Kyle Phillips Golf Course Design

Dated December 13, 2021

Muriwai Downs

Golf Course Design Description

By: Kyle Phillips

Introduction

1. Kyle Phillips Golf Course Design (**KPGCD**) is widely regarded as one of the foremost contemporary golf course design businesses in the world. I am the Principal of KPGCD and have been a member of the American Society of Golf Course Architects and the American Society of Landscape Architects for over 30 years. My golf course design work has been across 30 countries and 5 continents (Africa, Asia, Australia, Europe, North American and South America). I have a Bachelor of Landscape Architecture from the University of Kansas.

2. My design associate of over 20 years, Mark Thawley, has a Masters of Landscape Architecture from the University of Arizona and is also a member of the American Society of Landscape Architects. Mr Thawley has a vast array of experience in golf course design across the world (including Europe, South America, Africa, Asia, the Middle East and the UK).

3. With an estimated 45,000 golf courses in the world, it is an incredible achievement for a golf course architect to have a course included in the "World Top 100". While there are several independent golf course rankings, almost all include four of KPGCD's golf courses among their top 100 (being South Cape Owners Club in South Korea, California Golf Club in San Francisco, Kingsbarns Golf Links in Scotland and Yas Links in Abu Dhabi). These top courses have been designed on natural terrain, as well as challenging sites.

4. The business of golf course design is both an art, and a science. Nature provides infinite variety for golf landscapes around the world. In contrast to many other sports that essentially play on a standardized field or court, no two golf courses are the same. As a result, golfers will travel the world to experience a great designed course that blends beautifully into the natural landscape.

5. In this regard, each golf course designed by KPGCD is unique. This stems from the belief that golf courses should have their own character and personality derived from the existing natural site features, location and history. Where natural golf features do not exist, KPGCD has shown an unparalleled ability to create natural appearing landforms for traditional world-class golf experiences. By working with the existing landforms, or where necessary, creating new landforms that appear to have been formed by centuries of nature's influence, KPGCD has delivered spectacular results around the world. Each course is customized in architectural style and reflective of its regional landscape setting.

6. The Muriwai Downs property (**property**) is certainly in keeping with New Zealand's reputation for beautiful, natural landscapes. The property has many distinct features and characteristics (discussed further below). For example, many of the gullies contain magnificent stands of native flora; the glimpse of the Tasman Sea anchors a sense of coastal proximity; the wetlands, while currently somewhat degraded, present an extraordinary opportunity for regeneration; and the

streams and small lake round out the character of the site. Cumulatively these are the types of natural features which provide this site with the potential to become a golf course of international interest and standing. Simply stated, the abundance of natural features is an important part of what makes the golf course interesting and unique, providing a design that is significantly different from other New Zealand courses.

Experience, expertise and design philosophy

7. KPGCD is a full-service international golf course design firm located in Granite Bay, California which was established in 1997. It provides world-class golf course design, golf course construction bid documents, golf course feasibility studies, field design, construction shaping specialist services, as well as renovation and historical restoration.

8. Mark Thawley and I have a combined experience of over 60 years designing golf courses.

9. KPGCD is proud of its ability to integrate golf into such diverse terrains as the deserts of the Middle East and Northern Africa, the rugged hill country of the Czech Republic and South Korea and the links land of Scotland in such a way that the “hand of man” is indiscernible from the work of nature.

10. Taking two "Top 100" courses as examples: at Kingsbarns Golf Links, near St. Andrews, Scotland, KPGCD transformed flat farm fields into the highest ranked links course[1] to be built in the modern era. Only one year after opening in 2000, Kingsbarns was launched into the World Top 50 ranking by Golf Magazine. Kingsbarns also received Golf Digest’s Best New International Course Award and has served as host of the Dunhill Links Championship since 2001. In a completely different setting, KPGCD designed and created the Yas Links course in Abu Dhabi, achieving what many thought to be impossible – a World Top 100 links course from a barren desert site. Yas Links is already ranked number 1 in the Middle East, in the Top 25 among courses outside the United States by Golf Digest, and number 70 in the World by Golf World Magazine.

11. KPGCD's mantra is simple –our courses will have their own character and personality derived from the site’s existing natural features as well as its location and history. KPGCD has delivered spectacular courses in many different architectural styles, each reflecting the particular local setting. Each course pays homage to the historic landscape of the area.

