Hereweka
Harbour Cone

Conservation Plan
2020

Peter Petchey & Jill Hamel

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Otago Peninsula

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Acknowledgements

This conservation plan was commissioned by the Hereweka Harbour Cone Trust and funded by the Dunedin City Council Heritage Fund. Brendon Cross, who leases the farming rights for the property allowed access to all of the farm (well away from the public walking tracks). The University of Otago Anthropology Society assisted with recording, clearing and excavation work at Larnach's, Stewart's, Allan's and Roger's farmsteads. Carl Murray and Stuart Griffiths have been working on some of the stone structures, and have provided condition information on these.

1 Introduction

The Herewaka Harbour Cone property is situated on the Otago Peninsula (Figure 1), and consists of 324 hectares of rolling to steep hillcountry that was purchased by the Dunedin City Council in 2008 to protect the heritage, natural and recreational values of the area. The block is managed by the Hereweka Harbour Cone Trust (HHCT), and the land is grazed by a local farmer, Brendon Cross.

Figure 1
The location of the Hereweka Harbour Cone Block on the Otago Peninsula (image from Google Earth, with annotations).

The Hereweka/Harbour Cone Management Plan (2012) was put together by a steering committee of local people and Council staff, and this document calls for conservation plans for the historic features and sites in the Hereweka Harbour Cone property. An archaeological assessment of the area was carried out by Angela Middleton (Middleton 2008), and this provided the basic overview of the historic sites on the property: there are currently 49 recorded archaeological sites within the property boundaries, which Middleton (2008: 12) observed fall into three main categories: farmsteads, drystrone walls and roads. Other additional features include the lower of the three limekilns, other commercial premises (such as the Sandymount Post Office site) and split and drilled fenceposts (often associated with the stone walls). Stands of macrocarpas and windbreak trees are integral parts of farmstead sites, and have also been planted along roadlines in places.

Many of the recorded historical features are reasonably robust (such as benched tracks, stone walls and large macrocarpas), and while all such features will require suitable management and maintenance, this can be prioritised based on an assessment of both significance and vulnerability. On this basis it is the four wooden structures/complexes that require the most urgent consideration and intervention: Roger's, Larnach's, Stewarts and Riddell's farmsteads. It is clear that it will not be possible to save all of the structures within these sites, but it is essential that decisions are made quickly and those that can be practically saved are attended to before they deteriorate further. As part of the current conservation plan preparation process each of these sites has been inspected and assessed, but some urgent stabilisation work has been carried out prior to the conservation plan completion.

As Middleton (2008: 5) has observed, no prehistoric Maori sites archaeological sites have been recorded within the Harbour Cone property boundaries. Therefore, while this conservation plan recognises the need to be aware that such sites may exist (and an accidental discovery protocol should be developed for site works), it does not need to address the management of any specific prehistoric sites.

This Conservation Plan has been produce in tandem with a written historical account of the farmsteads and the occupants in the Hereweka Harbour Cone Block by Jill Hamel. It has been created as an appendix to this plan, but will also stand alone as a historic resource for the Block.

Scope

This conservation plan has five broad objectives:

- Identify and describe the surviving heritage fabric relating to human settlement on the Harbour Cone block.

- Assess the significance of each element of this heritage fabric, based on its own intrinsic values and its contribution to the overall heritage landscape.

- Develop conservation and management policies for the heritage sites, based on current international guidelines. These policies need to take account of both cultural heritage and natural heritage values.

- Develop a set of recommendations for the future management of each heritage place/site, based on the findings of the three preceding objectives. These recommendations can then be used to produce specific works plans for each place/site (although this level of detail is outside the scope of the current plan).

Management, Ownership & Legal Status

Management of the Hereweka Harbour Cone property is guided by the 2012 Hereweka/Harbour Cone Management Plan, prepared for the Dunedin City Council by Rhys Millar (Forest Environments Ltd), with assistance from Jackie Fanning (L&R New Zealand Ltd), and input from a number of others for specific issues.

The Hereweka Harbour Cone block is owned by the Dunedin City Council, and is managed by the Hereweka Harbour Cone Trust. The grazing rights over the property are leased to local farmer Brendon Cross, although some areas have been excluded for the purposes of ecological restoration.

The Hereweka/Harbour Cone property, at 1299 Highcliff Road, has the following legal description:

> Certificate of Titles 268/197, 124/180, 124/181, 156/197, 268/188, 268/194, 268/194, 268/195, 268/196, 44/78, 170/139, 14B/1180.

The vision for the Hereweka/Harbour Cone property is:

> ***To maintain the working landscape and enhance landscape, ecological, recreation, cultural and heritage values of the Hereweka/Harbour Cone property.***

The vision statement recognises the significant values of the property and provides a direction and framework for the management of the Hereweka/ Harbour Cone property Management Plan, informing the development of the aims, objectives and policies. This Conservation Plan addresses the heritage aspects of this vision, but also considers the implication of other sets of values on heritage management.

There is open public access to a network of walking/moutainbiking/horse riding tracks on the property, although these tracks are closed for lambing in September-October each year.

The individual farmstead and other archaeological sites have been recorded on the New Zealand Archaeological Association's Site Recording Scheme (www.archsite.org.nz) (see Table 1 below), and the site record numbers are used in this Conservation Plan as identifiers for each site.

Landscape

The 324 hectare Hereweka/Harbour Cone property is located in a central position on the Otago Peninsula and straddles the main peninsula ridgeline behind Broad Bay and Portobello. It includes the summit of Peggys Hill, the second highest point on the Peninsula, and Harbour Cone, the most distinctive hill form in the area. The majority of the property falls within two catchments, Smiths Creek on the harbour side and Stewarts Creek on the Hoopers Inlet side.

Figure 2
View across the Hereweka Harbour Cone block from the site of William Larnach's farmstead.

The primary access and public viewing corridor through the site is Highcliff Road but the property also abuts Camp Road, Sandymount Road and Bacon Street. The property wraps around three sides of Larnach Castle and is adjacent to the Otago Peninsula Trust property on Sandymount Road containing the historic lime kilns.

In common with the rest of the Otago Peninsula, the property is mainly composed of volcanic rocks of the Dunedin volcanic group and the high points of Peggys Hill and Harbour Cone consist of hard basaltic lava flows. Much of the property is underlain by volcanic ash and rubble that weathers readily to clay rich materials. This clayey rubble, together with the loess (wind-blown silt), which also mantles the Peninsula, is responsible for widespread landsliding. There is a small area of sedimentary rock, including limestone, exposed at the southern end of the site near the historic lime kilns. A fault scarp is visible as the eastern face of Peggys Hill. This geology has given rise to steep, rugged topography with plenty of evidence of unstable slopes, slips and slumps.

The property would once have been clothed in native forest but has been cleared for farming, and in some places hardwood stumps and logs remain from the forest clearance. There is now little native forest left and what remains is almost entirely regrowth. Significant patches of bush, however, are present, including six areas identified as having the potential to be included as Areas of Significant Conservation Value in the Dunedin City District Plan.

Grazed pasture is now the dominant vegetation cover, reflecting a history of first dairy farming but now largely sheep farming. There is some exotic scrub but in general the property has been well managed and is relatively free of noxious weed species such as gorse and broom.

One of the most striking features of the site is the evidence of more densely settled historic European occupation. This is in the form of derelict houses, drystone walls, tracks and shelter plantings (mainly macrocarpa). It is the management of these features that this Conservation plan addresses.

Commission Details & Conservation Plan Preparation

This conservation plan was commissioned by the Hereweka Harbour Cone Trust. The layout of this conservation plan follows current New Zealand Department of Conservation guidelines, and is also informed by J.S. Kerr's latest conservation plan guidelines (Kerr 2013). The most relevant cultural heritage management guidelines are the ICOMOS New Zealand Charter for the Conservation of Places of Cultural Heritage Value (2010), which is reproduced here in the appendices.

The archaeological and physical descriptions in this plan are based on visits during 2019 and 2020 to all of the recorded sites by the plan authors. This site visit programme was based on the recording work done for the archaeological assessment by Angela Middleton (Middleton 2008), and all of her records were revised and updated, and several previously unrecorded archaeological sites were added. Detailed mapping of farmstead sites has been carried out in the past by archaeology honours students Kirsa Webb (Webb 2009) and Anna Gosling (Gosling 2009), and several additional sites were mapped during the conservation plan preparation.

Additional input has been received from Carl Murray and Stuart Griffiths regarding the stone walls and ruins, and the University of Otago Anthropology Society has assisted in mapping and clearing several sites (Kelly 2017).

2 Heritage Description

Chronology

Before 1831	Extensive use of the Otago Peninsula by Waitaha, Kati Mamoe and Kai Tahu prior to the arrival of Europeans, continuing to the present day at Otakou Marae.
1831	First permanent European settlement at the whalers' base at Weller's Rock.
1844	Otago Association purchases the 144,600 acre Otago Block with the intention of establishing a Wakefield class settlement.
1863	Harbour Cone area surveyed and individual properties defined.
1864	Walter Riddell is first to take up property around Harbour Cone.
1865	Walter Riddell helps James McDonald erect first Sandymount lime kiln.
1868-1869	Highcliff Road formed through block.
1872	William Larnach purchased three sections.
1872	Sandymount School established.
1877	William Leslie established co-operative dairy factory on the slopes of Harbour Cone.
1881	Bush fire destroys Harbour Cone dairy factory, three houses and several fences.
1888	Camp Estate surveyed for subdivision after Larnach's death.
1939	Sandymount lime quarries and kilns last used.
2008	Dunedin City Council purchases Hereweka Harbour Cone Block.

History of the Harbour Cone Block

The following is a brief overview of the history of the Hereweka Harbour Cone Block. A detailed historical account by Jill Hamel is appended to this Conservation Plan, and also is a stand-alone document in its own right.

Kāi Tahu have a long association with Muaupoko (Otago Peninsula) and the mauka (mountain) of the peninsula Hereweka (Harbour Cone). Permanent settlements occurred around the coast due to reliance on the sea as a means of transport and for the availability of kai moana and fish. Places for mahika kai, where food resources could be produced or procured, around Muaupoko were numerous. The tidal bays of the peninsula provided excellent tuaki (cockle), pātiki (flounder) and pāteke (duck). Other species caught by netting included red cod (hoka) and leather jacket (kōkiri/puamorua). The kake (female sealion) was sought from December to May, as was the whakahao (male sealion). Archaeological evidence of this occupation is abundant, especially around the coastline. There are numerous archaeological sites recorded, including Little Papanui, a large village as evidenced by the abundance of moa and seal remains and richness of artefact collections, Hoopers Inlet, Papanui Inlet and Papanui Beach, Pipikeratu, Taiaroa Head (Pukekura) and Tarewai Point.
Kāi Tahu sites are continually appearing around the peninsula coastline as erosion takes place. For example, a recent excavation at an eroding site at Sandfly Bay uncovered a small wrapped bundle of bird spears.

The name Hereweka, a literal translation of which would be 'catch weka,' refers to the place on the peninsula where the food resource of weka was found. Another suggested possible meaning of Hereweka is 'swift weka,' also a reference to the birds that were once a plentiful food source. Hereweka also features in the 'Tarewai tradition,' captured in the oral histories of Te Rūnanga o Otākou and in published works. The story is told that, following an incident near the pyramids in the late 1700s, Tarewai, a Kāi Tahu warrior chief and several of his men were taken prisoner by Kāti Māmoe. The warriors were killed, while the wounded Tarewai made his escape into the surrounding dense bush. Hereweka has been identified in one account as the mauka site where Tarewai hid in a cave tending his wounds, recovering to remain a threat to Kāti Māmoe for many years. When recovered, Tarewai managed to steal back his patu, and run to the shelter of his pa at Pukekura (Anderson 1998:54).

Although there are not any identified Maori archaeological sites within the Hereweka/Harbour Cone property to date, particular sites or places did not function in isolation from one another. All places were part of a wider cultural setting, and so the area has cultural significance. It also remains possible that archaeological evidence of Maori activity may be discovered in the future.

