



Golf architecture

New York State Of Mind

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Opposite page: The scenic par-3 8th at Waimairi plays from new square-style tees over a small wetland.

This page, main: Water also lurks alongside the par-3 17th, along with a wasteland area. The hole features a fairly large, accommodating putting surface.



Above, left: It's decision-making time should you drive into good position to the turning point of the fairway at the par-5 18th – with a wetland nipping into the fairway 40 metres short of the green, do you go for broke or lay up?

Above, right: The view from behind the 12th green, looking south to the tees with the Port Hills in the background.

The revised clubhouse location became the heart of the re-routing: in its existing location, the clubhouse was exposed to the ubiquitous easterly winds, meaning the large membership could rarely enjoy sitting outside; holes 9 and 10 finished and started respectively remote from the clubhouse.

New Beach Club

BY KRISTINE KERR

It's not often an 18-hole golf course with 800 locally based members has the opportunity to close nine holes for major remodelling. However, Mother Nature in the form of a number of severe earthquakes in Christchurch during 2010-2011 provided the *raison d'être* for Waimairi Beach Golf Club to boldly revamp their course. With works completed in January, the course now boasts 13 new golf holes, practice facilities, and a new clubhouse on the way.

The Waimairi Beach Golf Club has been an integral part of life in the eastern suburbs of Christchurch for the past 80 years, and lays claim to one of the largest golf memberships in the Canterbury region. An average Saturday would easily see 200 rounds being played.

During 2010-2011, three significant earthquakes over a 10-month period caused major upheaval at the course as it suffered extensive surface damage, liquefaction (see *breakout*) and damage to irrigation pipes. Initial repairs carried out by the greens staff and contractors included several re-surfaced fairways, installation of hundreds of metres of

irrigation pipe and the removal of large tracts of pine trees. In December 2011 another earthquake devastated the back nine once more. This time the clubhouse also sustained considerable damage and was subsequently condemned.

While the devastation meant nine holes were unplayable, the clubhouse needed to be demolished, and membership dwindled as people left the city, it also provided a rare opportunity for the club.

Designer and contractor presented a scenario to the committee and subsequently to club members at a special General Meeting, where the clubhouse could be relocated to a more favourable position on the site and the golf course re-routed accordingly – with 13 new golf holes, driving range, two practice putting greens adjacent to the clubhouse, and an endeavour to minimise risk of earthquake damage in future quakes. All this in the space of one year! Votes were unanimously in favour of the upgrade.





Above: it was imperative to 'raise' the profile of many of the holes at Waimairi after the earthquake. Construction works saw the 15th tee raised and also a wetland carved out.

Right: At the 16th, previously tree-lined dunes were cleared and incorporated into the shaping of the hole. This allowed for widening of the fairway and increased the separation between holes. Healthy trees were retained.

With a rectangular-shaped site, the centre of the course was selected for the new clubhouse location, from which holes 1 and 10 could emanate and to which holes 9 and 18 could return. The clubhouse would be oriented to maximise a north-westerly sunny aspect, views over the course, and diminish wind nuisance from the east.

As its name suggests, the course is to be found near the coast and on sandy soils – the perfect medium for golf course construction, with its inherent easy earthmoving, great drainage and turf growing qualities. The snag of this otherwise ideal golf course locale and construction medium, is that the course is very low lying, only several metres above sea level, and the water table is high in the sandy soils.

In earthquake terms this means the site is prone to liquefaction, which happens in loose, sandy or silty soils below the water table. Pressurised water is forced up to the ground surface through the easiest path it can take, taking silt and sand with it, forming sand boils on the surface. In the case of Waimairi Beach Golf Course, liquefaction erupted in large pockets.

A key theme of the early design concept was to create low, sandy waste bunkers as a strategic feature, to generate material for shaping and to raise the golf features above the water table. Working with hydrologists, it was determined that this raising of golf features and creating low 'sacrificial' sandy areas nearer the water table was the most cost-effective method of minimising earthquake risk to golf features.

The removal of large tracts of pine trees between holes had exposed dune formations that could be readily incorporated into the hole design – creating undulations and slopes in fairways that were previously flat. These features, bunkers, waste

bunkers, native wetlands and dunes are the keystone of the design, and give the course a look that is poles apart from its previous visage. Eighty-year-old greens had lost their shape and contour... previously narrow fairways were constrained by dense pine plantings: the course is now more open, with sweeping vistas, and shaping reflective of the Port Hills in the skyline to the south.



As a member's course, with around 200 rounds per Saturday, in order to maintain pace of play and golfer's enjoyment the brief was to make the course interesting yet not overly difficult. Sustainability and minimising ongoing maintenance costs were a strong consideration, and grasses were selected to suit the local climate.

