LAND
Landscape Architects

TREBLE CONE SKI AREA

LANDSCAPE AND VISUAL ASSESSMENT

June 2020

Lucas and Dey • PO BOX 1356, Queenstown • T +64 3 4502130 • F +64 3 4413513

1.0 INTRODUCTION

The following is a landscape and visual assessment prepared for Cardrona Alpine Resort Treble Cone as part of a Concession Application to Department of Conservation (DOC) for the Treble Cone Ski Area (TCSA). TCSA has recently changed ownership triggering the requirement for a Concession Application.

This report should be read in conjunction with the Terrestrial Ecology Assessment prepared by Beale Consultants and dated June 2020. This report follows the *Guide to Preparing Your Environmental Impact Assessment for Concessions Applications* provided by DOC.

The following landscape assessment includes a methodology, a description of the surrounding landscape character and the site, a visual and landscape assessment, a discussion of the relevant matters in the guidelines referenced above and recommendations.

2.0 METHODOLOGY

A site visit was undertaken on 13 May 2020 in sunny, calm conditions with very little snow cover. The existing buildings and structures were observed in addition to vehicle tracks and construction of new snow making. Local topography, geomorphological features, animal and plant species were observed and noted in addition to views. A photographic record was made in addition to notes on prepared aerial maps. The access road and surrounding area was also observed.

A visual assessment from surrounding roads and public places was undertaken.

The following assessment was then prepared to assess the impact of the ski area on landscape values and visibility. The Guide to Preparing Your Environmental Impact Assessment for Concessions Applications has also been referred to.

3.0 DESCRIPTION OF THE SURROUNDING LANDSCAPE

The site is located at the northern end of the Harris Mountains in Western Otago. These mountains extend from the Wakatipu Basin in the south and increase in height to the north finishing at the Matukituki River. The mountains increase in height to the north from Coronet Peak 1651 asl and Mt Dewar 1310 asl in the south to Black Peak 2289 asl and Treble Cone 2058 asl in the north. Much of the Harris Mountains are protected by the Mahu Whenua Conservation Area. The Treble Cone ski area is located within the North Motatapu Conservation Area and the Motatapu Conservation area but not the Mahu Whenua. The site is located on the north east to south east facing slopes above the Motatapu River.

The dominant vegetative cover of the Harris Mountains is tussock grassland and Dracophyllum shrubland. The mountains have a high natural character and include nationally threatened bird and invertebrate species.

4.0 DESCRIPTION OF THE SITE

The site includes the area inside of the ski area boundaries and the access road corridor that commences at the valley bottom via the Wanaka Mt Aspiring Road. The ski area is the largest in the South Island with an area of 550 ha. It includes 4 areas from southwest to northeast as follows, Motatapu Basin with the Hollywood Bowl at the top and the centrally located Motatapu Chutes, Saddle Basin, Home Basin and the Matukituki Basin. It is noted that the Matukituki Basin is not included within the ski area boundary.

The topography of the ski area is complex and contains several basins, localised ridges, streams and ridgelines. Rock outcrops, bluffs and tors are prominent in the landscape with notable groups of tors located along the Saddle Ridge. The basin slopes undulate and funnel downwards carrying water to the more deeply incised gullies. Areas of scree, boulderfields, seepage wetlands and snowbanks with their associated flora and fauna communities are common throughout the ski area. The Beale report notes that the rock outcrops, boulderfields and bluffs found in the Home, Saddle and Motatapu Basins provide suitable breeding sites for both the New Zealand Eastern Falcon and the kea. Both these birds are nationally threatened species. Nationally threatened invertebrates have also been identified within the site.

A six seater chair lift operates from the base area in the Home Basin and a traverse from the top of this lift provides access to the Saddle Basin quad seat chair lift. This lift provides access into the Motatapu Basin for advanced skiers and snow boarders and requires a hike out at the bottom back to the Saddle chair. The learners' area is located adjacent to the base facilities with car parking nearby at an approximate elevation of 1260m asl.

