



Ode to the mountain, golf in stone and sand

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Imagine standing on the sixteenth tee of a golf course on the west coast of Ireland, at the very edge of the Atlantic Ocean. Picture the immense sand-dunes rising above the beach below, sitting fully exposed to the elements.

Ballybunion (Old) is a classic example of links golf, and of golf-course construction in sand environments. This layout was created by hand and horse-drawn implements in the early 1900s (revived as a golf course in 1906 and then further strengthened in 1936) in what is very undulating and in some places quite steep terrain.

Moving through the links, you can imagine some of the holes being discovered among natural dunes. In other areas it is obvious that a lot of work has taken place to create the unique golf forms that make up this great golf

course today. Near the ocean, some of the larger dunes have been dissected, amended, and, reformed, giving these holes distinct shaping in contrast to the less undulating (by contrast) contouring of the inland holes.

Such sites available to golf-course architects today are rare and truly to be treasured. Environmental and coastal legislation, mining interests, protection of agricultural land, market accessibility, and rising land costs are all contributing to the demise of potential golf-course sites founded on pure sand.

Groups developing golf courses often have to move to land that is sometimes seen as not useful for any purpose. Such groups then invest in reforming the site to accommodate the desired facilities while still maintaining good engineering principles, enhancing or

recreating the local environment, and making it all come together under budget.

This process stretches the architect and the entire development team, demanding their best efforts and innovations. This, in turn, often creates a new golfing wonder on ground that was previously barren and stony. Such sites differ in many respects but generally can be described in three categories.

Firstly, there are designs that primarily utilise the top of the mountain. This normally involves reforming the upper portion of the hilly terrain to create enough undulating land for the playing of golf, and associated facilities along the ridgelines. This is spectacular golf, as most holes often have magnificent views across the adjoining chasm, valley, or next ridge. However, 'spectacular' also means



OPPOSITE Ballybunion Golf Club (Old), County Kerry, Ireland. An image of the sixteenth hole and the irresistible brand of golf played through the massive sand-dunes. [Photograph by Larry Lambrecht.]

OPPOSITE Cape Kidnappers, Hawke's Bay, New Zealand. A view of the par-5 fourth hole; significant engineering skill was required to enable this project to see the light of day. [Photograph by Larry Lambrecht.]

'expansive golf', as larger tracts of land must be used to create the golf, given that much of the sides and valleys cannot be utilised.

Examples of this style of golf include Cape Kidnappers (New Zealand) by Tom Doak, Dallas National Golf Club (United States) by Tom Fazio, Capilano Golf Club (Canada) by Stanley Thompson, and Old Head Golf Course (Ireland), where the sandstone rock peninsular jutting out into the Irish Sea was transformed in the early 1990s into one of Ireland's most dramatic golf courses. Over half a million plants brought in during the eight-year construction process contributed to establishing the site's strong environmental reputation and visually stunning landscape.

The eighteen-hole Old Head site takes up 180 acres of the 220-acre land area, and at some points the rock rises vertically almost 300 feet from the sea to the carpet of green above. Like the other examples of this style, such golf courses naturally attract many golfers and are photographed regularly.

Playing conditions on these courses are highly dependent on the weather, as they are always quite exposed. A golfer taking a seven-

iron one day may take a driver twenty-four hours later for the same shot. Such sites can also be quite 'unforgiving' of golf balls that stray beyond the designed playing surfaces—but no passionate golfer would disagree that this is a price worth paying for the sheer pleasure of walking these fairways.

I say 'walking' as most of these types of golf designs can be walked, although some may have difficult transition zones from hole-to-hole.

The second category of the stone golf design philosophy moves away from the tops of the mountain to the sides and, thus, a much more difficult scenario for the golf architect and construction team. This involves major cut-and-fill along the sides of the mountain with careful site engineering and environmental rehabilitation being undertaken to maintain the integrity of the projects.

