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Heritage meets classic design in NZ

THE thoughtful design of Pegasus Golf Course, a new 18-hole parkland course in Canterbury, New Zealand, pays homage to the cultural and landscape heritage of North Canterbury. The marriage of indigenous Maori legacies with the anglicised settlement of the region is diligently reflected within the course.

Set within the pastoral expanse of the North Canterbury plains, Pegasus is shaped by sweeping landforms, highlighted with lakes and streams, maturing trees and wetlands. The snow-capped mountains of the Southern Alps (to the west) and the Port Hills (to the south) frame fairway and water views. Opened in December 2009, the golf course is part of the high-profile Pegasus Town development by Infinity Group that will eventually be home to 5000 people.

Located on State Highway 1, some 30 minutes north of Christchurch, Pegasus is easily accessible and occupies a highly visible parcel of land between the highway and the new town. With a vision to create an attractive entry point, the developer secured this site for a golf course. The parkland style and distinctive rural character provide a seamless transition between the surrounding rural land use and new

town, and were strong attributes in securing successful planning consent.

The Pegasus site has an unusual history, and whilst development was controversial for cultural reasons, it also brought to light for the first time further evidence of early New Zealand settlement. Dating back some 500 years, the site is adjacent to the famous Kaiapoi Pa (historic Maori settlement), once a stronghold of the Ngai Tahu tribe of Maori people. It was in fact the heart of the Ngai Tahu settlement, famed as the largest greenstone (jade) industry and trading post in the country. Sacking of the pa by the North Island Maori chief Te Rauparaha in 1831 rendered the landscape “tapu” (sacred); consequently many local iwi (Maori people) were initially opposed to the development of the town on the site. However, the values held by the iwi were recognised by the client and aspects of the history have been incorporated into the design. Now Pegasus is recognised as the first development on the South Island to preserve and celebrate the essence of a unique cultural heritage, blended with the remarkable North Canterbury landscape.

Traditionally the Maori language is an oral rather than written one. Whilst some archaeological sites within the

golf course were identified early, the full extent of the treasure trove was unknown. The previous farmland use provided no obvious clues to the heritage of the site, with some clues only brought to light during construction. It was an illuminating process for all. American Dan Witter headed the team of full-time archaeologists and cultural monitors who observed construction, during which significant discoveries were made. These, in some instances, led to change in design and minor delays in construction.

Initially, “known” areas of cultural significance were considered during layout and design, and solutions found to the resultant challenges of earthworks limitation, cut-and-fill balances and drainage problems.

The inclusion of significant waterways, wetlands and native and exotic planting reflect the common goals of all parties; environmental and ecological concerns all aligned with the goals of the Maori, the client and golf course design philosophies. Plus, a full-time cultural advisor from the Ngai Tahu tribe was employed by the client to liaise between the local community, the archaeological team and the client project teams.

Befitting a parkland-style course, water features strongly in the strategy and

layout. Lakes connected by streams and weirs wind their way through the course. This extensive waterway network provides strategic golfing highlights and with striking visual stimuli demonstrates a fundamental element of the early Maori way of life. The ‘Rununga’ (assembly of local Maori) were instrumental in the retention and enhancement of the waterways that speak of both transportation and food resource – the highways and fridges of the past!

In further recognition of this history, the early design of the 15th hole was re-interpreted to recognise the sea-faring culture of the Maori, by the incorporation of a split fairway across the Taeurutu Gully, retaining an historic ‘waka’ (canoe) link to Kaiapoi Pa.

As ‘food’ lived in healthy waterways, keeping the waterways clean and free from pesticide and fertilizer run-off from the golf course was an important goal for the project team.

An Environmental Management Plan was prepared as part of the consent process, setting out maintenance and management practices dealing with drainage, treatment of storm water and golf course run-off. Golf course



drainage is directed into the lakes. The course is fortunate to have a plentiful underground water supply which is pumped and piped into the top lake. The series of lakes and streams meander their way through the course to the lowest lake, the irrigation lake. Here, filtration is important to keep the pipes to the pump station free-flowing. The spillway from this lower lake discharges into the Taurutu gully, which provides storage capacity, and where extensive wetland planting further filters the water before it leaves the site.