The Home Basin express lift has a vertical drop of 700m. The ski area is popular with advanced skiers and snow boarders over the ski season from July through to September, the area is not operational over the summer months.

Snow making is currently located in the Home Basin only and has this autumn been extended along the Easy Rider return trail to the base area.

The access road to the base area car park is gravel and regularly maintained, a gravel store is located approximately half way up the 7km access road. The lower car park has a 235 car capacity and the upper car park has a 146 car capacity providing a total of 527 car parks. Overflow parking available at the top of the access road in a widened area known as the neck can accommodate a further 100-150 vehicles. A workshop is located at the southwest end of the lower car park.

Base building, lower car park and maintenance shed.

Tributaries of the north branch of the Motatapu Creek commence in the Motatapu Basin and the Saddle basin. The Motatapu tributaries flow down through the Motatapu chutes to the main tributary below that commences in the Saddle Basin and flows to the south of the Saddle Chair base station and into the Motatapu Basin. There is a formed cat track in winter above the main stream for skiers to follow back up to the Saddle Chair after coming down through the chutes. This area is steep and has a high natural character.

View of Saddle Basin including chairlift, rock bluffs, Motatapu north branch tributary and route of walk out from Motatapu Basin. Note ridge top cushionfield in the foreground.

The Saddle Basin also contains water funnels that terminate at a steeply incised gully to the northeast of the area, the most northern branch of the North Motatapu tributary, the top side of which forms a localised ridge that separates the Saddle Basin from the Home Basin.

A flat topped, scree covered ridge forms the top of the Motatapu Basin and the Saddle Basin. This ridge is punctuated by groups of large tors, vertical standing rock remnants that have formed by weathering of the softer surrounding rock and are left standing on smooth flat areas such as the ridge top.

View to Saddle Basin with tors on the ridge and steep sided gullies across the slope.

Return to the Home Basin from Saddle Basin is via a traverse from the top of the Saddle Chair to the top of the Express Chair under the ridge. From the Home Basin the other basins are largely not visible. This Basin is the largest and most open. It is confined to the north by a localised ridge that follows a west east direction. Tributaries to an unnamed stream flow down through the Home Basin and out to Cattle Flat at the bottom of the valley below terminating at the Motatapu River. The southern tributary is the largest and forms a gully to the south of the Express Chair. This basin is the most modified as it contains the main chairlift, the learners' area, the base area and the most piste runs which are groomed in winter. The Home Basin is defined to the north by the Matukituki Ridge.

Views from the Home Basin to the east are spectacular and include Lake Wanaka and the surrounding undulating landscape and river valley. Treble Cone is well known for these views. Different views are available from the Matukituki Basin as it has a north east aspect and the Matukituki Valley to the north is visible below and the mountains to the north and east.

A number of small structures are located throughout the area and are predominantly used by staff for the storage of equipment etc. The buildings are recessive in colour and have pitched roofs. Other structures include timber fences and signage. Several vehicle tracks across the area provide return access for skiers and boarders and skidoo in winter and maintenance vehicles in summer. Water reservoirs provide water for snow making. In addition to above ground infrastructure a network of services exists beneath ground also. Vehicle tracks have drainage channels cut across them that collect run off and drain into the natural water systems.

View of Home Basin including chairlift, lunch hut, reservoir, piste runs, vehicle access and top car park and base building bottom right.

The piste slopes of the ski area are groomed and have a dominant vegetative cover of short grasses. These slopes have been modified by earthworks and over sowing of exotic grasses and are smooth whilst the off piste areas have a more natural vegetation cover and topography.

The Beale Consultants ecology report dated June 2020 describes the existing vegetation cover on the site and also notes that the vegetation cover has been modified by pastoral farming and managed and accidental fires. The successive vegetation after such modification commonly includes false Spaniard (Celmisia lyalli) which the Beale Consultants report notes is;

… especially common in the Home Basin and forms extensive patches within the slim snow tussock grassland reflecting the influence of past burning practices. The effects of pastoral farming on the vegetation cover is less apparent in the North Motatapu catchment including the Saddle Basin.