12. This mantra has been applied to the design of the Muriwai golf course and will be carried through to the construction phase. It has always been KPGCD's determination, from a design perspective, to imbed golf into the terrain rather than impose golf upon it.

13. KPGCD's experience, knowledge and expertise extends beyond golf course design to other aspects of the golf course experience including associated buildings and facilities.

14. KPGCD lead the industry in sustainable golf course design, with the Golf Environmental Organisation (**GEO**) recognising our courses in Scotland, Sicily and Abu Dhabi as examples of excellence in sustainability. KPGCD has experience in water quality and conservation, efficiency in turfgrass management, wildlife habitat creation, recreational greenspace creation, biodiversity of native plant species and design that reflects the culture of the region.

[1] Links courses date back to the very beginnings of golf, where land was used that “linked” the land to the sea. True links courses are built on a sandy base on or very near the coast.

What the Golf Environmental Organization is saying about Yas Links, Abu Dhabi, United Arab Emirates:

"A sustainable approach to the creation of new golfing landscapes in the developing EMEA region. Located on Yas Island, an existing barren desert site with no vegetation or wildlife, the project was conceived from the outset to utilise reclaimed water for irrigation, resulting in the decision to limit the maintained turf area to 39 hectares within a total site area of 93 hectares, and to use Paspalum as the principal turfgrass species. There will be minimal use of pesticides, and a long term aim to enable a wholly-organic management regime. An existing mangrove and natural tidal area was preserved adjacent to the site, and a bird sanctuary was introduced and expanded."

What the Golf Environmental Organization is saying about Verdura Golf and Spa Resort, Sicily, Italy:

"The masterplan at Verdura is notable for its use of prime sea-front land for two 18-hole courses, complemented by a more compact resort development. This innovative land use balance is supported by a commitment to enhance biodiversity by establishing true native Sicilian plant species throughout the site, which was formerly dominated by a monoculture of irrigated fruit trees on maintained bare soil. 25% of the site is devoted to environmentally sensitive areas, and over 40 different species of native shrubs, trees, and grasses have been established. 14 Hectares of transplanted Olive and Orange orchards have been retained to reflect the local history of agriculture, and the existing historically

15. KPGCD are also proponents of creating greater biodiversity that promotes and encourages a park like atmosphere. Our vision is to create a system of recreational corridors that connect throughout the golf course and the entire development. Golf provides an exciting opportunity for golfers to immerse themselves in the natural environment and expose them to different landscapes and ecological features.

Golf course design

16. To design a golf course routing is somewhat like solving a Rubik's Cube – the adjustment of one piece of the puzzle produces knock on effects for all that follows and precedes. Consideration needs to be given to how a course "hangs together", meaning that each hole should continue telling a story that builds on the hole before yet seemingly effortlessly links to the next hole. The walk from the current hole's green should flow into the next hole's tee. These details may seem insignificant, but to golfers seeking out the best experiences in the world, they are what can separate an average, good, and great golf course. A change to the location of one green can mean that the next tee must also move, which can have a continued impact all the way to the final hole. At the

site, we dealt with not only the challenging topography, but also the wetlands, significant ecological areas, and outstanding natural features, making the design here more like solving a Rubik's Cube that is fighting back.

17. The flow of golf around the site (the routing of the course) becomes the imperative in achieving the optimal outcome. Balancing challenge with playability - i.e ensuring the holes rotate around the property in a manner that makes the journey itself intriguing while achieving the practical outcomes necessary - is absolutely critical in the process. When the site has such elevation change and dramatic landform as at the property, cracking the "code" becomes even more important.

18. While engaging with the natural environment is an extremely important aspect of great golf course design, one of the key design elements is allowing plenty of room for the player to be able to enjoy the proximity and visual impact of natural features while avoiding entering such features. So you will note with the design of the Muriwai golf course, where wetlands and native bush flank golf holes, there is always ample room to the opposite flank to avoid these golf hazards. This strategy in design has the benefit of amplifying the experience of place while not intruding upon it.

19. At this point it is worth noting the psychology of golf design in relation to the placement of hazards. Statistically the majority of "misses" are to the right and short of target (so when there is trouble in this area we generally provide extra room on the left). By providing considerable margins away from trouble, these areas act like golf ball magnets, as golfers are drawn to safety and away from danger.