The Historic Era

Occupation of the area was unbroken into the historic period, and early European visitors to the Otago Peninsula observed villages with about 40-50 houses in the 1820s. The first European to observe the Otago Peninsula was James Cook in February 1770, and the first visitors were probably sealers (Hamel 2001: 103). The first permanent European settlement was the whaler's base at Wellers Rock in 1831.

In 1844 the Otago Block of 144,600 acres was purchase from Kai Tahu by the Otago Association, with the intention to establish a Wakefield class settlement, where the community would have two main classes, a land-owning capitalist class, and a wage-earning working class. This philosophy was pursued in the urban area, but in more rural areas it was thought that there should be 'a sturdy, economically and socially independent citizenry of family farmers efficiently improving their properties' (West 2017:199). They should be sufficiently concentrated, according to Wakefield, to share the infrastructure of civilization (Schrader 2016: 40), not just of trade but also churches, schools and meeting halls. To be concentrated was to be civilised.

One of the large areas of rural land close to Dunedin was the Otago Peninsula. The Hereweka area was surveyed for individual land titles in 1863 (Otago SO 1327), the boundaries of which can still be seen in places where there are surviving stone field walls. Land on the lower slopes near the coast was divided up into approximately 11 acre sections, while the higher and steeper land was divided up into sections of between approximately 30 and 50 acres.

Land speculators were a scourge (West 2017:197), and efforts were made at various times to add conditions, including that the purchaser of a crown grant must demonstrate substantial investment over subsequent years. The period of land purchases for the Harbour Cone farms was 1863 to 1872, by which time all but 26 acres on the eastern side had been acquired. Out of the 15 separate farmstead sites on the (present) property, only Riddell, Rutherford and Larnach (for his initial 100 acres) took up the initial crown grant. For all the rest the family known to have settled, built a farmstead and sent children to Sandymount school is the second or even third holder of the title. The largest of the land holdings in the Harbour Cone area was granted to William Larnach (Middleton 2012: 36). Larnach's estate, including his 'castle' served as the modern focal point of the area, and provided employment for many of the local families.

For those that did actually settle on the land, one of the first jobs was forest clearance, as the Otago Peninsula was heavily wooded with tōtara, rimu, and matai, and the effort taken in clearing this bush in order to establish pastures suitable for dairy farming are recorded in the diaries kept by Walter Riddell between 1865 and 1871 (McNab Collection, Dunedin Public Library). The timber provided building materials for the early farmers' cottages and farm buildings, and several structures with pit-sawn timbers survive on the Harbour Cone Block. As the forest was cleared, farmsteads with their poorly insulated cottages became exposed to the weather, especially on the ridges. Nearly every farmer on the Otago Peninsula responded by planting macrocarpas around their farmsteads, and they have become the most conspicuous trees in the cultural landscape.

As farms developed, each would have had a predictable group of out-buildings, built to fairly standard patterns using local materials (West 2009: 325). One of these buildings was the cow byre that most dairy farmers built (of which two remain standing on the Harbour Cone block). Dairy farmers of this period had been accustomed to keeping their cows under cover at night in Britain. Keeping them in a byre allowed the farmer to give them supplementary feed by just dropping it from a loft overhead into mangers, as well as concentrating some of their dung in one place, where it could be collected and used for fertilizing gardens. Under the byre system, there was a stall for each cow. There would also often have been a pig sty nearby on each farm, as pigs were fed on the skim milk after the cream had been separated either in a home dairy or local creamery.

Another feature of the developing landscape was fencing. Most early fences were wooden, either piles of logs left after burning, or post-and-rail fences with posts of durable broadleaf or kowhai. Dry stone walls were the most durable, and therefore perhaps the most powerful symbol of improvement, and they required arduous and painstaking work to build, but they were also a practical use for the stones cleared from the fields as they were prepared for the plough (West 2009: 326).

There was initially no road connection to the outside world (which meant that much timber was burned as it could not be carted to Dunedin for sale). The building of Highcliff Road (I44/430, I44/828) was a slow process. It had not been started by the time that Walter and Wilhelmena Riddell wanted to move on to their land, and in his diary Riddell recorded that in March 1865 it took him ten days to carry all his goods to his fern tree house from the end of the dray track where the carter had left them. In December 1867 Riddell set up the frame of Pukehiki Church, suggesting Highcliff Road had reached at least to the junction with Camp Road. In 1870, Peter Thomson, a nature writer with a regular column in the Otago Witness, described leaving the ferry at Portobello, climbing Harbour Cone and visiting James Macdonald at his lime kiln at Stewarts Creek. He walked most of the time on 'a fine road' through dense bush (Papers Past, OW 9/4/1870:8). By 1878, the road was even 'well macadamised' all the way to Portobello (West 2017: 195). It is most likely therefore that it was in 1868-1869 that Highcliff Road was formed across the Harbour Cone Block.

Industry & Commerce

The economic activities on the Harbour Cone Block included not only farming and working on Larnach's estate, but also a dairy factory and lime quarrying and burning.

As the farmers developed their dairy herds, they were too far from town to deliver milk daily, but they could make butter from the cream and feed the skim to pigs, or could use the milk by making cheese. A more organized operation started in September 1877 when Captain William Leslie established Harbour Cone Cheese Factory and invited those farmers within a mile and a quarter with sufficient capital to buy shares and form a dairy co-operative. After the factory was burnt out by the bush fire of 1881, the suppliers had to make butter and sell it themselves until the Sandymount creamery was built in1893 (Smith: 72). This was one of a large network that was operated by the Taieri and Peninsula Milk Company, which also had its origins on the Otago Peninsula, and of which Walter Riddell became the general manager. The creameries separated the milk into cream, which was then transported to the central dairy factory in Dunedin to be made into butter, and skim milk, a share of which was returned to the farmers to be used back on the farm.

Limeburning was another local industry, which has left a significant architectural legacy in the three Sandymount limekilns (one of which is on the Harbour Cone Block). The limestone which outcrops on the HHCT property belongs to a formation called the Dowling Bay Limestone, laid down during the mid Miocene. It is of poorer quality and more variable than Milburn limestone, and outcrops in a thin curved strip down in Stewarts Creek and up to Sandymount Road. It is estimated that 20,000 cubic yards have been quarried from it in the past (Bishop and Turnbull 1996: 41; Wood 1969: 16). The first limekiln was erected by James McDonald with the assistance of Walter Riddell in 1865.

Probably the most important single document for the interpretation of this historic landscape is W.T. Neill's 1901 survey map series of the Dunedin area. Sheets 16 and 17 cover the Harbour Cone area, and show the locations of all of the farmsteads that existed at that time. This date was at the end of the pioneering period, and although at least two farmstead sites have been identified that were already abandoned by 1901 and not shown by Neill (sites I44/431, 982), the map accurately portrays the pioneer landscape before farm amalgamation saw most of the community depart.

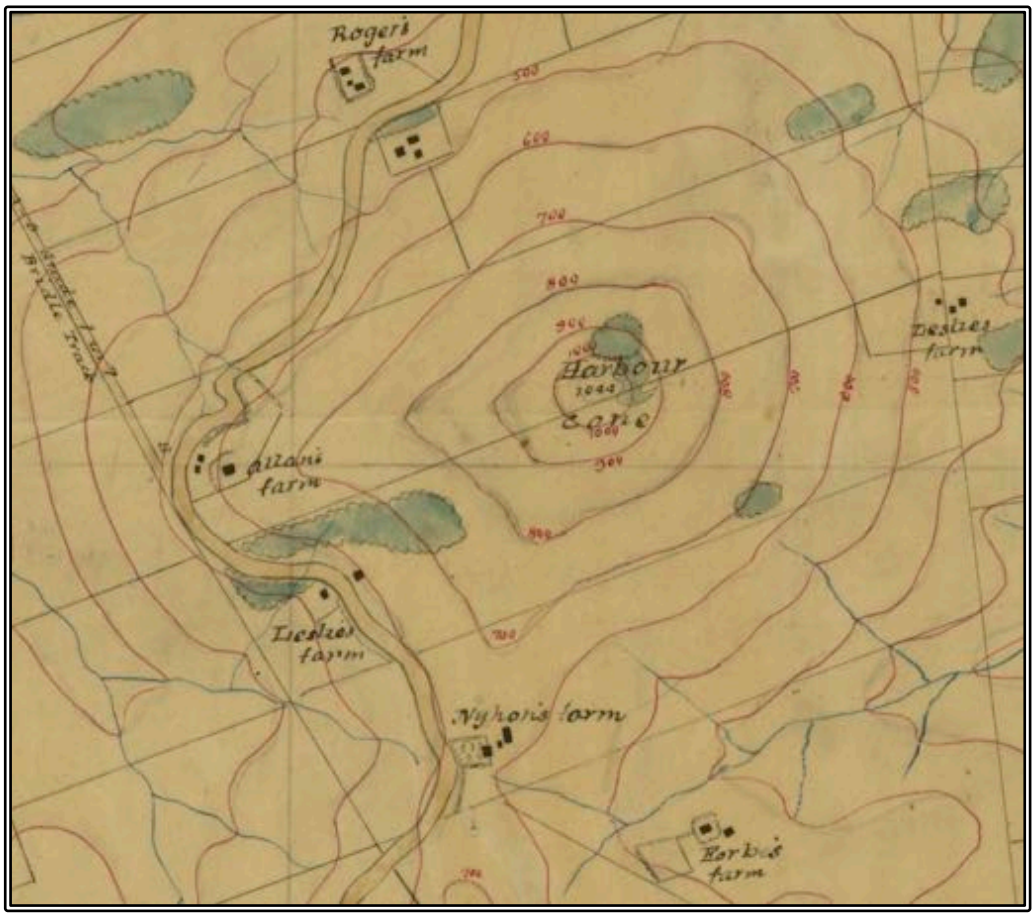

Figure 3
A detail from W.T. Neill's 1901 survey of the Dunedin area, showing the farms around Hereweka Harbour Cone (LINZ).