The vegetation cover across the site comprises a snow tussock grassland and snow tussock Dracophyllum shrubland. Within this is a diverse range of habitats containing different plant communities that respond to the different geomorphology found across the ski area and include the following;

- Wetland seepage
- Fellfields, boulderfields and rock outcrops
- Cushion field
- Snowbank
- Scree

The dominant vegetation cover across the ski area is snow tussock with Chionochloa macra more common at higher elevation and Chionochloa rigida more common at lower altitude. The Beale report notes that the snow tussock grassland is in a good condition with percentage cover

at 70% - 80%. The shrubland occurs on exposed ridges and spurs and steeper south facing slopes and is dominated by Dracophyllum pronum. Dracopyllum shrublands are easily identifiable amongst the tussock as they are a darker brown colour and have a woody texture that does not move in the wind as the tussock grassland does.

Seepage areas are a type of wetland and are common across the site but particularly in the north Motatapu tributary and the Hollywood bowl. These areas occur where subsurface water comes to the surface providing a habitat for plants that prefer a damper soil including sedges and some cushion plants. Seepage areas including cushion bogs are classified as naturally uncommon ecosystems according to the Beale report. The seepage areas containing cushion bog species in the Motatapu Basin are unmodified and sensitive to change so any modification in these areas should be avoided.

Cushionfields can be found on exposed areas such as ridges where the soil depth is shallow. The ridge crest between Home Basin and Saddle Basin contains a cushion field and is easily identifiable by the low uneven texture formed by the low growing pattern of the cushion field plants. The Beale report notes that the cushionfields are in good condition and are unmodified beyond the ski trails.

The snowbank, boulderfield, rock outcrop and scree plant communities are subject to completion of a summer survey.

Exotic grasses are found in areas that have been modified to construct chairlifts, vehicle tracks and ski trails and in some areas have spread into the indigenous vegetation cover. These species include brown top, sweet vernal, white clover, sheeps sorrel and hawkweed. Exotic weeds such as Californian thistle, sheeps sorrel and hawkweed are common at lower altitude amongst the tussock grassland, particularly in areas modified for pastoral farming. There is potential for further spread of these weeds particularly into modified areas of bare soil as they are very invasive.

The vegetation cover becomes less indigenous as the ski area access road descends to the valley floor below. Indigenous grasses interspersed between the plants in the tussock grassland increase in number until the balance changes to tussock interspersed in pasture grasses. Exotic weeds also become more common at lower elevation. The exception is within the steep sided gully that continues down to Cattle Flat that contains patches of native Mountain Beech trees. A lone cabbage tree is growing adjacent to the lower access road.

Lower section of the access road including a cabbage tree

Deer are common across the higher slopes of the ski area and cattle can be seen grazing on the lower slopes and gathering on road corners. Evidence of hare is also widespread.

Overall, the Beale report ranked the ecological value of the site as very high apart from the Home Basin ski trails as they have been over sown with exotic grasses. Areas of ecological sensitivity identified include seepages, cushionfields, dracophyllum shrublands, boulderfields, fellfields, rocky outcrops and screes. This is due to the plants in these communities having low tolerance to change.

The landscape character follows a similar pattern to the ecological ranking where the least modified areas have a higher natural landscape value including the Motatapu Basin and the Matukituki Basin followed by Saddle Basin with the Home Basin being most modified and therefore having a lower natural landscape value. The important landscape attributes include the legible and diverse geomorphology including rocky outcrops, wetland areas, gullies, flat top ridges, and water funnels, the unique and high quality habitats that the geomorphology has created including wetland seepages and cushion fields and the rare cushion bogs, the habitats for rare indigenous birds and invertebrates, openness, naturalness and memorability.

Areas of landscape sensitivity include the rare ecological habitat areas and the most visible areas such as tops of ridges and prominent rocky outcrops.