20. It is perhaps worth noting here that there are numerous elements that are generally accepted as good design principles that we attempt to balance within the physical constraints of any given location to develop a world class golf course. For example; avoiding a series of holes that play in the same direction; avoiding a series of holes that play back and forth in opposite directions; balancing the challenge of each side of the course along with a balance of short (par 3's) and long (par 5's) holes; having these holes especially play in differing directions (so the effects of wind and sunlight vary); achieving returning nines (where the course returns to the clubhouse halfway through the round); generally being able to see the surface of the green on approach; avoiding a starting hole facing east (into the rising sun) and a finishing hole facing west (into the sunset); not overly favouring any one particular shot-shape etc. There are tomes dedicated to these areas, but the examples above give a sense of the intricacies involved in the design process.

21. Seldom does a site enable all of the above boxes to be ticked, and indeed part of the charm of the game is that it is not totally formulaic. However, unlocking the full potential of a site involves achieving the optimal routing and design the location provides. The nature of the site dictates playing many of the holes along the valley (largely east/west), necessitating more subtle changes of direction, and demanding every opportunity to play more north/south is grasped.

Criteria for design and key objectives

22. As one of the premier golf course design companies in the world we are unashamedly protective of our reputation. KPGCD, therefore, only accept commissions for projects we feel will be both brand enhancing for us and will deliver on the expectations of our client/s.

23. We also recognise the increasing international reputation of New Zealand as a golf destination with the relatively recent addition of courses such as Tara Iti, Cape Kidnappers, Kauri Cliffs and the

Queenstown trio (Jack's Point, The Hills, and Millbrook). To design and construct anything at the property that does not, at a minimum, live up to the bar set by these facilities would be a disservice to all involved.

24. We were, therefore, pleased with our brief to design a course that would meet all of the generally held criteria for world-class golf. The course must meet the standards articulated earlier in this report and the associated facilities must likewise be commensurate with the tag "world class" (see paragraph 28 below).

25. It was refreshing indeed to have a very simple brief from our client – to design the best golf course that his 500+ hectare property could accommodate. The constraints placed on achieving that outcome related to the treatment of and engagement with the natural features of the site rather than any preconceived ideas or requirements for the course.

26. KPGCD has been pleased to actively collaborate on the associated golf academy and sports facilities, and other non-golf areas of the site. It should be noted that the course and facility will meet the criteria established by Tourism New Zealand to constitute "Marquee" status. A course with Marque status is "of high quality, is aspirational with inherent international interest, has history and/or a particular identity and is accessible for visitor play".

Design constraints

27. Many of the obvious "constraints" of the site are also "opportunities". These include the significant ecological features and vegetation, Lake Okaihau, streams, wetlands and the water sources that feed the wetlands, and archaeological features.

28. Our objective at the outset was to utilise as many of the natural features of the site as possible, as these features add a unique identity to the course and can provide a spectacular visual amenity that creates a lasting memory for everyone who visits. We also needed to achieve this while working within the generally accepted parameters of international golf course design (a modern course of international standing would be expected to stretch to in excess of 6500m from the championship tees; contain a balance of par 3's, 4's and 5's; unless clearly impossible have returning loops of nine holes; balance hazard placements to not overly advantage one particular shot shape; engage with the dominant natural features; rotate in such a way as to present constant adjustments in direction and change elevation in a manner that is relatively benign for foot traffic).

29. KPGCD worked with a multi-disciplinary team of experts to understand where the constraints at the site were and what they meant for the golf design process. In that sense, the design process was very iterative, with the starting point being the natural features and constraints of the site. The design team understood the need to avoid wetlands, contain cuts to the depths identified by Williamsons Water & Land Advisory (Water Effects Summary Report) and minimise the amount of vegetation removal, working with the natural landforms and features.

30. As is normal with teasing out the course routing, we prepared multiple rotations of holes - with a final count near 180 different golf holes on the site - in order to finally settle on the absolute best 18 holes KPGCD could produce. The intricacies of integrating golf while respecting the margins of wetlands (incidentally the most restrictive we have come across anywhere in the world), have made the process at the property one of the most complex we have faced. A number of design changes occurred as a result of expert advice regarding potential environmental effects of the golf course

design, particularly in respect of wetlands, other ecological features and arboricultural matters. This process will continue further into the detailed design stage.