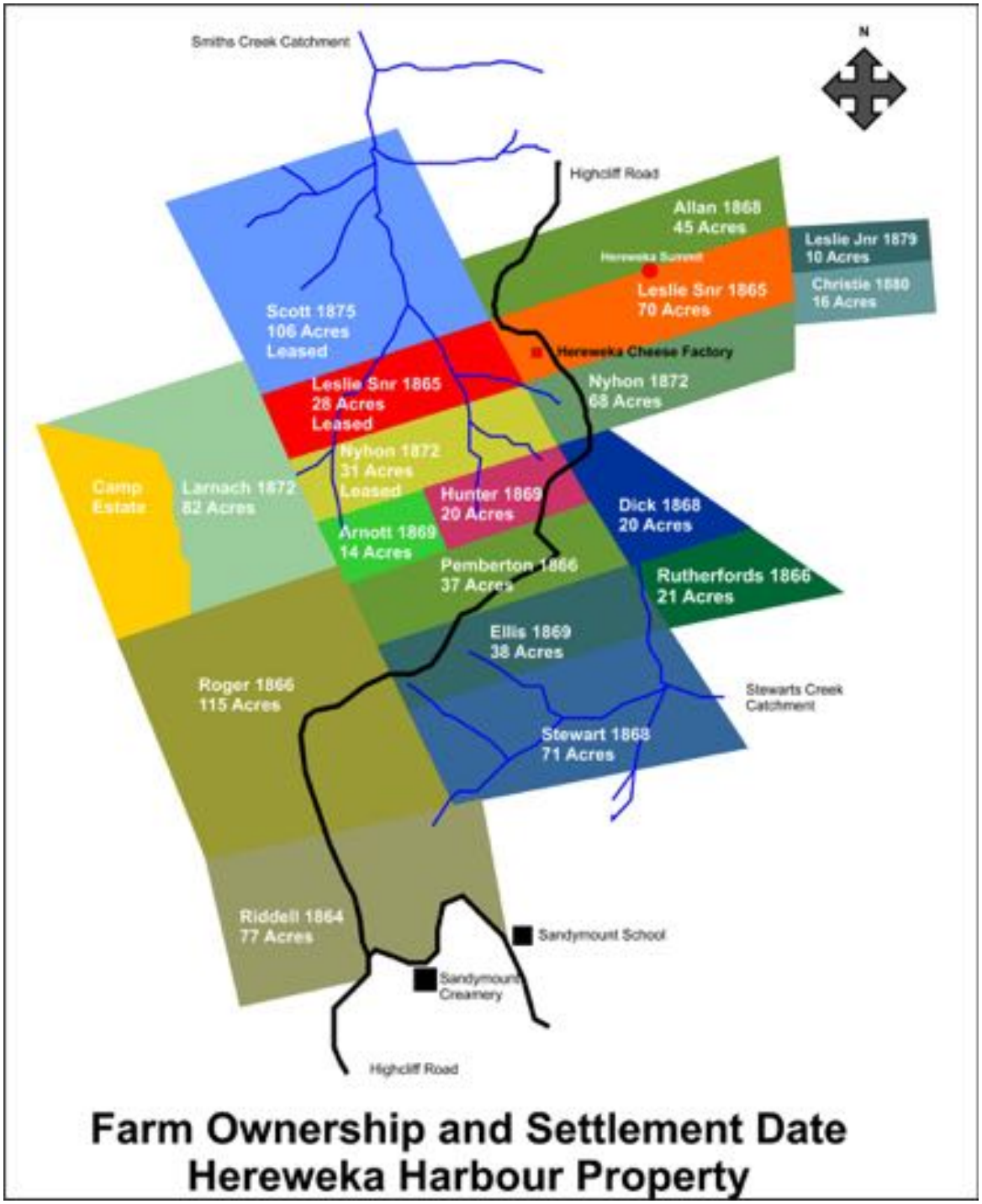

Figure 4
Early settlement land tenure of the Hereweka Harbour Cone block.

3 Heritage Fabric: Physical Description

The Hereweka Harbour Cone block was surveyed for archaeological sites in 2008 by Angela Middleton, and she entered her results in the New Zealand Archaeological Association Site Recording Scheme (online as www.archsite.org.nz). For the purposes of the preparation of this conservation plan these sites were all revisited and photographed by Peter Petchey, and the NZAA records updated. Seven previously unrecorded sites were also described and entered on the database. The site descriptions given below include the NZAA site numbering.

In describing individual sites within an area the size of the Harbour Cone Block one question is whether to organize the narrative geographically or thematically, or in the case of recorded archaeological features numerically based on their site numbers. In the descriptions below the sites are organized geographically, starting at the northern end of the property and travelling anti-clockwise. The sites are then reviewed thematically. The tabulated list of sites is organized on order of NZAA site record number.

No Maori archaeological sites have been recorded within the Hereweka Harbour Cone block, but a number have been recorded on the harbor-facing hillsides to the west of the property.

Table 1
Recorded archaeological sites within the Harbour Cone Boundary

Site Description	NZAA No	Site type
Tramway to lime kiln	I44/81	Tramway
Leslie's farmstead & Harbour Cone Chees Factory site	I44/82	Historic building terraces
First Sandymount lime kiln	I44/85	Lime kiln & quarry
Allan's farmstead & forge	I44/96	Stone ruins
Stone wall, HighamWall 4	I44/102	historic stone feature
stone boundary wall Higham 21a b and c	I44/410	historic stone feature
William Larnach's farm buildings	I44/412	historic building structures
Farm road - Larnach's to Rogers	I44/413	historic farm road or track
Riddell's house and Sandymout Post Office	I44/414	historic building structures
Roger's house and environs	I44/415	historic building structures
Stewart's house and environs	I44/416	historic building structures
Stewart's road to school and Hoopers Inlet	I44/417	historic farm road or track
Ellis' house and environs	I44/418	historic building structures
Pemberton's house and environs	I44/419	historic building structures
Arnott's house and environs	I44/420	historic building structures
Arnott's road	I44/421	historic farm road or track
Wally Hunter's house	I44/422	historic building structures
Rutherford's road	I44/423	historic farm road or track
road to goldmine	I44/424	historic farm road or track
west fork - Rutherford's road	I44/425	historic farm road or track
Rutherford's house complex	I44/426	historic building structures
Rutherford's gully track	I44/427	historic farm road or track
Nyhon's house	I44/428	historic building structures
Nyhon's cow byre	I44/429	historic building structures
stone revetting	I44/430	historic stone feature
Robert Dick's house complex	I44/431	historic building structures
Leslie's road	I44/432	historic farm road or track
Stone wall Higham Wall 10	I44/433	historic stone feature
Stone wall Higham Wall 11	I44/434	historic stone feature
discontinuous stone boundary wall Higham Wall 12 and 13	I44/436	historic stone feature

Leslie #1 henhouse and cowshed	I44/437	historic building structures
stone revetting below road at Leslie's #1	I44/438	historic stone feature
stone culvert and track over gully near Leslie #1	I44/439	historic farm road or track
discontinuous stone boundary feature	I44/440	historic stone feature
Bacon's Bridle Track and extension	I44/442	historic farm road or track
Allan's road	I44/443	historic farm road or track
macrocarpa stands above Highcliff Road	I44/444	historic tree feature
Leslie #2 house and environs	I44/445	historic building structures
Limestone crushing plant	I44/447	limestone processing area
Robert Dick's hedge & stone boundary wall	I44/448	historic stone feature
stone wall feature Higham wall 14	I44/449	historic stone feature
Higham wall 20 stone boundary wall	I44/452	historic stone feature
Farmstead site, Smith's Stream	I44/982	Historic farmstead site
Stone revetment below Highcliff Road	I44/1014	Historic stone feature
Stone wall beside Bacon's Track	I44/1015	Historic stone feature
Stone quarry beside Bacon's Track	I44/1016	Historic stone quarry
Stone wall on Rutherford/Nyhon boundary	I44/1017	Historic stone feature
Stone wall on Rutherford/Pemberton boundary	I44/1018	Historic stone feature
Building site, Highcliff saddle	I44/1036	Historic building site
Sites outside Harbour Cone boundaries		
Sandymount creamery	I44/72	Dairy factory
Limestone kiln	I44/83	limestone processing area
Limestone kiln	I44/84	limestone processing area
Sandymount School	I44/446	historic school site
stone wall above Camp Road	I44/411	historic stone feature
Forbes' house and environs	I44/435	historic building structures
Edmund Ward's house complex	I44/441	historic building structures
Edmund Ward's road	I44/450	historic farm road or track

Table 2
Recorded Maori archaeological sites near the Hereweka/Harbour Cone property

Site number	Description
I44/14	Ovens?
I44/18	Oven
I44/19	Ovens
I44/25	Umu ti
I44/26	Umu ti
I44/27	Umu ti
I44/132	Oven

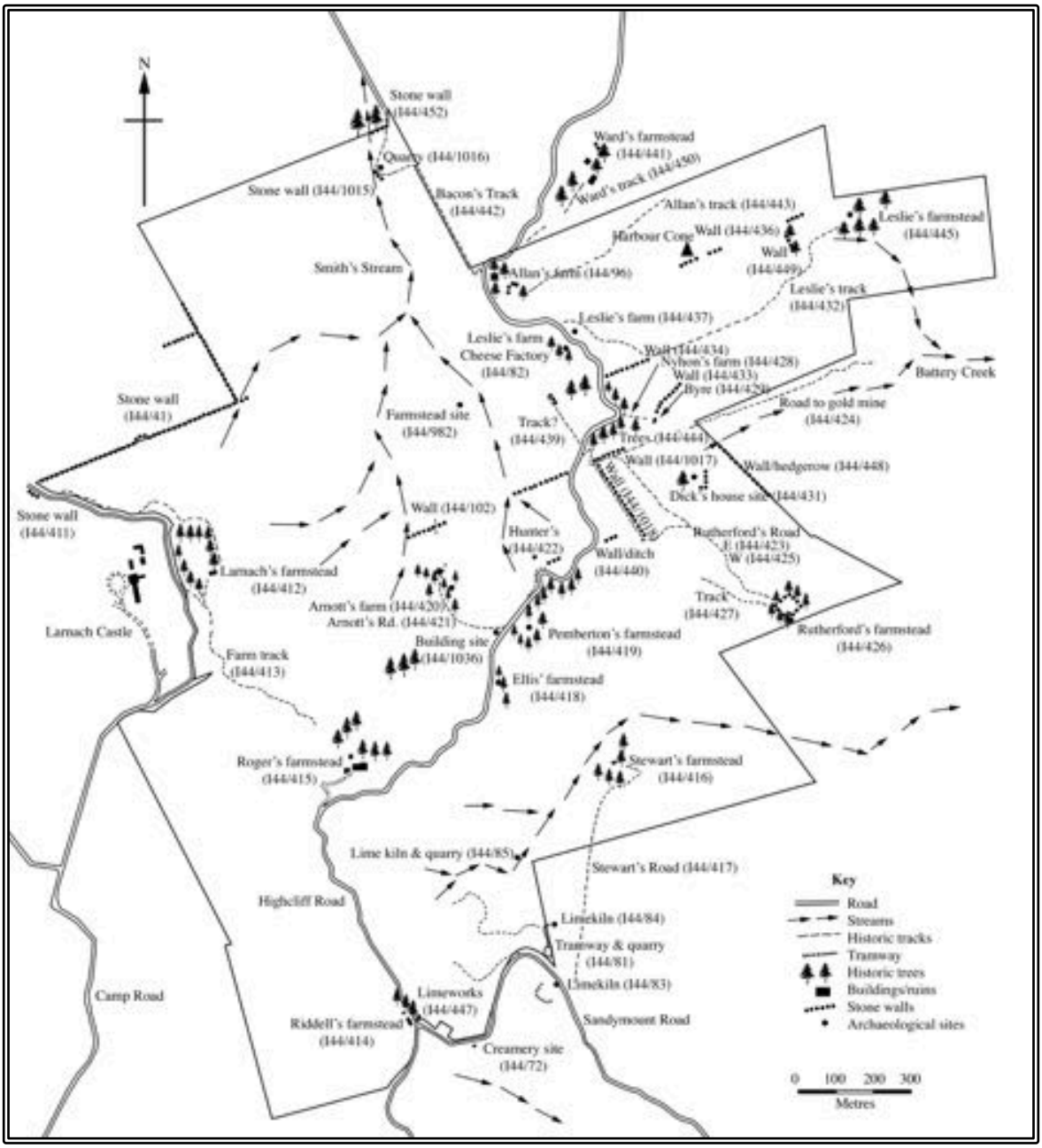

Figure 5
Map of the recorded archaeological sites and features on the Hereweka Harbour Cone property.

I44/410 Stone boundary wall

This drystone wall complex marks the northern boundary of the Harbour Cone purchase. The wall is well-constructed, but now in mixed condition, with some very well preserved sections and some poor sections. In particular in one place a slow landslide has caused the wall to collapse and its line to bow out from the legal boundary. There are approximately 900 metres of the wall along the property boundary (Higham walls 21A, 21B), and another 95 metres of wall on neighbouring land connects to the wall (Higham wall 21C).

The wall complex is identified in Higham (1986) as wall numbers 21A - 21C. Higham considered that this was the work of a professional waller, likely employed by Larnach. The wall 21A formed the boundary of Larnach's land with that of his neighbour, Thomas McLennan, until Larnach purchased McLennan's farm in 1883, making it likely to have been built between the date of the Crown Grant, 1860, and the 1883 purchase. Walls 21B and 21C were also built along boundaries prior to Larnach's 1880s land purchases. Wall 21C lies outside the boundary of the Harbour Cone area.

Figure 6
Stone wall I44/410: Wall 21A illustrated in Higham 1986, showing a water smoot through the wall.