Refer to Attachment 1, Topographic map showing wider landscape area and Attachment 2 including an aerial photograph showing the site.

5.0 THE SKI AREA OPERATION

The proposal includes the following existing structures;

- Two chairlifts - Home Basin Express and Saddle Basin Quad
- Learners magic carpet and ski slope
- Groomed ski slopes
- Vehicle access tracks
- Access road
- Base building
- Maintenance shed
- Saddle Hut
- Lunch hut
- Storage hut
- Snow making – Home Basin
- Signage
- Fences
- Water reservoir
- Containers for coffee sales – top of Home Basin Express

The ski area is used for skiing and snowboarding from late June / early July until September. This activity includes chairlift operation, café and hire of equipment, ticket sales and snow making. The snow making has been extended over autumn 2020 to include the lower piste of the Home Basin. At night snow grooming and snow making are operational and include lighting.

The area is not operational during the summer months apart from maintenance activities. Additional snow making was added to the lower Home Basin over autumn 2020.

There are no plans to add to the current operation.

6.0 ASSESSMENT OF EFFECTS

It is noted that this application does not include any proposed facilities but is for the ongoing operation of the existing facilities. This assessment is divided into landscape effects and visual effects. These two categories can have some cross over but the following NZILA definitions aid understanding of each as follows;

Landscape attributes comprise biophysical features, patterns and processes, sensory qualities and spiritual, cultural and social associations including both activities and meanings.

Landscape character is a distinctive combination of landscape attributes that give an area its identity.

Landscape value derives from the importance that people and communities, including Tangata Whenua, attach to particular landscapes and landscape attributes.

Visual effect is the visual change to a view experienced from a specific location and the impact of that on the quality of visual amenity

6.1 LANDSCAPE ASSESSMENT

The landscape character descriptions of the site and surrounding landscape context above include the landscape attributes of topography, geomorphology, ecology, vegetation and fauna that combine to make the natural landscape character of the ski area. Modifications to this character are also described.

The Department of Conservation Guide to Preparing your Environmental Impact Assessment (EIA) for Concessions Applications suggests that the following items are addressed;

Structures

This includes baches, hotels, campgrounds, huts and ski area modifications, telecommunication sites, pipelines and wharves.
Areas that have already been modified could be more acceptable for consideration for development than untouched areas.

The landscape character of the ski area has been modified by first pastoral farming and more recently by the ski area operation. The Home Basin is the most modified as it contains the base area including car parks, buildings, chairlift, snow making and learners area and has the most piste runs that have undergone earthworks to create level constant slopes. The Saddle Basin also contains a chairlift but not as many piste runs so is less modified than the Home Basin. The Motatapu Basin and the Matukituki Basin are least modified as they do not contain any chair lifts, snow making or piste slopes. They also contain very few fences and signage.

The Motatapu and Matukituki Basins therefore have a higher natural character than the Home Basin and the Saddle Basin. Landscapes with a high natural character are usually valued more highly than modified landscapes. The Home Basin and the Saddle Basin have a greater capacity to absorb appropriate development than the less modified Motatapu Basin and Matukituki Basin.

Design, Location and Colour System
The design/location and colour systems proposed for the project are relevant to an assessment of environmental effects.

The existing facilities are located on localised ridgelines in places but do not break the skyline. The base building facility is relatively large but sits well in the large scale landscape. Other structures are of a small scale within the landscape. The design colour and materials of the existing base building and huts are recessive in the landscape. The base building is constructed of timber with a natural finish and the huts are constructed of timber and painted to match the colours of the surrounding tussock vegetation. The structures are difficult to see or not visible from below in the valley, from Wanaka Mt Aspiring Road and from Wanaka.

Transport and access

Will access to the site, either by foot, road or by services result in:
Disturbance of any conservation values?
Result in any impact upon the areas landscape features?
Lead to any erosion or slippage?