Design process for Muriwai Downs Property

31. We were contacted in mid-2020, at the height of the global pandemic, to submit a concept for a "destination" golf course in New Zealand. The opportunity for our first design in the country was exciting but came at a time when our normal routine of moving around the world was all but impossible.

32. While the normal process would have been to visit and assess the site prior to contemplating any routing of golf, the realities of a Covid world presented the need for a modified approach. KPGCD worked closely with GSG and used a combination of contour mapping, Virtual View technology, drone footage, imagery and video to enable us to produce a draft concept plan. This approach was a first for both KPGCD and GSG, which are both used to working on global projects that require an immediate presence onsite. We expected challenges and changes to the design once I was able to gain a border exemption and a spot in MIQ in order to attend the site.

33. Even before I was able to visit the site, it was fairly obvious that to fulfil the brief of designing a course that would be of international significance and stature it would necessitate utilising the north-western corner of the property.

34. The combination of the wetland system and stunning native flora presented both opportunities and dilemmas. The deep gullies are generally populated with significant stands of native bush, while Pohutukawa, Manuka and Kanuka appear along banks and, occasionally, as lone entities mid-paddock. The task was, therefore, to integrate these natural features into the design, allowing golfers to engage with and appreciate the natural values of the site while also presenting the opportunity to nurture and regenerate these areas. Indeed, it is worth noting that perhaps the most critical element that makes golf distinct from other sports is its utilisation of natural features as the primary influences on the game. These are the features that dominate the north-western corner of the property.

35. During the early stages of the design process and before visiting the site, we had early engagement with several experts, notably the project's ecology and hydrology teams. These experts helped to inform us about the constraints on the site and provided insight relevant to their specific field. With that said, no matter how good our intentions, such a dramatic and complex site demands feet on the ground to fully explore the possibilities.

36. I initially planned to be in New Zealand to advance the golf course design process between March 8 and April 8 2021 (including my stay in MIQ). Coincidentally, my time in MIQ allowed me to immerse myself in the project while in the same time zone as GSG and the other experts and gain additional insight that helped to prepare me for my first day on site.

37. Upon my release from MIQ, I spent the next several days walking around the property and familiarising myself with the features, constraints, and opportunities. Our itinerary was full from morning to evening with meetings with the project owner, GSG, our ecologist, hydrologist, irrigation expert, RMA planners, legal team, landscape architects, archaeologist, farm manager, and agronomist. I also took the time to meet with the local Muriwai Golf Club, experience the wider

Auckland community, and visit some of New Zealand's best golf courses (Tara Iti, Cape Kidnappers, The Hills, Millbrook, and Royal Auckland).

38. I was also very fortunate to have my lead shaper (essentially an artist on a bulldozer) from our project at Kingsbarns, Jason Garten, living in Taupo. Jason is one of the best shapers in the business, a critical component of any project such as this, and he was able to join me on several occasions as we walked the site and discussed the tremendous possibilities. Even with a schedule that often had me on site and in meetings during the day, and drawing well past midnight, the challenges of the site were too significant to leave as planned. Accordingly, I made the decision to extend my trip by an extra week to ensure the optimal routing was achieved.

39. Once on site, the benefits of the preparatory work done were immediately apparent. The Muriwai team had already engaged a number of consultant experts in critical areas enabling the key constraints and opportunities to be quickly established. Having worked so extensively internationally in different jurisdictions, with often quite different emphasis on degrees of importance, it was vital to have the local requirements and expectations so effectively communicated.

40. Fortunately, our design principles (revolving around integrating golf into, rather than imposing upon, the natural terrain and utilising and enhancing natural features) sit well with the local determination to respect elements such as water quality, native flora and the interaction of each.

41. Throughout the design process, I am always looking at how we can progress to the build stage with the least disruption possible. We worked with Williamson Water and Land to understand the maximum cut depths around the site, and took a considered approach to earthworks, achieving a cut / fill balance in our design. This means no material will be removed from the site, and the only imported materials will be of a speciality nature (sand, gravel, etc.). As an added layer, the property's width from east to west made the cut / fill balance more of a challenge, as we wanted to minimise truck movements within the site. To achieve this, we balanced our earthworks in "zones" on the site, reducing the need to move fill long distances on the property.