Figure 7
Stone wall I44/410 (Higham wall 21A) running along the northern boundary the Harbour Cone Block, with Hereweka Harbour Cone in the background.

Figure 8
One of the best-preserved sections of stone wall I44/410.

Figure 9
The section of wall I44/410 affected by slumping as it appeared in 1986 (Higham 1986, Wall 21A).

Figure 10
The section of wall I44/410 that has been displaced by slumping. Comparison with the image above taken in 1986 suggests that the ground may still be slowly moving.

I44/411 Stone wall above Camp Road

This wall lines the upper side of Camp Road. It is can be seen near the end of the road, but is very overgrown and has not been followed, so its extent is not known. It is likely to be associated with Larnach's Castle. As it is on the west side of the road it is outside the Harbour Cone Block. It was not recorded by Higham (1986).

Figure 11
Stone wall I44/411 on the west side of Camp Road.

I44/412 William Larnach's Farmstead

Larnach's Byre is described in detail in Section 5 Timber Buildings.

The overall farmstead is also described in detail in Gosling (2009).

Larnach's life is well documented (Reed 1951, Knight 1981, Sneddon 1997), especially in his roles as owner of a grand house, as a banker, business man and politician. His importance in the development of dairy farming in Otago and as a pastoral lessee has been less studied (Gosling 2009), but his Otago Peninsula land and model farmstead and his part ownership of the Moa Flat run were significant aspects of his endeavours. Larnach imported particularly good riding and carriage horses, as well as draught horses and boys' ponies, and bred Ayreshire cows which suited the conditions on the Peninsula. His Alderney bulls were

in demand, and commanded high prices throughout New Zealand. In addition to his contributions to the local livestock quality, he was also probably the most significant local employer, and for most of period from 1870 to 1898 up to 50 adults from the surrounding farmsteads that were within walking distance of the Castle and farmstead probably earned part or whole of their living from working for Larnach. He employed David Arnott (Middleton 2008: 22) and the four Dick brothers as stone masons, Robert Roger as carpenter, and Walter Riddell as foreman and carpenter to build the castle (Sneddon 1997:80). Riddell was a skilled carpenter, and built the hanging staircase in the Castle (Sneddon 1997: 83), and went on to build one for Salisbury, another Lawson house on the Taieri plain owned by Donald Reid (Margaret Gibbs: pers.com.). Larnach therefore had a critical role in the community that occupied the Harbour Cone block in the late nineteenth century.

The land, on the Hereweka Block that Larnach bought in 1872, comprises old sections 21, 1 of 44, 1 of 46, 48, 50 , and 53,54, 56 Block II, Portobello S D - the latter three making up his home farm and the rest leased out. The Camp Estate extended beyond the land now within the Dunedin City Council's boundaries. Larnach's first farm buildings (built by Walter Riddell) were placed on top of the ridge near the present Castle gates (Williams and Williams n.d.:14) before the Castle was built. This was such an undesirable entrance to his grand house that Larnach had three massive terraces (30 x 7 m, 24 x 16 m, 12.8 x 2 m) dug out on the steep hillside to the east of the Castle, and shifted his original cottage and the farm buildings out of sight down slope (Gosling 2009:32). It is not clear from the records when this work was carried out. The original cottage, that the Larnach family lived in while the Castle was being built, became the farm manager's house on a higher terrace. On the main terrace Larnach had constructed a model farmstead, with a central farmyard enclosed on all four sides by buildings, which included a stables (in the 1880s there were 58 horses and four foals on the property), byre, (probable) implement/cart shed, and an entrance building that may have contained sleeping quarters for employees such as stable boys (of these buildings only the byre still survives in 2020). These farm buildings looked out on the valley below and over to the south face of Harbour Cone, most of this land forming part of Larnach's "Camp Estate" by about the mid 1880s.

Following William Larnach's death in 1898 his son Douglas and solicitor Basil Sievwright sold off parts of the estate to other local landowners (CT124/48). Allotments 2, 3 and 15, covering a central section of the valley as well as the farm buildings, were transferred to the ownership of James Nyhon, likely to be the son of John Nyhon whose house (I44/428) was located on the up hill side of Highcliff Road, while neighbouring Allotment 4 was transferred to sisters Hannah and Ann Nyhon. Both these blocks of land came into the ownership of Margaret Nyhon, of Broad Bay, by about 1951, who constructed a new woolshed on the farmstead terrace in 1973. This was removed in 1996 by subsequent owners, leaving behind a series of concrete piles.

The fate of the various farmstead buildings is only partially recorded. The manager's house was demolished in the 1980s. The stable appears in 1960s photographs but by the 1970s it had gone. The implement/cart shed is described in detail in Petchey (2018), and was probably destroyed in the late nineteenth or early twentieth century by a landslip on the side of the terrace, and was replaced by a small woolshed that was finally removed in 2018. There is no record or image of the entrance building, but its floors were still clearly visible in 1940s aerial photos. To the south of the main farmyard cluster, the building described by

Knight as a 'steading' on a corner of the road down to the yard also has no records. Only the byre building survives today.

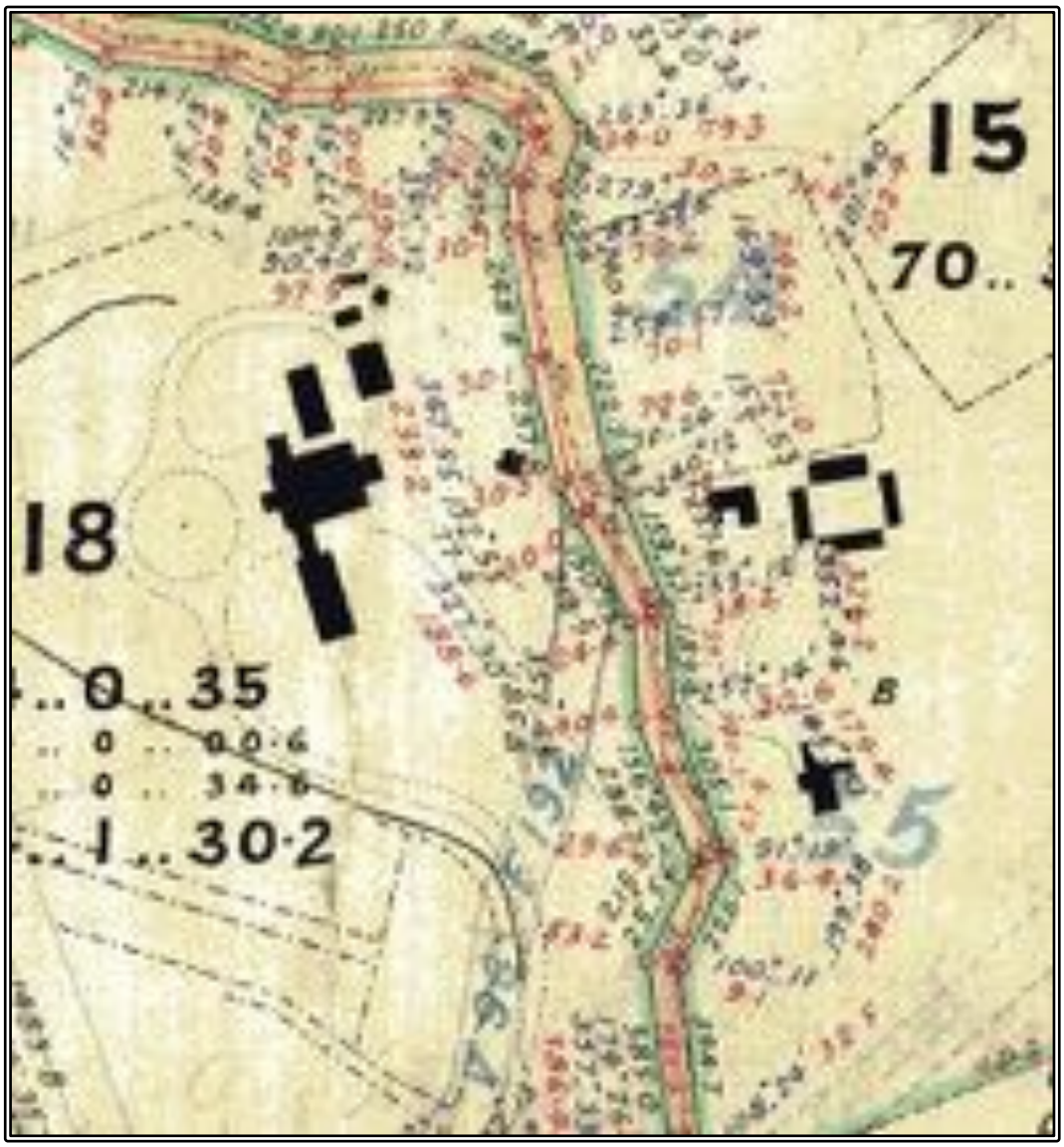

Figure 12
Detail from map of the subdivision of the Camp Estate (DP1453, LINZ). The castle complex is to the left, with the farmstead to the right. The square of buildings encloses the farmyard, with the manager's house just to the left, and a large building of unknown function below (to the south) on the bend in the access track.

Figure 13
Larnach's farmstead, probably in the 1960s (Hardwicke Knight, Hocken Archives).

Figure 14
Larnach's farmstead, probably in the 1960s (Hardwicke Knight, Hocken Archives).

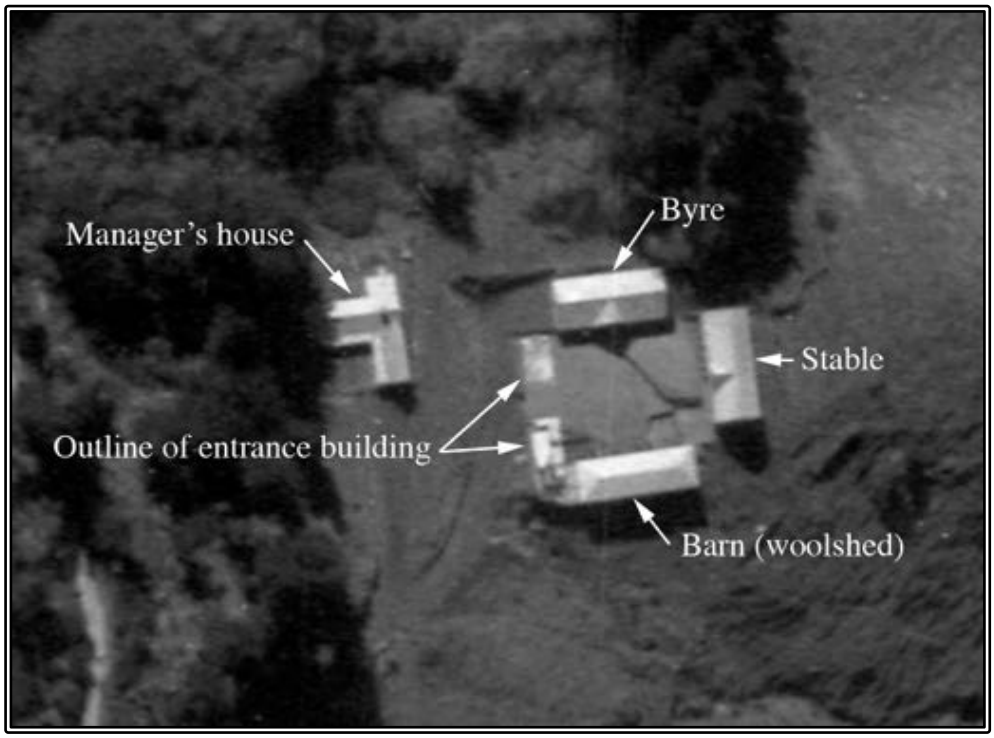

Figure 15
Annotated 1942 aerial photograph showing Larnach's farmstead. Of the buildings shown, only the Byre still (in 2020) exists.