RESPECT: Pegasus pays homage to the cultural and landscape heritage of North Canterbury.



Wetland plantings are prominent throughout the golf course and aid the filtration of chemicals and run-off from the golf course. All storm water run-off from the development flows through wetland and grassed areas prior to entering any other waterway. Native plant species in these wetland areas thrive in both wet and dry conditions, attracting native birds and wildlife, and minimising requirements for watering and maintenance. Wetland areas are also a strong golf feature and are very much in play on a number of holes.

Historic sites in some instances curtailed earthworks. One area (now the 6th and 9th holes) was discovered to be one of the southern most 'kumara

(sweet potato) cropping' areas in NZ, indicative of early settlement patterns. Excavation in this area was restricted and holes had to be largely filled rather than cut, with drainage then becoming an issue. An innovative design solution left the area between the parallel holes lower, where wetland planting facilitates drainage and mitigates the need for deep trenched storm water.

Historically, shingle quarried from an adjacent borrow-pit was placed around the kumara plants for warmth and water retention, extending the growing season for each plant. The residue of this led to the requirement for stone burial during construction (mentioned because of the fun the construction crew had working with additional specialist machinery).

The golf course is flanked on one side by a rolling dune formation – the Western Ridge – which was the site of a greenstone 'factory' estimated to be 500 to 700 years old. In order to respect this legacy, the ridge became the boundary of the site and was not incorporated into the design (sadly from a designer's point of view). A little of the natural undulating dune shape spilled over into the course and the 16th hole, parallel to the dune, presented

natural flowing topography with minimal requirement for shaping.

Significant findings during construction included ancient burials associated with the Pa, and blessings by local Maori elders took place in line with correct Maori protocol. These showed appropriate respect for the ancestors and cleared the way forward for future use of the site.

Retaining the flowing Taurutu Gully at hole 15 turned out to be fortuitous, as during construction of a crossing, contractors uncovered the ancient remains of a woman wrapped in woven flax, indicating the importance of the precinct as an ancestral burial site. The re-routing of the gully crossing provided a design solution.

Preparations for construction of a pump station led to the discovery of another Pa – a fortified settlement, again estimated at more than 500 years old! The pump station was re-located and plans for additional chipping greens and instruction tees were abandoned in preference for a cultural 'garden'.

Topsoil stripping at hole 15 uncovered fence posts as evidence of a 'kainga'



culture

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BY KRISTINE KERR

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– a residential settlement. Fortunately for all, this was at the start of the 15th fairway, an area where minimal earthworks had been planned and the hole could be constructed according to plans. Planting subtly acknowledges the significance of the area.

Numerous middens were uncovered throughout the site, evidenced by shells and animal bones. One area is thought to be a toilet, coincidentally where a catch basin had been located on one hole – I'm not going to divulge exactly where that is though!

Golf Course Design Elements

Within the above constraints, the flat terrain offered a blank canvas typical of inland sites, and called for shaping to provide interest. It allowed a balance between engineering and environmental appropriateness within the site and permitted an aesthetics-based approach for residential areas and the highly visible entrance. This led to the styling of a parkland golf course with sweeping landforms.

Two bunkers to the left appear to be adjacent. In reality, the shaping disguises a generous landing area between, with a clear shot to a receptive punchbowl green. The uncertainty of this approach may entice players to lay-up short right of the first bunker for a shot over the water to the green, or go for the green from the tee at a distance of 290 metres.

A bunker, short in front of the 135-metre par-3 14th green, appears to sit greenside and toys with the golfer's

visual assessment of length. The dunes shelter the eastern side of the course; however, a high-trajectory shot to the green could be stalled by the direction into the prevailing wind. Short of the green a ball may roll left or right on the closely cut fairway, leaving a pitch over bunkers either side.

A greater extent of earthworks on several holes allowed the introduction of more elevation and depth. One of these is the 4th, a reachable par-4 – particularly with the assistance of the prevailing wind! The green is elevated above adjacent wetland, while bridging the elevation change, a nest of four greenside bunkers awaits the errant shot.