42. It also quickly became apparent that the preliminary work done (that identified the north-western part of the property as the most appropriate) was spot on. To meet the brief of delivering a golf facility of international standing that would attract acclaim from a discerning golf traveller, the features in this section of the property would be of paramount importance.

43. Since visiting New Zealand, we have been engaged in a number of discussions with experts and the project team and have continued to refine the design of the golf course at the site in response to feedback from the experts and additional design requirements. For example, a number of the holes have been redesigned to respond to site visits and feedback from the project's ecologist and arborist. The redesign process has involved changes to tee locations, fairways and connections between the holes (such as bridges).

44. There are some instances where, despite careful consideration of options and alternatives, the design has not able to avoid natural features on the Property. For example, there is a small area of an intermittent stream which requires filling for the 1st hole. While we considered whether the filling could be avoided, the alternative designs would have all resulted in the removal of mature Pohutukawa trees on the next rise of this hole. It was always a priority for us to mould the fairway

of the 1st hole to retain these mature, significant and beautiful tree specimens. We have ensured the amount of infilling required is as small as possible. There is also another area of stream, in the vicinity of the 14th and 16th fairways, which needs to be culverted. A number of alternative designs and alignments were considered to avoid culverting the stream. However, the alternatives resulted in a wetland to the east of the fairways needing to be removed in its entirety, which I understand is a prohibited activity.

Golf course design for the Muriwai Downs Property

45. The course route has been designed to take golfers on a journey through the property on a park-like experience, capturing views of the most appealing natural features the site has to offer. The clubhouse has been positioned to take advantage of panoramic views across the property and beyond, but also cleverly hidden from the surrounding roads and residential properties. The Masterplan for the golf course and wider project is attached as **Appendix A** to this state.

46. The first nine holes are situated to the west-side of the property where the terrain is more challenging, but also more spectacular. After immediately enjoying distant ocean views on the 1st hole, golfers are quickly introduced to the beautiful natural lake on the 2nd hole before heading north along the property and into the low sandy area of the site to hole 6 where golfers will enjoy long views up the valley towards the waterfalls. The 7th and 8th holes transition to avoid wetlands, playing across dramatic ravines. As with most contemporary designs, the 9th hole returns to the clubhouse.

47. The landforms on the back 9 holes are slightly less dramatic, but equally beautiful. The course winds down from the clubhouse playing near the large waterfall and creek and then out to the east portion of the course. The 16th hole heads back west to a green that will sit close to the existing shearing shed much like the nearby 11th green. The preserved building adds character to the course, respects the farming history of the site and provides a wonderful gathering area during the round. The 18th hole finishes uphill playing around another dramatic ravine.

48. In summary, we have routed the course much like we believe someone would naturally walk the site to experience all its best features. While the course offers views and connections to the beautiful wetland vegetation and unique tree species on site, it does not intrude on these sensitive features. The route minimizes the number of trees impacted, with bridges positioned to allow for easy walking and to ensure the preservation of sensitive vegetation and specimen trees. From a grading perspective, the natural contours have been used in a way that requires minimal earthwork. Any earthwork that is proposed will be implemented to reflect the natural landforms and blend into the existing site topography. In golf design, this course will be considered a very “light on the land” approach, with holes draped over the natural ground.