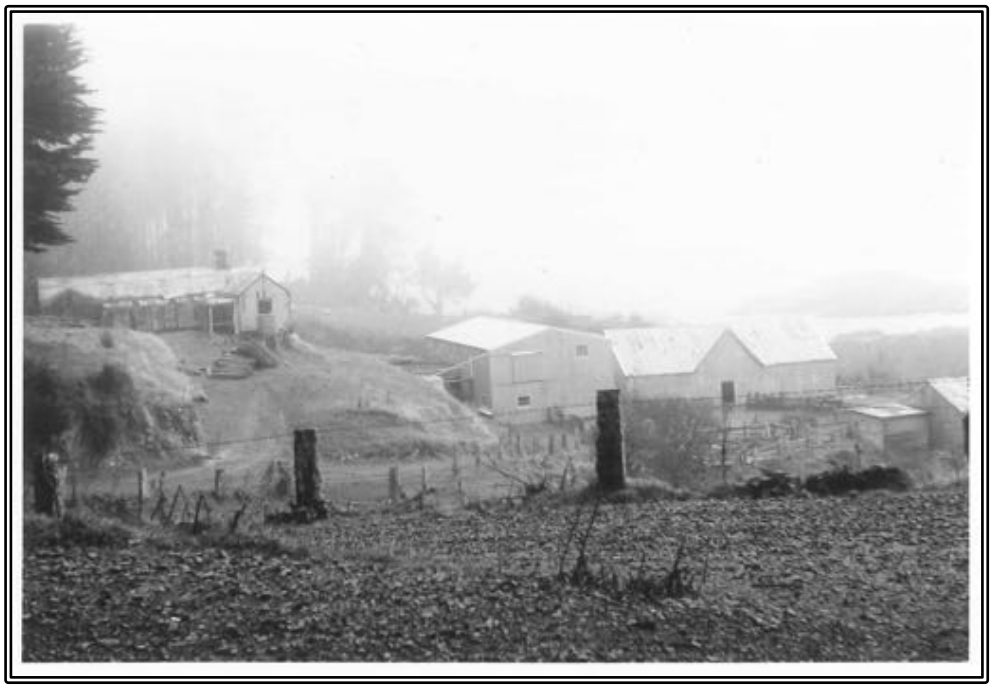

Figure 16
Larnach farmstead from Dunedin 1979-1980 street survey files by Heritage New Zealand. This image shows the manager's house to left, the 1970s Nyhon woolshed centre, and the byre (clad in corrugated iron) to the right (Heritage New Zealand).

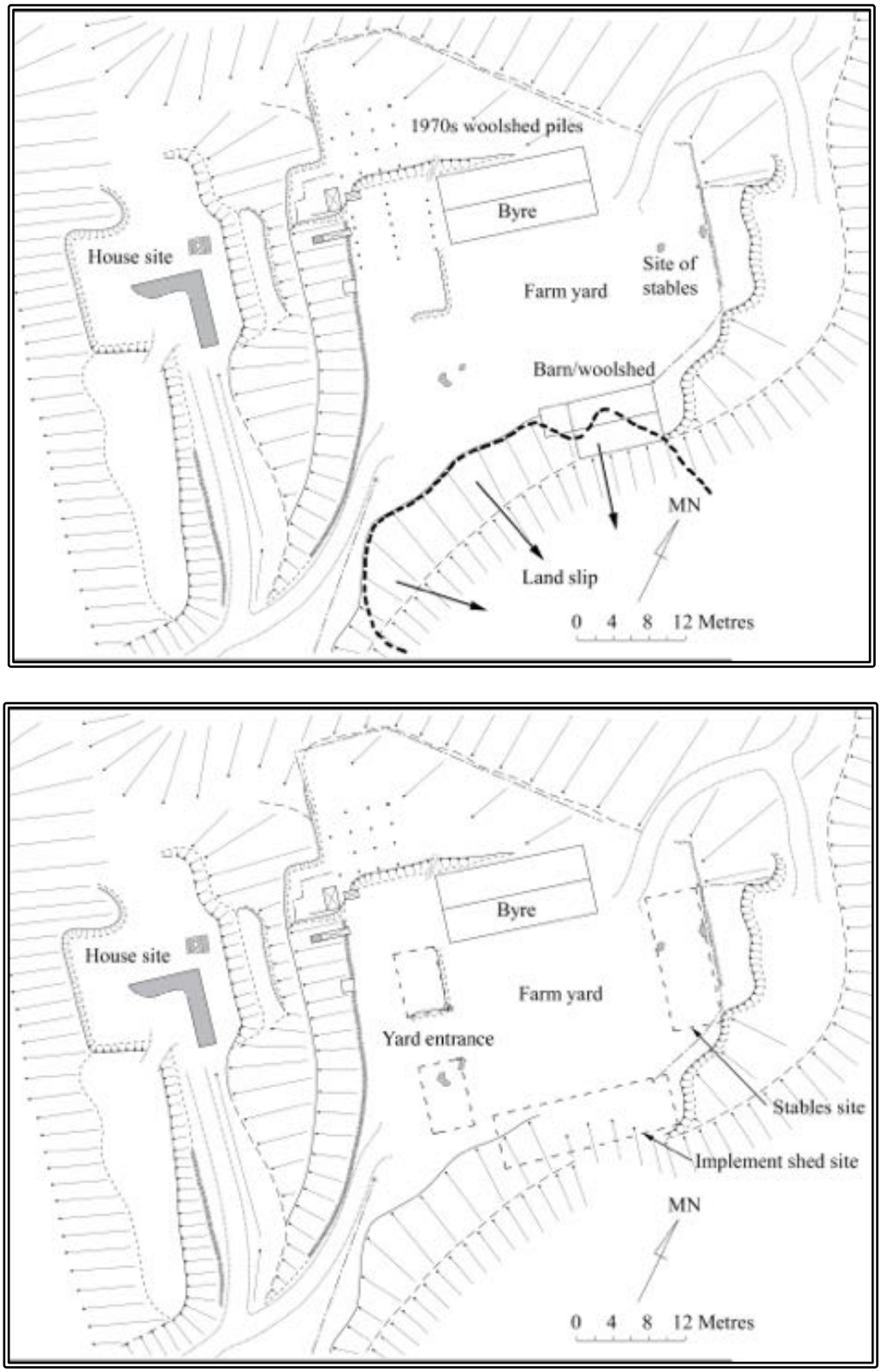

Figure 17
Plan of Larnach's Farmstead (site I44/412) by Anna Gosling, with annotations and additions. Top image shows the barn/woolshed that was demolished in 2018 and the subsidence on the south side of the farmstead terrace . The bottom plan shows the locations of the original buildings.

The site of Larnach's farmstead today consists of a series of five terraces stepping down the hillside on a ridge on the east side of Larnach Castle. Only the byre building still stands (this is considered in detail in Section 5 below), but the outlines of the stable and entrance buildings can still be found in the ground, the chimney of the manager's house is still present, and the size and location of the probable implement/cart shed has been considered by Petchey (2018). Of the building that stood on the terrace at the bend in the access track there is no above-ground indication, but there is probably sub-surface evidence on the terrace itself.

Figure 18
Larnach's farmstead in 2020. The only standing building is now the large cow byre.

The manager's house was located on the terrace above the farmyard. The track into the farmhouse terrace has a large stone revetment, and the house site is marked by the brick chimney that still stands to full height. The chimney served two fireplaces; an open fire one one side and a green-and-cream enameled 'Zealandia' coal range on the other (Figure 21). A pile of old corrugated iron down the bank behind the chimney is probably from the house.

Figure 19
The stone revetment on the access drive to the manager's house site.

Figure 20
The brick chimney of Larnach's farm manager's house.

Figure 21
The coal range of the farm manager's house on the terrace above the main farmstead.

The main farmyard terrace below is now dominated by the cow byre building (described in Section 5). It is located in the north side of the terrace. The rest of the terrace in in grass, although excavations have revealed that stone cobbling is present over at least part of the area. The extent has not been tested, but as 1960s photographs show fenceposts and other modifications in the yard area it is anticipated that any cobbled surface has been damaged.

The outline of the stables can still be found in the grass, and recent archaeological excavations (Petchey 2020) identified the inner corners of the entranceway that ran through the entrance building. The concrete piles for the 1970s Nyhon woolshed were cut through the floor of this building. On the southern side of the terrace, where latterly the small decrepit woolshed stood, the land slip can be seen that probably destroyed the original building on this side of the farmyard. Several areas of stone revetment elsewhere on the face of the terrace speak of efforts to stabilize the cut and fill slope by Larnach's workmen.

At the eastern end of the farmyard terrace there is another possible building terrace, set slightly lower than the main terrace, and a track leads away to the north, where there is a large terrace cut into the hillside that has no record as to its history or age. This track cuts through the rock hillside, and would have taken some effort to construct.

Condition:	Site generally good. Drainage down drive and onto flat, and ground water, causing dampness. May exacerbate instability of terrace edge. Byre discussed in Section 5 below. Moderate condition.
Threats:	Instability. Decay of byre building. Stability of brick chimney.
Tree management:	Maintenance of trees on hillside to west of farmstead.

Figure 22
The main terrace of Larnach's Farmstead in 2020, during 202 archaeological investigations. Hereweka Harbour Cone in the background.

Figure 23
Farmyard paving exposed in August 2017 during work to clear the drains around the byre.

Figure 24
The small woolshed at Larnach's farmstead that was demolished in May 2018. It contained a small amount of material from the original implement shed that stood here prior to the edge of the terrace slipping away.

Figure 25
One of a set of wool bale stencils found in the old woolshed prior to its demolition in 2018.

Figure 26
The slip on the south side of Larnach's farmstead terrace. This slip appears to have been slowly active since the terrace was first created, and caused the loss of the original implement shed.

Figure 27
One of the sections of revetment on the southern face of Larnach's farmstead terrace, probably built in an attempt to stabilise this slope.

Figure 28
The track cutting below Larnach's farmstead for the farm track leading around to the north.

I44/413 Larnach's Farm Road

This track leads from Larnach's farmstead (I44/412) to Roger's farmstead (I44/415).

This track was recorded by Middleton in 2008, The main track down to the farmstead from Camp Road descends the steep slope, with a tight corner where a farm building once stood. Parts of this access track have revetment on the bank above.

The track that runs from the tight corner across the hillside to Roger's Farmstead (I44/415) has been recorded as part of this historic track network, but it does not appear on maps that show the main access track (Misc-1), and in 1940s aerial photographs appears as a reasonably fresh line: it was certainly in use then, even if not recently made. Therefore, this extension to Larnach's farm road is unlikely to be the same age as the track down to Larnach's farmstead, but may have been constructed soon after as other farmsteads developed. It was certainly there by the early twentieth century.

Figure 29
The benched track (I44/413) that runs between Larnach's and Rogers' farmsteads.

I44/ 414 Walter Riddell's house and farmstead (& Post Office site)

Walter Riddell's timber farm building is described in detail in Section 5 Timber Buildings.

Walter Riddell was a man of two careers. His first was as a bushman and carpenter in the 1860s and 1870s, when he is the most visible of all the small local farmers in the archival records, both because he left a diary and because he built for Larnach. In his second career (1884 - 1914) he was an entrepreneur, who established and made a success of the Taieri and Peninsula Milk Supply Company, exporting frozen butter to Britain.

Riddell was born in Dumfrieshire, Scotland, in 1837 and was educated in the parish school (Cyclopedia of New Zealand 1905: 301). In 1862 when he was 25 he married Wilhelmina Brown Glendining, and came to New Zealand in the ship Grasmere with his wife, his brother and father. He bought his 77 acres at Sandymount in 1864, well beyond the road end which would not reach him until 1867, when Riddell noted in his diary that the new (Highcliff) road was to go through his property. In 1864 Riddell built his first home, a punga whare, on the upper slopes of Peggy's Hill, but in April 1870 decided to relocate the family house to the bottom of the hill. Riddell's diary notes his family's first night in their new house on 24 June 1871. His third house, presumably built on the same site, was a larger two-storied structure, reflecting perhaps Riddell's growing prosperity.