Elevated tees at hole 5 play over a wetland and three ominously deep, diagonal fairway bunkers appear like a row of sentinels, stacked with a further two bunkers (which are actually 90 metres beyond). The threat is easily negotiable and the player biting off the most distance over the right hand bunker will be rewarded for greater roll towards the green.

Aiming for the left of hole 15's split fairway demands a perilous drive

LEFT: The 11th hole.

BELOW: A sensitive approach was required when dealing with the Taurutu Gully.



Walkways through the site and golf course facilitate a non-obtrusive way of acknowledging site features and interpretation signage will tell the story of the past and present. A Wharetoanga – museum – is planned to preserve and showcase findings.

Turfgrasses suitable for the climate were selected, with Egmont Browntop greens and tees, and fine fescue fairway mix providing colour contrast. As only tees, fairways and greens are irrigated, hard fescues in the rough are drought-tolerant and frame fairways. Leaving these longer will provide a seasonally changing vista and mowing heights can be manipulated to guide play.

It provided the opportunity for creative arrangement in the variety and location of hazards and highlights. We incorporated crucial elements of classic design with a variety of strategy and challenges, risks and rewards, without being formulaic.

Even a course that a golfer knows well may play tricks with the eye and mind, and in successfully overcoming a perceived obstacle, a player feels a sense of achievement. At Pegasus we have created rolling undulations to incorporate plays with perspective, notably on holes 3 and 14.

Hole 3 is a par-4 dog-leg right, with water on the right-hand side.





TOURNAMENT-HARDENED:
Pegasus has already hosted a championship event, playing host to the Pegasus New Zealand Women's Open in February 2010. Pictured above is the drive at the par-4 10th and the scene at the green of the par-5 18th. As you can see, water plays a pivotal role at both holes!

across the gully, leading to a soft approach into the length of the green. The safest play further left leads to the most difficult approach to the green, which slopes away towards the gully. The drive on the right-hand side of the fairway sets up a crossing to the narrow angle but receptive shape of the green. A classic risk-reward hole, this has already become a firm favourite with golfers for its fear factor and distinctiveness.

Facilitated by a late manipulation of the property boundary, an elevated tee was added atop the dunes at hole 17. Lengthening the hole means the

big hitters can "go for it" over the first wetland carry, stopping short of the second wetland now at 290 metres from the championship tee.

At the 18th, the longest hole on the course at 555 metres from the championship tee, the golfer is faced with not only a physical challenge, but a strategic one. A controversial mid-fairway bunker presents the golfer with a choice to either lay up, or "go for it" over the bunker. Laying up will suit the high-handicapper as the ball gets a good roll to the left, away from the bunker, and providing an uphill lie with good visibility. It does not penalise distance dramatically.

Nailing the drive over the bunker is rewarded with a good roll and on such a long hole this will tempt many. The green is visible in the distance and the golfer will perceive that they must negotiate a series of cross fairway ridges and rolls; the fall is right to left towards a lake running the length of the hole, and the fairway is highlighted with lake-edge bunkers. Play culminates in a largely undemanding green. In head-to-head battle, if the match has been tight it will be brought to a close with a strict putting contest, viewed across the water from the clubhouse.

As a 'championship' parkland course Pegasus is distinguished from the existing country courses of North Canterbury, and is proving a destination course attracting additional golfers to the area. It was crucial to design a course that will be equally fun and challenging for regular members as it will be for itinerant visitors. Pegasus is proving to be just that.

The golf course and waterways are intertwined with 98 large residential sections. A clubhouse, pro-shop, with gym, swimming pool and tennis club will provide a hub for the community, and practice opportunities are provided by a 300-metre amphitheatre-style driving range with covered bays and grass tee, target greens, practice chipping and putting greens.

At 6300 metres in length, the championship course has already been tested at the highest level, having hosted the Pegasus New Zealand Women's Open in February 2010 (with naming sponsorship from the company developing the town). As an event co-sanctioned with the LET and ALPG, for the first time in New Zealand, it was a landmark staging – indeed New Zealand Golf hailed it the most important step for the development of women's golf in the country. No doubt much more is in store.