The access road and other vehicle access within the ski area are maintained and water runoff is successfully managed by swales and pipes. The more sensitive landscape features and habitats such as wetland areas and rocky outcrops are not impacted by the access roads. It is important that any future vehicle access is located to avoid sensitive habitats, highly visual landscapes such as ridges and rocky outcrops and tors as these areas have high natural value and are sensitive to change.

Construction
Likely adverse effects during construction, eg dust, noise, traffic congestion, temporary accommodation, gear storage.
Long term adverse effects such as those resulting from removal of rock, soil or vegetation

It is important to avoid construction within sensitive landscape areas such as wetland areas Dracophyllum shrubland and cushionfield communities as these plant species have a limited ability to adapt to change. It is also important to avoid construction that would undermine or destroy rocky outcrops and the form of ridgelines as these are important and visible landscape features. Access roads should also avoid the disruption of open, visible slopes where possible.

The most visually prominent part of the development is the existing vehicle access road to the base area. Any future widening or modifications to the road should consider visibility and appropriate site restoration to cuts and batter slopes. The existing native beech trees growing in the steep gully adjacent to the access road should be maintained.

Site restoration
Please detail measures you propose to take to restore the site once the construction phase is complete.

Indigenous pastoral species and weed spread pose a threat to the existing indigenous plants as they are very invasive particularly in areas of disturbed ground where soil is exposed. To avoid weed establishment and further spread into the indigenous vegetation cover construction practice should be to remove and stockpile existing plants and then replace once construction is complete. A site restoration protocol has been included in the Beale report and represents best practice in ecological management in ski areas.

Landscape values

Damage to landforms
Impingement on the landscape i.e stands out as being non natural
Damage to geological features
Reduction of the natural character of wetlands, rivers and streams
Loss of open space

- *Any activity that has an impact on landscape values is likely to have other significant impacts on vegetation, wildlife or their habitat.*

The existing ski area operation is of a scale and design that has been successfully absorbed into the surrounding natural landscape. To ensure that activities do not impact on the natural landscape values such as rocky outcrops and natural water systems it is important to avoid these sensitive areas and the associated habitats such as the native bird habitats of the rock bluffs and cushion bogs located in seepage areas.

- *For the construction of any facility you are required to look at alternative locations outside the conservation area or the national park.*

Not applicable or practical at this time.

- *Can any existing buildings/structures be used?*

Existing buildings and structures within the ski area are continually being repurposed.

- *Examine alternative designs that will blend the facility into the landscape. Designs that have relief, as few levels as possible, that use natural materials and colours that harmonise with the environment will be preferred.*

The existing buildings and structures meet this objective.

- *Colour schemes should always have dark roofs and all colours should have low light reflectivity.*

The colour schemes of the existing buildings are successful in blending the buildings with the surrounding natural toned vegetative colours and rock. The colours are also appropriate in periods of snow cover as they do not strongly contrast and total snow cover over the ski area occurs for only a short period.

6.2 VISUAL ASSESSMENT

A visual assessment of the ski area has been undertaken from Wanaka Mt Aspiring Road and Wanaka township.

A photograph was taken using a DSLR camera with a 33mm lens and a focal length multiplier of 1.6 to give an equivalent lens of 52mm. The photograph location is included on an aerial map included as Attachment 3 and the visual assessment photograph included in Attachment 4.

The methodology of the assessment follows the New Zealand Institute of Landscape Architects (NZILA) best practice for landscape assessment and utilises the seven range effects ranking from the NZILA "Landscape Assessment and Sustainable Management" practice note. The seven range effects used are as follows;

- Extreme
- Very high
- High
- Moderate
- Low
- Very low
- Negligible

Photograph 1, Wanaka Mt Aspiring Road

This photograph is typical of the view from the road either side of the West Wanaka Road intersection, approximately 2km, when the ski area is visible and not obscured by topography or not visible due to viewing angle. The ski area road is visible, as are timber fences and the modified piste slope runs in the Home Basin. It is difficult to see the chairlift or any buildings as the viewing distance is over 5km to the access road as it zig zags up the slope face and almost 8km to the base area. The Saddle Basin and associated chairlift and modifications are not visible. I consider the visual effect from this location to have a rating of low. Refer to Attachment 3, Photograph Location Map, Attachment 4, Photograph 1 and Attachment 5 showing the area of visibility.