Walter Riddell built the Pukehiki Church and manse, both completed in 1868, and after early years of hard work and economic uncertainty Riddell spent ten years employed as foreman of works for William Larnach, managing the construction of the "castle" (Riddell n.d.; Snedden 1997). Riddell was also involved in the fledgling dairy industry. He had been involved with the local cheese making from its start. He had been a shareholder with John Mathieson and six other local farmers in the country's first co-operative dairy factory at Springfield in 1871 (Smith 2015: 65). In the early 1880s, he and Robert Roger and Alexander Stewart set up the Pioneer Butter Company, buying out the cheese cooperative at Springfield (ODT 9/1/1890, p.7). This became the Taieri and Peninsula Milk Supply Company, a co-operative of dairy farmers supplying Dunedin city with milk and exporting butter to Britain. By 1895 according to its directors' annual report, the Company was handling butter made from 1,116,963 gallons of milk (Evening Star 24/10/95, p.2).

According to the 1901 Neill map the Sandymount Post Office was located at Riddell's farmstead. It opened on 1 January 1876 and operated from that location until 15 December 1898, when this office closed and the Sandymount name was transferred to the Pukehiki Office from 14 January 1899 until 16 August 1904. It was then moved back to the original location near Riddell's, until it finally closed 2 April 1952 (Startup 1993: 213). As Knight has pointed out, school was also held in Walter Riddell's house for a period of about two years from 1871. Riddell and others petitioned the government for a school in 1869, but until the Sandymount School (I44/446) was built he turned a room in his own house into a schoolroom and used another to accommodate a teacher.

Riddell retired from the Taieri & Peninsula Company in 1914, aged 77, and died in 1922. His work in developing a market for butter in Britain, was a factor in extending the economic life of the small steep dairy farms on the Otago Peninsula, probably by a generation.

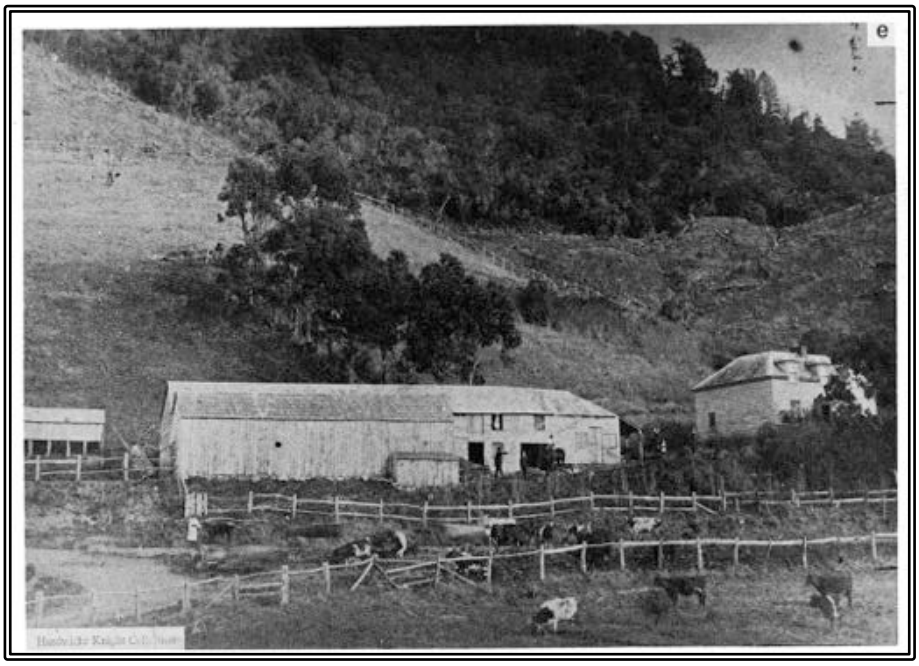

Figure 30
Riddell's homestead and barn/byre/stables building. Close examination shows that there were two parallel buildings: the front one with vertical board walls, and the rear one which is probably the building that survives today (Hardwicke Knight).

Figure 31
The remains of Riddell's house after it was destroyed by fire in the 1960s (Hardwicke Knight, Hocken Archives).

Riddell's farmstead site is located beside Highcliff Road, directly opposite the junction with Sandymount Road. The farmstead complex is situated on a terrace cut into the hillside parallel to and above the road. A line of large macrocarpa trees runs along the top of the bank, screening the farmstead remains from the road. The site has four main components:

the cut terrace itself, the standing timber farm building, the house foundations, and the garden evidence. There are also smaller individual features such fenceposts, paths and the remains of a garden shed.

Figure 32
The trees at Riddell's farmstead (I44/414), overhanging Highcliff Road.

The farm building was a two storied stone and wooden structure, and combined the functions of a barn, stables and byre, and also has a small lean-to on the front that was probably used as the local Post Office. The building is still partially standing, but is in very poor condition, with the byre end having been demolished by a falling tree. It was built to incorporate a stone retaining wall against the rear bank of the terrace. The building is described in detail in Section 5 below.

The concrete foundations of Riddell's house are to the north of the barn, and include the remains of a cast iron coal range. The foundations appear to be lines of large stones with concrete capping that was boxed and poured in place. The retaining wall against the back at the rear of the house site has a fireplace let into it: this is possibly evidence of Riddlell's first house on this site (built to replace his punga whare further up the hill), which burnt down in 1881. Surrounding the house, but particularly in the north side, are the remains of the gardens. The most prominent feature is an overgrown pittosporum hedge, but there are also the remains of pathways and fences.

Overall this is a significant farmstead, with extensive archaeological and built features, and associated with a locally and regionally important individual. However, it comes with equally significant conservation challenges, namely the farm building and the macrocarpa trees. The farm building is dealt with in more detail in Section 5 below. The trees overhang the road, but probably do not pose a threat to traffic so long as they remain healthy and dead wood is removed. The over side of the trees, overhanging the farmstead site, requires a great deal of work to remove dead wood and limb the trees up, as at present timber is resting on

the standing building. However, any work on these trees will require traffic management to be in place, which adds considerably to the costs.

Condition:	Site, good. Building, very poor (see Section 5 below).
Threats:	Unsafe building. Macrocarpa trees.
Tree management:	Prune macrocarpas along front of farmstead site.

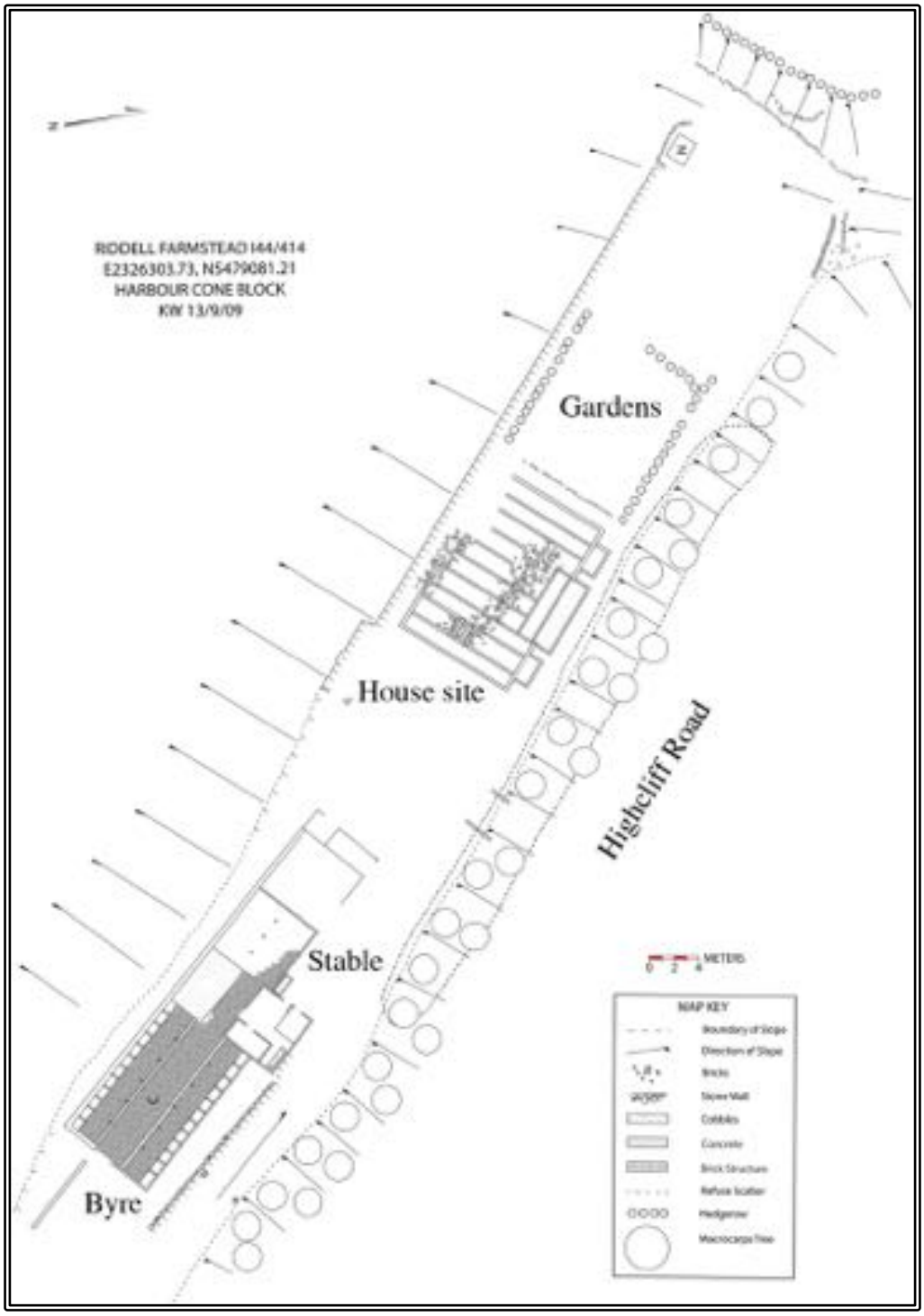

Figure 33
Site plan of Riddell's Farmstead (site I44/414) by Kirsa Webb (with annotations).

Figure 34
The north end of Riddell's farm building. The building collapse, aided by descending macrocarpa branches, is apparent.

Figure 35
The front of Riddell's barn/byre/stables building. The centre section of the building is still standing, but the far end (south, the byre section) has collapsed after a tree fell through it.

Figure 36
Concrete foundations of Riddell's house.

Figure 37
The coal range at the site of Riddell's house.

Figure 38
The retaining wall at the rear of Riddell's house site, with a fireplace built into it. This possibly relates to Riddell's second house, which was on this spot.

Figure 39
Overgrown hedgeline in Riddell's garden.

I44/447 Limeworks Site

The history and operation of this site is not well documented. Hardwicke Knight recorded a series of limestone kilns as well as the site of this 'limestone factory' in 1968. A photograph of the building is shown in Knight (1979: 92). In an article written for the *Otago Daily Times* in 1974, Knight notes that Walter Riddell's son John owned the lime crushing plant. John Riddell carted stone from the quarry above Sandymount Road (not recorded) to be crushed in the nearby plant opposite his father's house. From there the lime was carted weekly to the cement works at Pelichet Bay. Knight noted in the 1974 article that the limestone crushing factory had been recently demolished.

Figure 40
Sandymount hydraulic limeworks building, about 1960 (Hardwicke Knight, Hocken Library).

Figure 41
Interior of Sandymount hydraulic limeworks building, about 1960 after the machinery had been removed (Hardwicke Knight, Hocken Library).

The site is located on the downhill side of the Highcliff Road, adjacent to the junction with the Sandymount Road and opposite Riddell's farmstead site (I44/414). The concrete foundations for a building of approximately 17m by 8m, with a 4m extension out to the side, are clearly visible in the grassy field. A substantial stone revetment has been built under the Highcliff Road in one place, possibly to support a loading bay, and an access drive off Sandymount Road is still evident.