Quality site survey information and soil profile data are prerequisites for undertaking a design of this nature. A detailed analysis of the terrain is necessary to avoid rock falls and correctly channel rainfall through the golf-course zones to designed lakes or natural

waterways. Timing is another factor that is critical to the construction process as bulk works, shaping, installation of services, and grassing all need to occur so that stabilisation can be achieved prior to any adverse weather. For example, unprotected golf works along mountain slopes can receive significant damage during high rainfall events, especially in some of the monsoonal areas of Asia.

Quite often it may be best to complete major works, establish grass and possibly landscape, then return to complete golf features such as tees, greens, and bunkering once the priority of stabilisation has occurred.

It is tempting to minimise the work done on golf courses along mountain slopes; the cost of such construction is comparatively high, especially as most of these sites are based on rock. However, it is also important to give adequate protection to the golf experience and to allow reasonable landing-areas, especially for the higher handicap golfers. Small landing-zones with a steep drop-off to one side of the fairway and a high slope on the other, allow little margin for error. They create a poor satisfaction golfer profile, and



do little to promote regular return golfers.

Most of these designs also require the use of a golf cart path as significant changes in elevation often occur, and while these often provide special visual vantage points, the effort of

moving from one level to another is beyond most golfers. Put simply: it is just not enjoyable without a cart. When constructed on the high side of the slope, the golf cart path can also provide valuable drainage lines. This

further protects the golf course through the use of both subtle sloping of the cart path back into the hill, and uphill trench drainage alongside the cart path covered with an appropriate grating.



An example of this style of mountain-side golf includes the highly rated Spring City Resort (China), both the Jack Nicklaus (Mountain) Course and, to some extent, the Robert Trent Jones Jr Course. Both layouts comprise eighteen holes. Other examples include the Monte Mayor Golf Club (Spain) and the Oxford Golf and Country Club (India).

Pictures of the Oxford Golf and Country Club reveal how the design also uses near-vertical rock walls that were, to some extent, the result of previous mining of the area. These sites provide dramatic locations for golf greens and are quite often found at mountain sites where rock is predominant.

The third category of stone golf-design philosophy utilises both the slope and valley portion of the mountain sites, occurring where the valley floor or lower areas are generous enough to accommodate golf.

The best design result on sites like these is when the golf architect can move the fairways generally along the slopes, rather than straight up and down the slopes, so as to avoid very steep rises along a hole. Hopefully, the site allows the architect to route the golf

course appropriately—moving slowly up several fairways to gain height, then designing either the same style down, or opting for a more dramatic downhill hole. The latter is the preferred approach, for most golfers do not mind encountering a steeper, more-dramatic downhill golf hole, as these tend to fully display the hole. Few golfers, however, enjoy steep, uphill holes; these tend to hide landing-zones and are difficult to walk, so a balance must be kept in mind.

With all categories of this mountain/stone design, opportunities occur to retain natural outcrops of rock formations either in the design phase or during construction excavation. Such rock assists in linking the golf course to the mountain, and often creates strong visual memories for golfers who visit the site.

Golf-course architects find it difficult to minimise disruption to a mountain-related site, but every effort is made to retain existing vegetation, whenever this is possible and desirable.

Depending on the site, this third category of stone golf-design may also provide the best



of the three options, as it combines a portion of the views attained by the ridgeline golf, but without the more severe impact of weather. It also provides many of the opportunities enjoyed by the second-slope design philosophy, with the added advantages of more gentle terrain in the lower areas.

As land availability and regulation continue to push golf development into marginal

land, golfers will see many more of the distinct mountain-stone golf courses. For golf architects and the construction team these sites will present a challenge, but from such challenges will emerge some very special golf courses.

ABOVE The Oxford Golf and Country Club, Pune, India: Golf along the rocky slopes. [Photograph by Phil Ryan.]

OPPOSITE Old Head Golf Links, County Cork, Ireland: A big rock upon the seal Laid out upon a 220-acre promontory of historical, archaeological, and scientific interest, the 7,100-yard golf course is configured as two returning loops of nine holes. [Photograph by Phil Ryan.]