



Golf against the odds

Someone once tried to make a silk purse from a sow's ear. Legend has it they failed. It's a fair chance that person didn't have the imagination, engineering resources or a big-enough silk purse to make it as a golf course designer, writes **Andrew Berkman**.

A handful of the world's finest golf courses are built on rolling, coastal land with a sandy base – drainage is perfect and the natural contours ideal for a golf course. When crafting a layout from that type of land designers are usually only restricted by their imagination.

All other golf courses are built on less-than-ideal surfaces, such as rocky deserts, marshy floodplains, clay topography or a flat saltpan. Some are designed to survive six months of snow, while others are built to withstand 11 months of drought or four months of a tropical downpour.

Like golf equipment, agronomy and design techniques have evolved almost to the stage where there are very few places a golf course couldn't be built.

"There are places where designers may not want to build a golf course," said Queensland-based designer Ross Watson. "But there aren't too many places where you can't build a golf course.

"I recently finished one in Japan where we had to move 10 million cubic metres of rock that had to be blasted."

Watson has built a range of courses throughout Australia and Asia, from Palm Meadows in the Gold Coast wetlands to Japan. He's the first to admit that sometimes a designer will be given a perfect canvas to shape a golfing heaven, but they're much more likely to be presented with a sow's ear.

Ross Perrett of design team Thomson Perrett also believes a course can be built just about anywhere, "but in recent times developers are becoming smarter about choosing land."

Perrett and Peter Thomson have accomplished several difficult courses, including draining ocean water for the 54-hole Bin Hai Resort in China and Mt Merapi on the site of a current active volcano in Jakarta.

"The most challenging we've done is a project which is about half built at the moment, in a floodplain about an hour north of Bangkok," said Perrett. "We had to build a wall around the outside and move about 2 million cubic metres of soil."

"Courses are going to look a lot more natural if the land is suitable for the development of a golf course," added Melbourne-based designer Tony Cashmore. "People are building golf courses on the sides of mountains, which is not ideal, but it certainly can be done.

"The toughest one I had to build was here in Melbourne on a former dump, where the pH level was so wildly wrong that we had to modify the whole of the base conditions just to grow grass. It was an ancient oil and briquette dump, but it's a successful nine-hole venue now."

Back to Queensland and designer Michael Wolveridge recalls the challenges of creating a links course on a flat swamp. Dredging of the nearby Coomera River provided designers with enough sandy soil to raise the level of the land a metre and today Hope Island is still one of the finest courses in Australia.

"Palm Meadows by Marsh and Watson certainly pioneered that type of course on the Gold Coast, but this was one of the

“Sanctuary Lakes in Australia was situated on a salt mine on a dead flat piece of land... so we came up with an ingenious way of building nine holes outside the mine and the other nine along the saltwater marsh.”

GREG NORMAN



Greg Norman surveys the Sanctuary Lakes challenge.

biggest projects ever undertaken in that region at the time,” said Wolveridge. “We spent \$20 million on that project and I think it’s a fine example of what can be achieved on a difficult piece of land.”

Let’s say an 18-hole golf course site needs about 60 hectares of usable land – gently rolling is best. A further eight hectares are required for additions such as the clubhouse, practice greens and practice range. That’s a lot of fill or digging to shape a golf course on a difficult piece of land.

However, modern golf designers are excelling in a range of inhospitable environments, from the wetlands of Queensland’s Gold Coast to the desert settings of Dubai or Arizona to create fabulous courses. More than ever, golf courses are proving enduring and adaptable to almost any climate and upon any land.

There are a number of reasons why golf courses have had to become more adaptable:

- Ideal golf course land is rare. A tract of land such as Melbourne’s sand belt, California’s Monterey Peninsula or Ireland’s south-west coast are snapped up by savvy investors for other purposes.
- Ideal golf course land is expensive. The less ideal golf course land available, the more expensive it becomes. Most new courses are also paid for by surrounding housing estates. The land that is low, or more likely to be prone to flooding, is given over to the golf course, while the better land is snapped up by residents and investors.
- Ideal golf course land is inaccessible. Great pieces of land, such as the north coast of Tasmania, where the ambitious Bambougle Dunes resides, require a flight to Launceston and a one-hour drive to the seaside town of Bridport. Needless to say, great golf courses attract keen golfers, but it’s a high-risk strategy to build a course so far from a major population centre.

