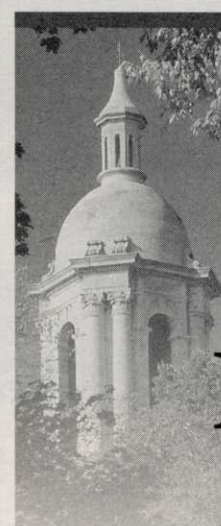
But Lloyd Clifton of Deltona, Fla., was one of the 43 percent who reported "no change in the time frame" with the new regulations.

And in some places there is actual encouragement.

"Regulations are speeding the process somewhat," said Scott Applegate of Signature Course Design in Stuart, Fla. "Misinformation from environmentalists is a major cause of slow permitting and planning."

Perry Dye of Denver reported: "It depends on the state and the circumstances. Everyone is gaining experience in mitigating these conditions, so the process moves faster, more professionally."

"It is slowing down out of state, but here in Michigan it seems to be the same as before — not too slow," said Lorrie Viola of West Bloomfield.



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