New grasses which are hardy and well-suited to the local climactic conditions have been introduced to the golf course, and have vastly improved the playing surfaces. The new grasses are a fine fescue mix on the fairways, Jasper II Creeping Red Fescue and Silhouette Chewings Fescue (*Festuca rubra*), with the addition of drought-tolerant hard fescues (*Festuca longifolia*, *Festuca duriusculain*) in the out-of-play / unmaintained-rough areas. The hard fescues are intended to be left longer in these areas, and have proven to be easy to play out of, while also providing a seasonally changing palette.

A new generation of browntop from the South Island, Arrowtown, has been sown on the greens. Arrowtown is finer and denser than industry standard browntop, has been tested to perform well all year round on putting greens, and recovers rapidly from renovation. Design commenced in March 2012, construction in April 2012 and 13 new holes were shaped and grassed by January 2013. The first three new holes opened in November 2012 while construction moved around the course. Nine holes remained open; the earthquakes and the sequence of construction meant that at least nine holes were open at any one time during the process.

Given the short construction program, weather conditions would play a crucial role in timely completion. Heavy snowfall mid-winter meant one week of weather delay. Fortunately, ground temperatures stayed warm enough to encourage strong grass growth on the recently seeded holes.

Spring 'Nor-Westers' – powerful, warm winds which characterise Spring in Canterbury – were a hindrance to the preparation of a smooth, debris-free surface for seeding, as well as an irritant during seeding. Some afternoons the swirling sands were reminiscent of a desert, and the course's neighbours were very patient during this time!

For the first time in two years, the club had their full complement of holes open for play on May 1st.

Set on 42 Ha, the site is small and the course is relatively short by modern standards at 5500 metres. It is still a par 72 and there is good variation in length of holes of the same par. There are three generous tees per hole, designed for each level of play as well as allowing for turf recovery on a high-traffic course.

In designing a shorter course, variety or similarity in hole design seems to be somewhat more distinguishable, consequently much effort was made to ensure diversity. Where holes are not long, clever club selection is called for instead if a golfer is to make par – or better. Newly introduced waste bunkers present an assortment of challenges, with some being easy to play out of, while higher faces are more confronting in tactical locations; the ever-present easterly winds (and spring Nor-wester!) constitute another form of contest.



Liquefaction explained

Liquefaction is the process whereby, during earthquake shaking, sand and silt grains in wet soil compact and the water in the spaces between the grains is squeezed. The water 'pushes back' and pressure builds up in the water until the silt and sand grains 'float' in the water. The soil particles are then not able to support the weight of buildings and roads and they can tilt or sink. The pressurised water is forced up to the ground surface through the easiest path it can find – often through cracks and crevasses in the ground or concrete. The water takes silt and sand with it, forming sand boils or sand volcanos, or when there is a lot of it, filling up large areas with sand and silt.

Source: www.ecan.govt.nz/advice

Top: The old 16th green, with its surrounds ravaged by liquefaction.

Bottom: Earthquake damage to the old 14th and 15th holes; now holes 15 and 16, these holes have been elevated with low sandy wetland between.

The challenges and increased strategy of the course add a new dimension to the round and are proving popular with members. Two of the par-3s have become early favourites: holes 8 and 12.

The 8th plays over a low wetland to an elevated green nestled into one of the few remaining tracts of pine. The hole appears challenging with a bunker short right and a slope from the trees down to the green. The green however is receptive – almost punchbowl – and while its entire surface can be seen from the tees, looks narrower than it is. Many golfers are either pleasantly surprised to find their shot on the green, or less thrilled to find the bunker short has tricked them.

The 12th commences with a forced carry from the tees over a short sandy waste area, towards two bunkers in the 'face' of the fairway. In an easterly wind, aim for the right-hand greenside bunker in expectation of landing safely on the slightly severe right-to-left sloping green. Too far left and the ball will run off into the 'catcher's mitt' below the green.

The club pro's favourite is hole 13: a sharp dogleg par-5 calling for accurate shot length from the elevated tee. The landing area is wide, but judging drive distance is crucial: too long and the ball will end in the shallow wetland; too short, and visibility and line of play may be obscured by several tall pines.

The 460-metre par-5 18th provides a fitting climax to the round, incorporating a representation of all of the new features: the tees nestled into a low wetland provide a good view of the expansive first landing area, just

short of a saddle across the fairway. Reaching the saddle the rest of the hole opens up and to the right of this is a waste bunker. Mature trees are left of the fairway at the second landing area, where a wetland nips into the right-hand side, some 40 metres short of the green. The timid will lay up, while the bold long-hitters will aim to clear the wetland if winning the match depends on reaching the green in two.

The eastern suburbs of Christchurch were among the areas hardest hit by the earthquakes. While there was much uncertainty with infrastructure and people's homes, the course remodelling has been incredibly beneficial in bringing a positive outlook and enhancing the sense of community. Beyond that, the club provides Christchurch with a virtually brand spanning new golf course and has signed up nearly 50 new members in the past month.