Closer to the ski area turn off and further along the Wanaka Aspiring Road, the ski area is not visible apart from small portions of the access road due to the viewing angle.

Lights from snow making and snow grooming could be possible from Wanaka Mt Aspiring Road but are considered to have a low visual effect ranking due to distance, low frequency of operation and low frequency of viewing.

Wanaka township

A line of sight is possible to Treble Cone from the northern end of the peninsular from approximately Aubrey Road to the northern extent of Beacon Point Road. These views are only possible between vegetation and houses however so are intermittent. More unobstructed views may be possible from some of the more recent residential developments located at a higher elevation below Sticky Forest. Views are over a distance of 18 – 19km however, so it is considered that the existing modifications and facilities including night lights have a low to negligible visual effect.

It is noted that the mapping software used in Attachment 5 cannot be applied to Wanaka township views as it has a limited radius of 10km.

Refer to Attachment 3, Photograph location map.

7.0 CONCLUSION

An application is being made by Cardrona Alpine Resort Treble Cone for a Concession Application to Department of Conservation (DOC) for the Treble Cone Ski Area (TCSA). This landscape and visual assessment have identified the landscape character and important landscape values of the ski area and assessed the impact of the existing ski area on landscape character and visibility. It is found that the area has a high natural character, with the highest natural character found outside of the Home Basin as this area is the most modified. The Home Basin is therefore having the most capacity to absorb development. Areas identified as sensitive due to having the least ability to absorb change are the habitats of wetlands, cushionfields and Dracophyllum shrublands. These areas should be avoided along with visually prominent ridgelines, rocky outcrops and visible broad open slopes.

The existing ski area operation successfully co exists with the high natural values of the landscape particularly outside of the Home Basin. To continue this success the following recommendations are made.

8.0 RECOMMENDATIONS

1. Any future modifications to the ski area should avoid the sensitive landscape features and habitats including the wetlands, Dracophyllum shrublands and cushionfields.

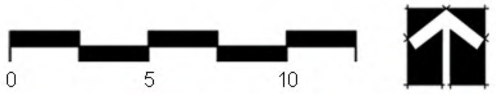
2. All construction work should be reinstated with the existing vegetation and no bare areas of soil should be left to avoid the spread of indigenous pasture grasses and weeds.