The archaeological remains are in open grazed paddock, and are generally of robust materials. The only likely threat would be if the paddock was mechanically cleared.

Condition:	Reasonable (foundations only).
Threats:	None known.
Tree management:	N/A

Figure 42
The concrete and stone foundations of the limestone crushing plant I44/447.

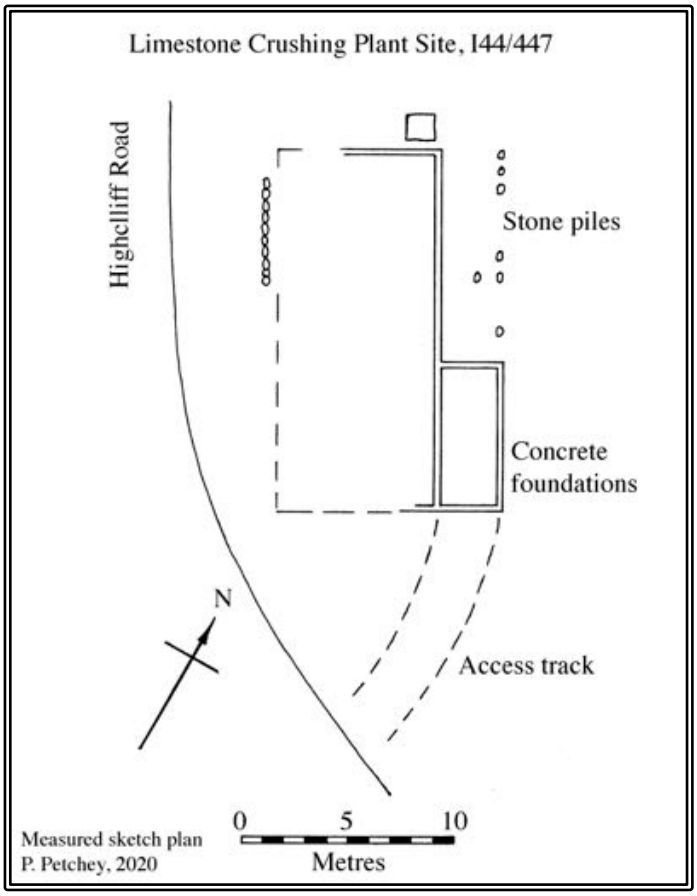

Figure 43
Plan of the limestone crushing plant foundations I44/447.

I44/81 Tramway to Middle Lime Kiln

Hardwicke Knight recorded this tramway in 1968. It was used for horse-drawn trolleys to carry limestone from a quarry below Sandymount Road to the limekiln (site I44/84) below (Knight 1974; 1979: 84). The tramway ends at a rocky rock face, and a timber trestle would probably have carried the tramway to the top of the kin. The tramway formation is approximately 2.6m wide. It is mostly in good condition, but there is some ground movement near the middle of the short line. The tramway is within the Harbour Cone property, but the kiln is in the neighbouring property owned by the Otago Peninsula Trust.

The tramway is in open grazed pasture, and consists of robust earthworks. Some soil slipping is apparent near the central section of the tramway. This may continue, and stock damage from cattle is possible.

Condition:	Good. Minor slumping.
Threats:	Slumping. Heavy stock may exacerbate.
Tree management:	N/A

Figure 44
The tramway formation I44/81 (on left of image) leading around to Limekiln I44/84.

Figure 45
The small quarry at the head of tramway I44/81.

I44/85 Lime Kiln & Limestone Quarries

The Lime Kiln structure is considered in detail in Section 6 Large Stone Structures.

This is the lowest of the three Sandymount limestone kilns. The other two (I44/83, I44/84) are well-known, as one is beside Sandymount Road and the other is visible from above (see Figure 44) and is reached by a marked track, but the lowest of the three was built first, probably in 1865, to test the local limestone. While the two upper kilns were built using dressed masonry, the lower kiln is of much coarser construction.

Walter Riddell noted in his diary as early as April 1865 that he had worked with McDonald for two days, helping him test his lime (Riddell : 22/4/1865). James McDonald was 29 when he came from Scotland and with Riddell's help built his first kiln down in Stewarts Creek within the Harbour Cone Block boundaries. The other two kilns were built later, and are outside the block, although the tramway (I44/81) to the middle kiln (I44/84) is within the block (see above).

The overall site consists of five main components: the kiln, tailings dump, working discard area and two quarry areas (Figure 48), on the true left bank of a small stream. The condition of the limekiln itself has recently been considered in detail (Murray & Griffiths 2019), and is discussed in depth in Section 6 below. The overall site is described here.

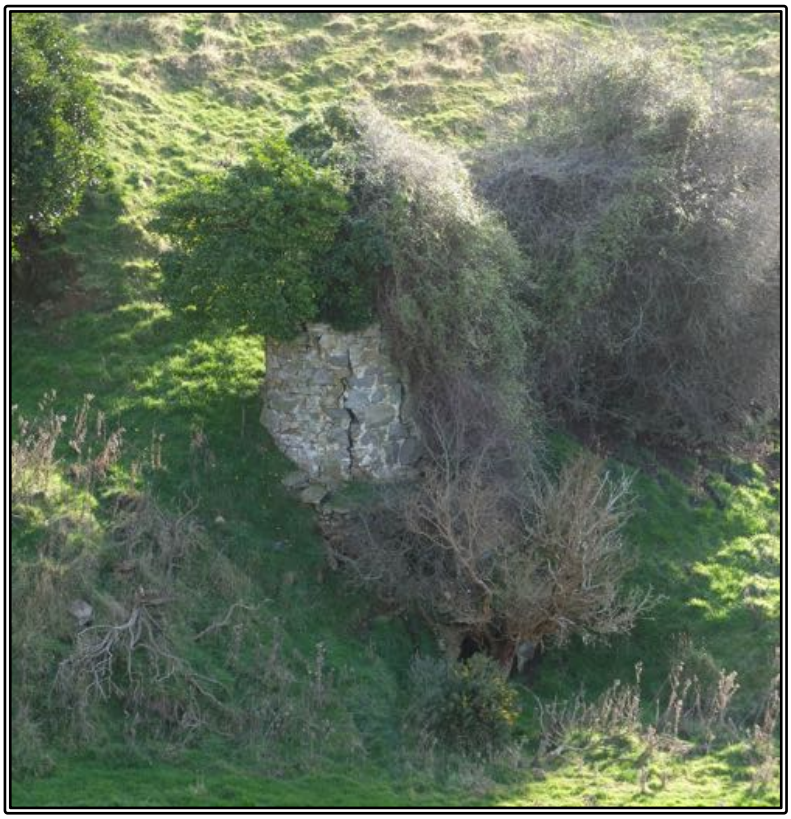

Figure 46
The bottom lime kiln (I44/85), set into the hillside and presently overgrown.

Figure 47
The main charging bowl of the lime kiln (I44/85).

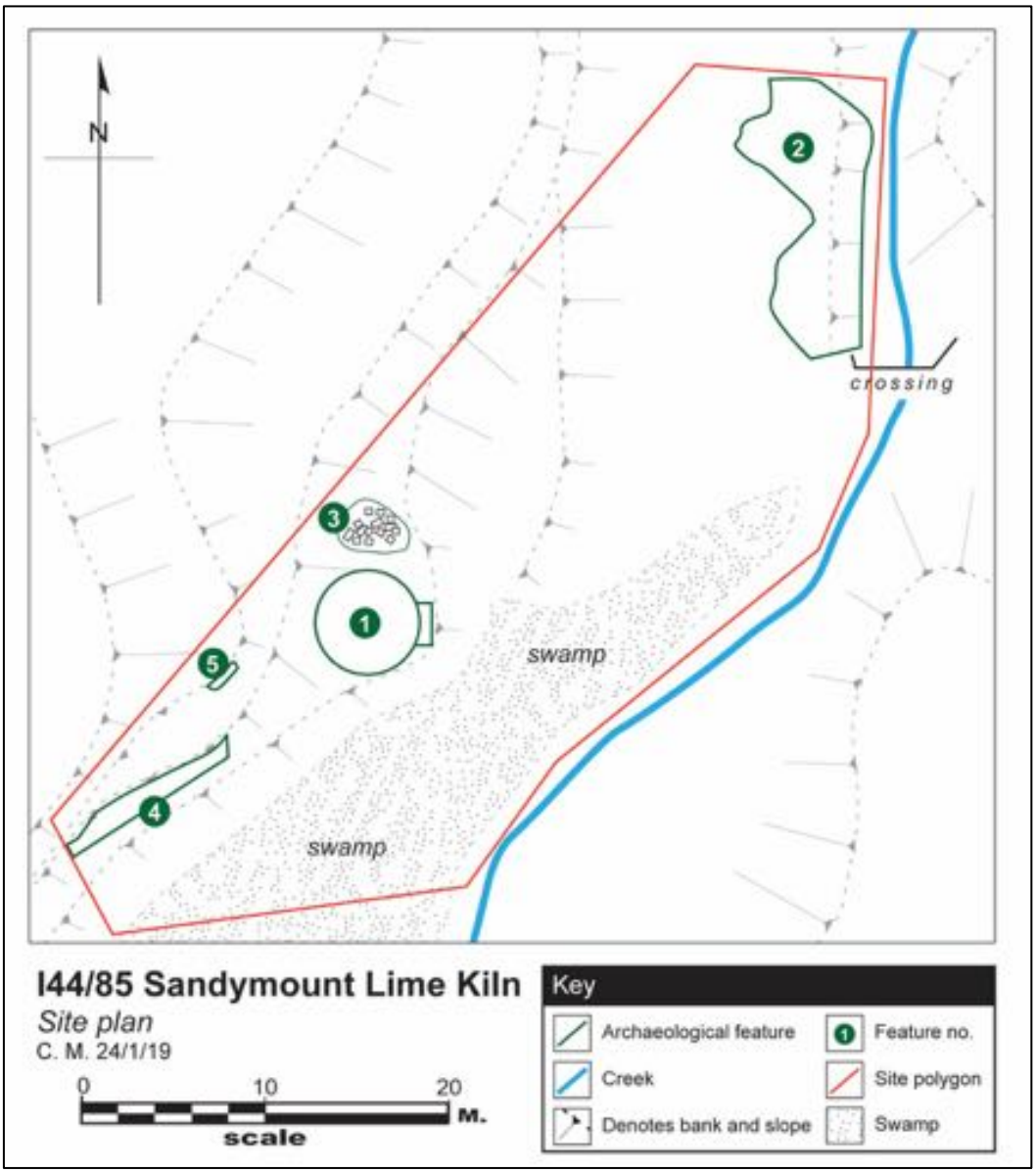

Figure 48
Plan of lime kiln and associated quarry and dump sites. 1: kiln. 2: tailings dump. 3: working discard area. 4, 5: quarry areas (Carl Murray, in Murry & Griffiths 2019).

1. The kiln is a cylindrical masonry structure constructed from local limestone, volcanic tuff and brick. It is built in to the hillside, so some of the structure is underground. Overall it is 5.84m tall, and has several trees growing out of the structure. It is described fully in Section 5 below.
2. The tailings dump is approximately 25m NE of the lime kiln on the stream bank, and is 16m long and 10m wide. It is partly overgrown and buried, and probably extends further. The matrix is a light grey colour and includes fragments of unburnt coal and cobble sized limestone fragment. A steel pin approximately 30cm long and 3cm wide was observed set into the southern face of this feature.
3. The working discard area is approximately five metres in diameter and is located five metres north of the lime kiln on the east facing hillside, below a flat working bench.

Quarried limestone is observable in this area. Several blocks of limestone exhibited fine dressing likely for use in the lime kiln structure.