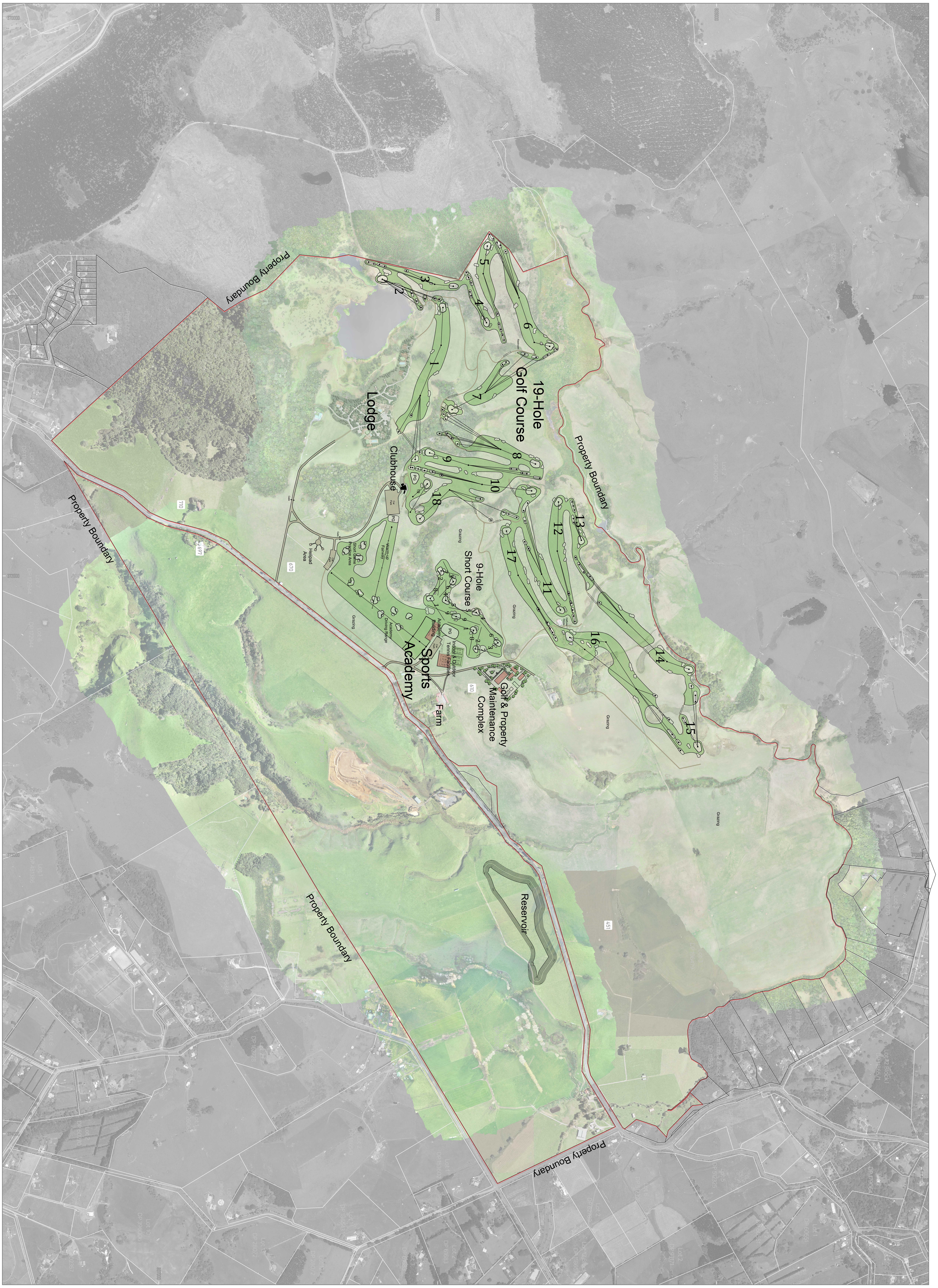
49. The course design is informed by, and sensitive to, the constraints on the site and focuses on the opportunities presented by those features for the optimal golf course experience. Care has been taken in designing the course to incorporate natural features of the site as hazards, while ensuring there is ample space provided for golfers to avoid these hazards and, therefore, minimise opportunities for golfers to engage with the hazards. The design approach and factors which influence it are discussed further above.

50. KPGCD has identified a design solution for the site that not only achieves the key design aspects required of a world class golf course, but also one that respects the design constraints.

Concluding comments

51. As registered Landscape Architects with over 60 years of combined experience, Mark Thawley and I believe that the course designed at the property has reached a perfect balance between achieving a world-class golf experience, while also leaving important environmentally sensitive areas untouched and preserved. More than any other course in the country, I believe the opportunity exists for the property to truly showcase the natural extraordinary scenery for which New Zealand is famous, while delivering a golf experience that will attract the high value golf tourist.

APPENDIX A



Muriwai Downs

Muriwai, New Zealand

Site Plan

KYLE PHILLIPS
GOLF COURSE DESIGN
GRANITE BAY, CALIFORNIA
www.kylephillips.com

0m 100m 200m 400m

Sept. 30, 2021
Revision Date:
1.
2.
3.
4.
5.

N

SHEET

SP