Modern-day golf course architects play an important role in evaluating difficult sites and the cost and challenges of turning less-than-ideal land into a top-quality golf course.

Many designers will experience both ends of the spectrum. Take Greg Norman, who along with Peter Thomson and Wolveridge has led the modern design boom in Australia. On Victoria’s Mornington Peninsula, Norman and Bob Harrison penned one of The National’s three fine courses on rolling dunes. Across Port Phillip Bay he also created Sanctuary Lakes on a flat, inhospitable region at Point Cook, on land with a high salt content.

Greg Norman has heaped high praise on the Sanctuary Lakes course, rating it among the best projects he has designed. “I know you are not supposed to play favourites, but...there are some projects that I absolutely loved doing,” Norman explained on his website.

“Sanctuary Lakes in Australia was situated on a salt mine on a dead flat piece of land. We had to convert the salt mine into a golf course and residential development, so we came up with an ingenious way of building nine holes outside the mine and the other nine along the saltwater marsh.

“As the members play the course, they are treated to a dramatic change in the environment. When I go back there now, 12 years later, it is still just unbelievable to see.”

Wolveridge marvels at how much easier modern technology has made design on difficult tracts of land.

In his scrapbook from the early 1970s is a project from northern Bali, in the crater of a dormant volcano, 1100 metres above sea level. The Bali Handara Kosaido Country Club, once rated among the top 100 courses in the world, was an engineering marvel at the time, constructed by local Balinese under the watchful eye of the designers. In something akin to the pharaohs building the pyramids, hundreds of locals worked to construct this labour-intensive creation, as there were no bulldozers available.

"Today we use a lot more heavy machinery, but it's amazing how much dirt can be moved by 100 people, many of whom were imported from Java for the project," said Wolveridge.

Desirable features of any golf course include rolling hills and interesting landscapes. How they are achieved is a skill of those with an eye for engineering and landscaping. There are some basic elements to any golf course, which if they don't exist on a tract of land, will need to be imported or created.

Modern designers are required to take an environmentally responsible approach to the development of the new golf course. In addition, two more important factors in design are drainage and soil condition.

"Drainage is the major issue in every golf course, particularly where it doesn't exist. Sand base is perfect because you don't have to worry about drainage," said Watson.

"The more difficult the piece of land, the more dollars needed to build a world-class golf course. The cheapest are those that are built in sand-belt regions, because you don't have to spend a lot on drainage and you don't have to strip and replace top soil."

Each type of difficult landscape has its own challenges.

SWAMP LAND

Watson's Corinda Waters in New South Wales was a badly degraded, flat swamp that required a lot of imported material. "We managed to turn that into a decent golf course," he laughed.

Florida and, closer to home, the Gold Coast, are home to some of the finest examples of creating stunning golf courses out of wetlands. On the Gold Coast, courses were built in the late 1980s to enhance the swampland between the ocean and the hinterland. Today the courses are at the heart of some of the most desirable golf course estates and resorts in the country.

Modern technology may enhance these designs further, but modern red tape is proving to be very restrictive, particularly in a floodplain situation.

"The first challenge for a floodplain is dealing with bureaucrats," said Watson. "They decide whether you need to keep the floodplain's

capacity. If you have to keep the capacity then it can be very restrictive to create some types of landform. Then comes the difficult decision of whether to create some slightly cambered fairways to get the water off them and into some sort of drainage."

DESERTSCAPE

The desert courses in the Middle East were once laughed at. The region was fodder for pub quizzes asking: "Where in the world do you carry your green and aim at a brown?"

In 1988, golf gained a proper foothold in Dubai with the inauguration of a real grass course – the first in the Middle East. The dozens of green fairways contrasting starkly against the harsh rocks and white sand are now a destination worthy of travelling halfway across the globe. But there are some things beyond even the best designer's control.