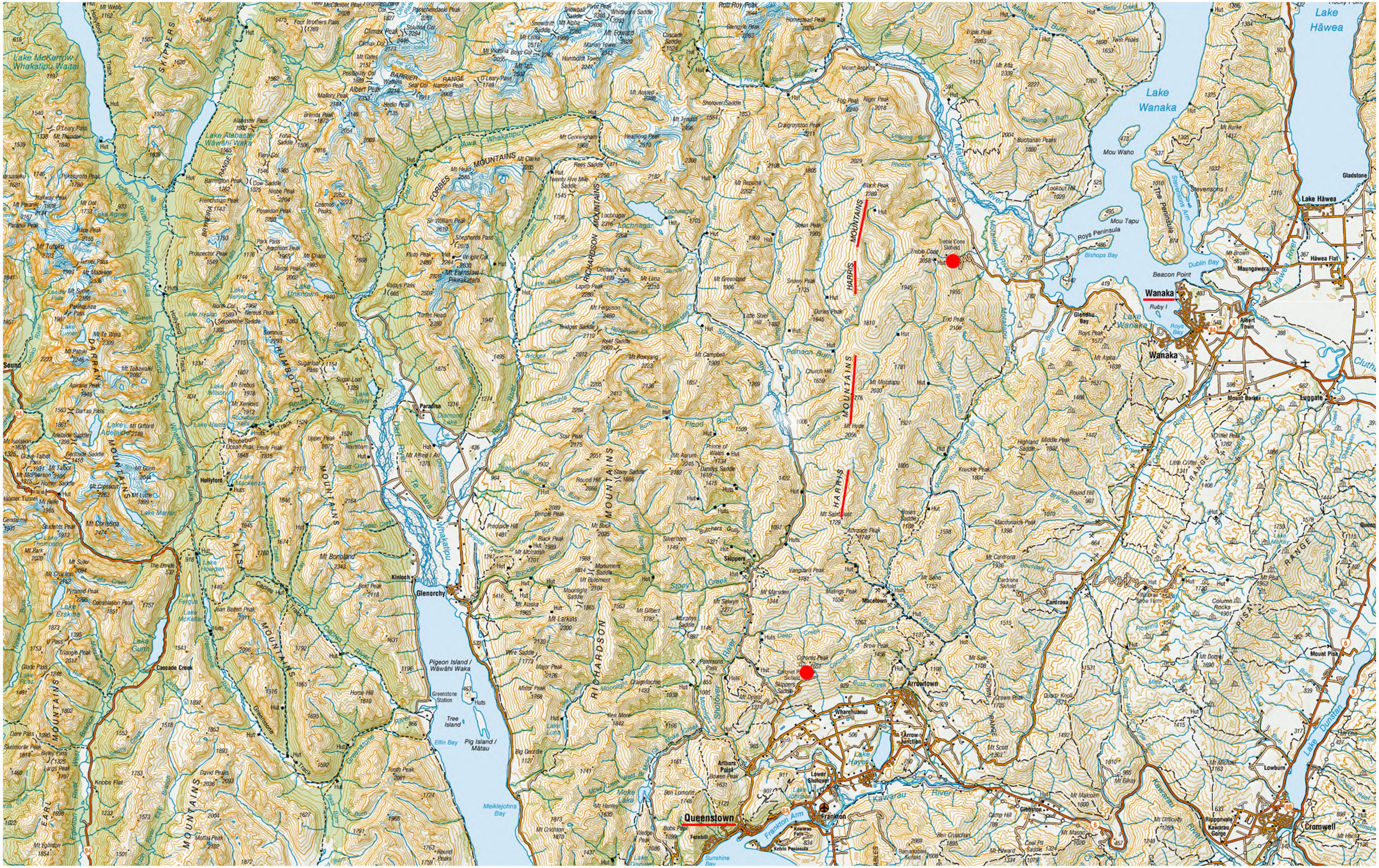
3. Any future buildings or structures should be of recessive colour and materials with low reflectivity.

4. Any future proposals for significant construction works should be assessed on a case by case basis.

ATTACHMENTS

Attachment 1.	Topographic map showing surrounding landscape
Attachment 2.	Aerial photograph showing site location
Attachment 3.	Visual assessment photograph location
Attachment 4.	Visual assessment Photograph 1
Attachment 5	Visual catchment





Topographic Map Showing Surrounding Landscape Context (info from NZ LINZ Topographic)

0 0.2 0.4 0.6 0.8 1km

Treble Cone Ski Area and Access Road (Property Boundaries - QLDC Webmaps)

Ski lift locations

Saddle Basin

Home Basin

Motatapu Chutes

Hollywood Bowl

Motatapu Basin

Aerial photograph showing site location (aerial imagery from QLDC webmaps)

Long range views (approx 18km - 19km) possible from this location

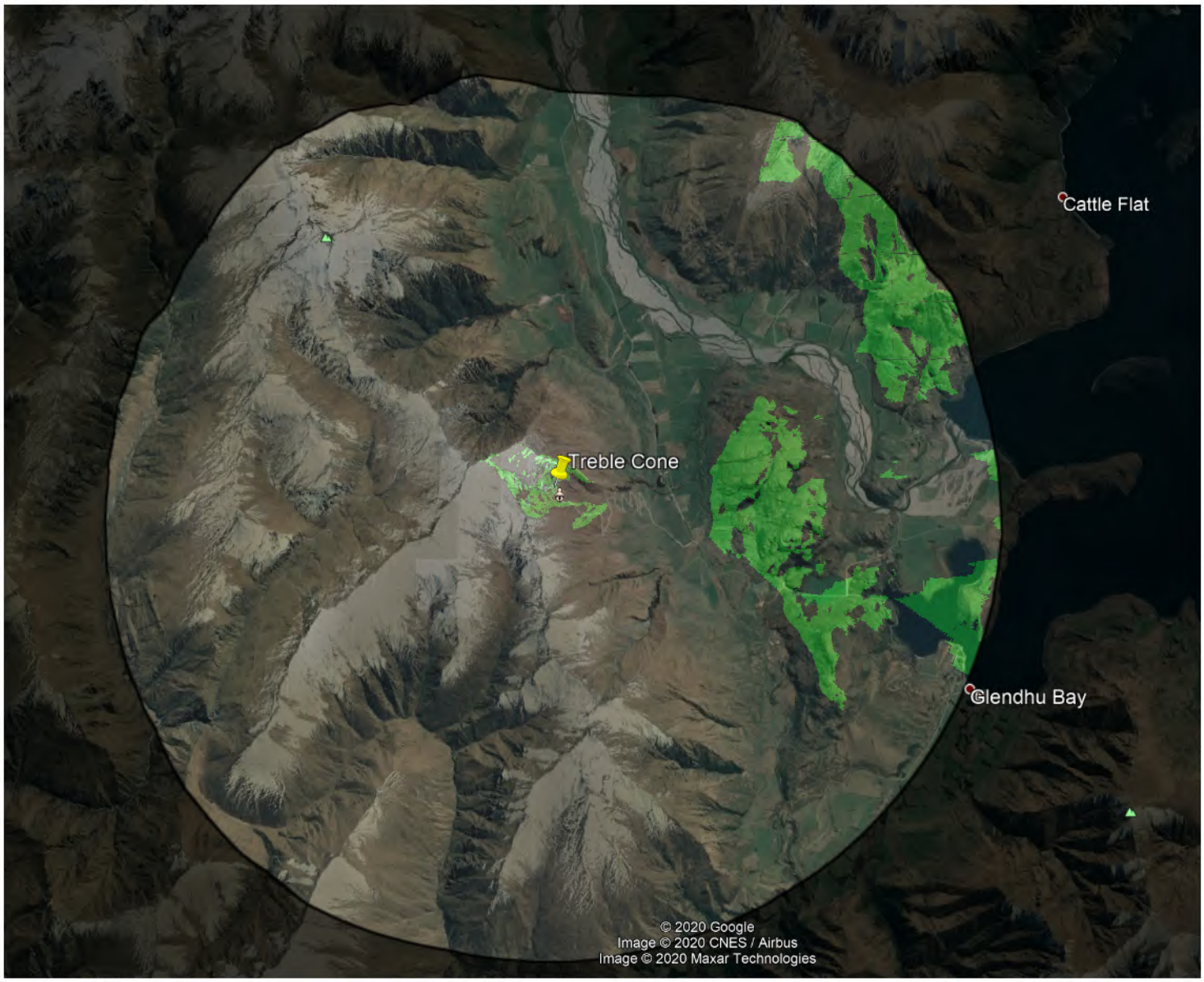
Not to scale

Visual Assessment photograph locations

Visual Assessment Photograph 1

View of site from Wanaka - Mount Aspiring Road

Note:
Photograph taken on 13.05.2020 with a 33mm lens and a 1.6x focal length multiplier to give equivalent of 52mm lens.
Horizontal field of view = $37^{0,}$
Single image width = 408mm
Image should be viewed at a reading distance of 600mm



10km Visual Catchment
Viewshed analysis from Google Earth, showing visibility of Treble Cone Ski Area Base Building