There are a few versions of this tale, but it tells of the designer who had almost finished a course in Dubai when a desert sand storm dropped a metre of sand over the course. The designer spent the next six months trying to find the topsoil and layout he'd created.

Less volatile are the desert courses of Arizona in the United States. "To be considered a desert course, the track must actually feature the desert, rather than trying to re-create a parkland or Irish course in the dry heat," said Michael Johnson, a committeeman at an exclusive resort on the outskirts of Las Vegas. "You also know it's a desert course when you're forced to buy extra golf balls after just nine holes."

Johnson went on to say that every shot-making decision on a desert course must be precisely calculated to avoid the tight fairways surrounded by areas of natural desert landscape, including century-old cacti and Joshua trees.

Australia's own version of a desert course is the enjoyable Alice Springs Golf Club, bordered by red rocks and dramatic cliffs. However, desert courses are uncommon in Australia. "There aren't many yet; but there will be in the future," predicted Cashmore.

CLAY-BASED FLAT

A vast, flat tract of land provides some of the most difficult design challenges of any type of topography. Millions of cubic metres of soil are required to shape the land and provide a buffer between the playing surface and an inhospitable base.

The base is usually difficult, ranging from the acid sulphate of the original Hope Island site to the saltpan of the original Sanctuary Lakes site.

Creating steep slopes during construction is not only costly to do, but expensive to maintain. Slopes in excess of 3:1 (for every three units in distance, the elevation changes by one unit) often require specialised moving equipment or must be moved by hand.

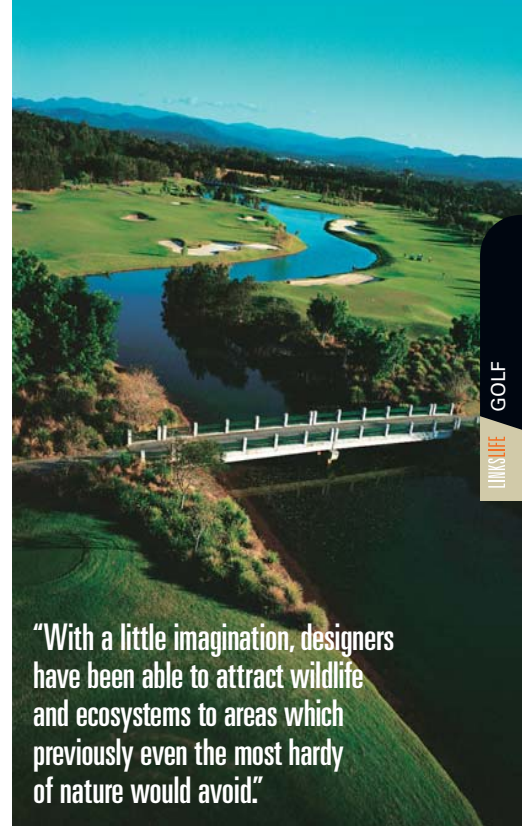
"The drainage problems on a clay-based course can be enormous. The challenge with a clay base is the need to get water channelled into the correct patterns in the case of a flood," said Cashmore. "Drainage has to be refined so that water will go to specific areas, sometimes kilometres away."

On the positive side, clay-based flat courses are often easier to walk and look spectacular set against the flat, open surrounds.

These types of courses are often the most environmentally rewarding. With a little imagination, designers have been able to attract wildlife and ecosystems to areas which previously even the most hardy of nature would avoid.

A quote in one of the plethora of modern golf course design books on the market best sums up the challenges faced by designers when presented with a flat, uninhabited tract of land: "The art of being able to turn these inhospitable sites into golf landscapes that exhibit visualised beauty where it does not currently exist."

The same book espouses and dispels the theory of minimalist design. Minimalist design is fine when a piece of land allows. If that land is unfriendly, inhospitable and difficult, only a designer with modern technology and excellent engineering knowledge and a developer with a large silk purse will prevail. ■



"With a little imagination, designers have been able to attract wildlife and ecosystems to areas which previously even the most hardy of nature would avoid."

The Hope Island miracle, built on acid sulphate.