4. A large limestone quarry is located approximately 15m south-west of the kiln, and is approximately 15m wide by 7m high. The quarry could extend further south however this area was obscured by vegetation. Large quarry cut limestone boulders are scattered around the base of the quarry.
5. Approximately 10m south-west of the kiln is a smaller limestone quarry, approximately 1.8m wide by 1.2m high. Tool marks are visible on the top of the outcrop and other markings are likely tool marks which have been weathered. The outcrop is above the charging bowl of the lime kiln and is possibly a remnant of the main outcrop used to quarry limestone.

Figure 49
The tailings dump (Feature 2) near the limekiln (Carl Murray),

Figure 50
The pile of quarried limestone near the kiln (Feature 3) (Carl Murray),

Figure 51
The main limestone quarry, with jumbled large blocks of limestone (Carl Murray).

Condition:	Kiln: Moderate, with severe cracking, requires intervention. Site: Good.
Threats:	Stock trampling, especially cattle around lime kiln base and sides.
Tree management:	Vegetation growing in and round kiln requires removal, but this needs careful management to prevent mechanical damage.

I44/416 Stewart's Farmstead

Stewart's house is described in detail in Section 5 Timber Buildings.

In 1866 Robert Stewart joined Riddell and Roger, buying up 71 acres (sections 37 and 38, Block II, Otago Peninsula SD) for £63 in the head of the creek that became named after him (Otago Land Deeds, 166/359). An outcrop of limestone runs diagonally from deep in the gully up the ridge along which Sandymount Road would eventually be formed. This was the first outcrop that James Macdonald worked the year before in 1865, and where he got Walter Riddell to help him to build the first kiln. The notable thing was that Robert Stewart built deep in the gully, possibly because he thought that the presence of the lime outcrop and kiln indicated that Sandymount Road might be formed down his gully out to Hoopers Inlet. There is a well-benched track to his house (I44/417), known locally as Stewarts Road.

Robert Stewart was listed in 1882 as freeholder of 71 acres, valued at £800 (Government Property Tax Dept. 1886), indicating that the family had not yet started buying up other farms. According to cemetery records, Robert died in 1913 of cardiac disease and pleurisy. By 1935, William Stewart held Sections 37, 38 and 39, the latter having belonged to Stephen Ellis in the 1800s. He passed these on to his son Ronald in 1956. Ronald was the descendent who moved up to live in the Roger's house (I44/415) when his family began to buy up the neighbouring dairy farms and converting to sheep (Brendon Cross: pers.comm.).

Stewarts farmstead is located on the valley side, on a series of terraces stepping down the slope. The site consists of a large stand of macrocarpa trees, the overgrown remnants of the garden and hedges, a timber house in poor condition, and the foundations of several other buildings including a large cowshed. The farmstead is reached by Stewart's Road (I44/417), which runs down from Sandymount Road. The final section of this road into the farmstead has recently had a fenceline run down the middle, restricting vehicle access to the farmstead.

The wooden house is described in detail in Section 5 below. On the west side of the house, on the same terrace level, is a brick foundation for another structure. To the east of the house is a small square collapsed structure, visible in the 1942 aerial photo. To the south east of the house, on the next terrace level up, are the concrete foundations of a large cowshed with an attached plant room that still contains a single cylinder stationary engine (probably for powering milking equipment).

Condition:	House, moderate to poor (see Section 5). Overall site good.
Threats:	Treefall on house. Stock in house. Fossicking/theft (engine).
Tree management:	Prune marocarpas, with greatest priority on those that threaten house. General vegetation control around house.

Figure 52
Stewart's farmstead in 1942. The house (centre) cowshed (below right of the house), outbuilding and gardens can all be seen.

Figure 53
Stewart's farmstead viewed from Highcliff Road across the valley. The small house is dominated by the overgrown macrocarpa shelterbelt and garden.

Figure 54
The old drive into Stewart's farmstead, with a new fenceline down the middle.

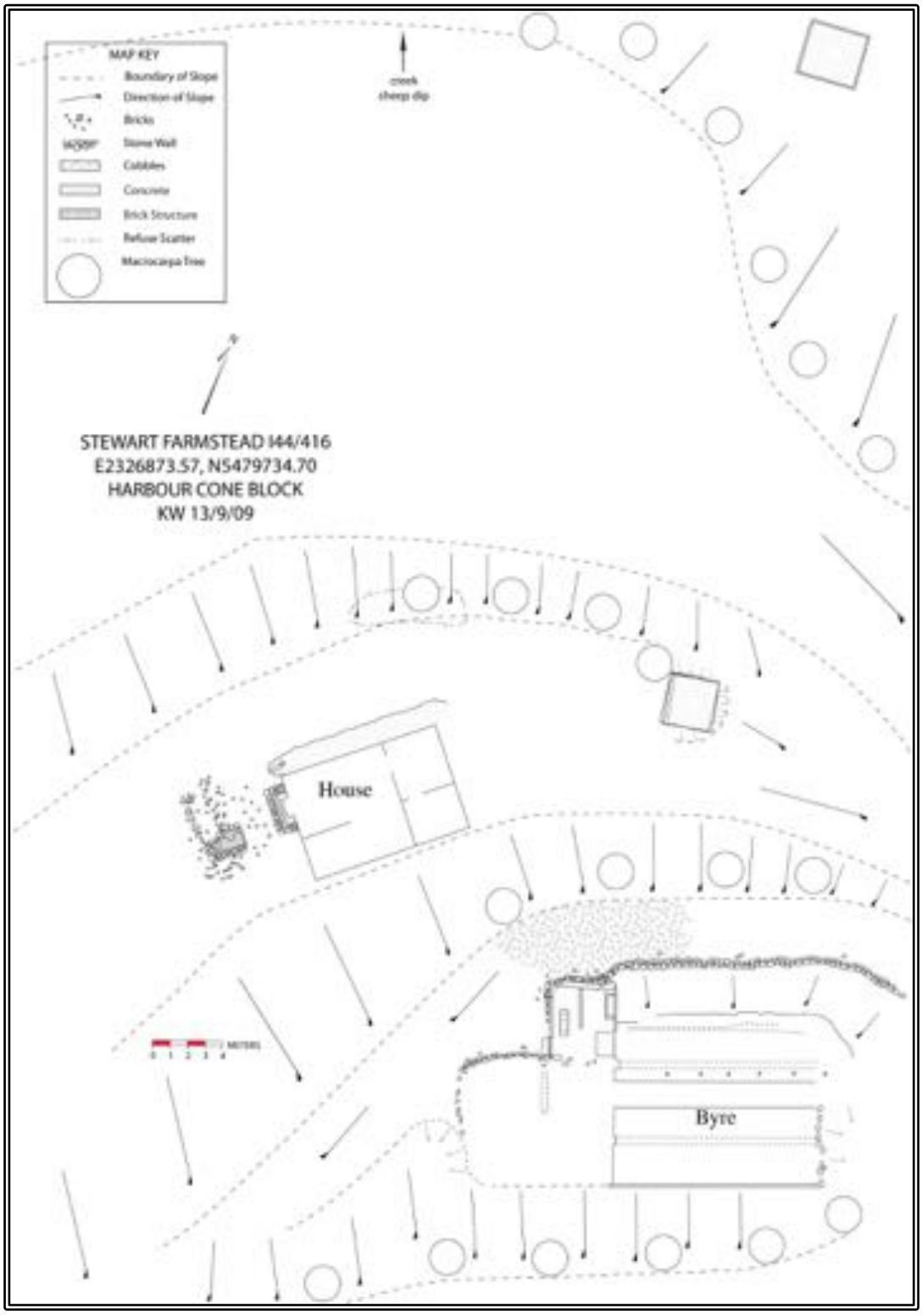

Figure 55
Plan of Stewart's farmstead (Kirsa Webb).

Figure 56
Stewart's house, with the brick foundations of another building in the right foreground.

Figure 57
The site of Stewarts byre or cowshed, with the concrete floor and foundations of the engine room to the left.

Figure 58
The single cylinder engine in the engine room of the byre Stewart's farm. This suggests that the byre was equipped with powered milking equipment.

I44/417 Road to Stewart's Farmstead

This road runs from Sandymount Road close to the point where the Sandymount school once stood, down to the Stewart house. Only the lower part of the road lies within the Harbour Cone Block, but the road does provide access to Stewart's farmstead which is within the Block. The three limekilns are clearly visible from this road.

The road is benched into the true right of the same valley in which the Sandymount lime kilns are located. It is maintained as a farm access road by Brendon Cross (who leases the land on both sides of the boundary). A recent washout in the road was repaired in the last 12 months. The road is usable by farm vehicles and four wheel drives.

I44/415 Roger's Farm

Roger's house & byre are described in detail in Section 5 Timber Buildings.

Robert Roger came to New Zealand in 1858 with his wife and son, and bought 116 acres in 1866 (old sections 56,57,58. Block 11, Portobello S D). His sections ran up on to the high ridge between Peggys Hill and Larnach Castle and steeply down into the heads of both Smiths and Stewarts Creeks. When he bought his land the Highcliff Road had yet to be formed.

As well as joining Riddell in establishing the dairy cooperative, Robert Roger worked actively for the district, serving on the local committees from the North East Harbour Road Board to the local school. The Rogers contributed to Sandymount School as parents of 10 children. Like Riddell, in the 1870s, Robert Roger was employed by Larnach as a carpenter (Sneddon 1997:81).

In October 1879, Roger advertised in the *Otago Daily Times* that he wanted "Pit Sawyers to cut from 10 to 12 thousand feet of boards and scantlings. For particulars apply to Robert Roger, near Sandy School, Peninsula" (ODT 22/10/1879, Page 1). If he built his byre during the summer of 1880, he was lucky not to lose it in the bush fire of October 1881, when he did lose his stables. He is also recorded as having sold pigs, as it was usual for small dairy farmers to raise a few pigs on the skim milk which was returned to them by the creamery. This may account for the stone ruin in one corner of the site, distant from the house.

Figure 59
Detail of 1942 aerial photo showing Roger's farmstead. The byre is the upper building and the house the lower. Highcliff Road winds through the bottom of the image.

Roger was involved with the Pioneer Cheese factory and the dairy cooperative , the Taieri and Peninsula Milk Supply Company. He became a director on the board of the latter in

October 1895 (ODT 13/8/1905 p10). He was still a company director when he died suddenly in 1905 from a stroke or heart attack while driving to Dunedin with his neighbour's son, John Riddell (ODT, 26/6/1905. p.6). The family presumably remained on the farm, since when his widow died in 1926 (82 years old) and son Robert in 1935 (65 years), their address was given as Sandymount (ODT 22/6/1926.p.8 & 7/10/35, p.8).

In the middle of the 20th century, the Stewarts next door bought the Roger farm and moved up from Stewarts Creek to live in the house at Roger's farmstead. This is the only house on the Harbour Cone Block which was lived in until the 21st century, leased out finally by the Maori corporation, Akapatiki A Block.

Roger's farm lies to the north-east of Highcliff Road on ridgeline below and east of Larnach's farm buildings (I44/412). The road recorded as I44/413 leads from these buildings to Roger's farm and the Highcliff Road. William Leslie (n.d.) described this house as the 'top Rogers' to differentiate this farmstead from the 'bottom Rogers' further down Highcliff Road towards Portobello (outside of the Harbour Cone Block).

The farmstead site is occupied by three buildings (two old, one new) and a set of stockyards. The yards and the modern woolshed are in use, and are the main buildings of the present farming operation. The other two buildings are a house and a byre, both now unused. They are both described in detail in the 'Timber Buildings' Section 5 below. To the east of the buildings and yards there is a flat paddock on the end of the flat spur, and on the northern edge are the remains of several small structures and a partially collapsed stone wall. These are presumably the remains of small farm enclosures and sheds (including a pig sty). There are a number of large trees on this spur, but none are close enough to threaten the standing structures.

Condition:	Byre reasonable, House poor (see Section 5). Overall site reasonable.
Threats:	Modern farming requirements. Deterioration of buildings.
Tree management:	Maintenance of large trees. Not urgent.

Figure 60
Remains of stone wall or enclosure, east end of Roger's farmstead site, with the modern woolshed in the background.

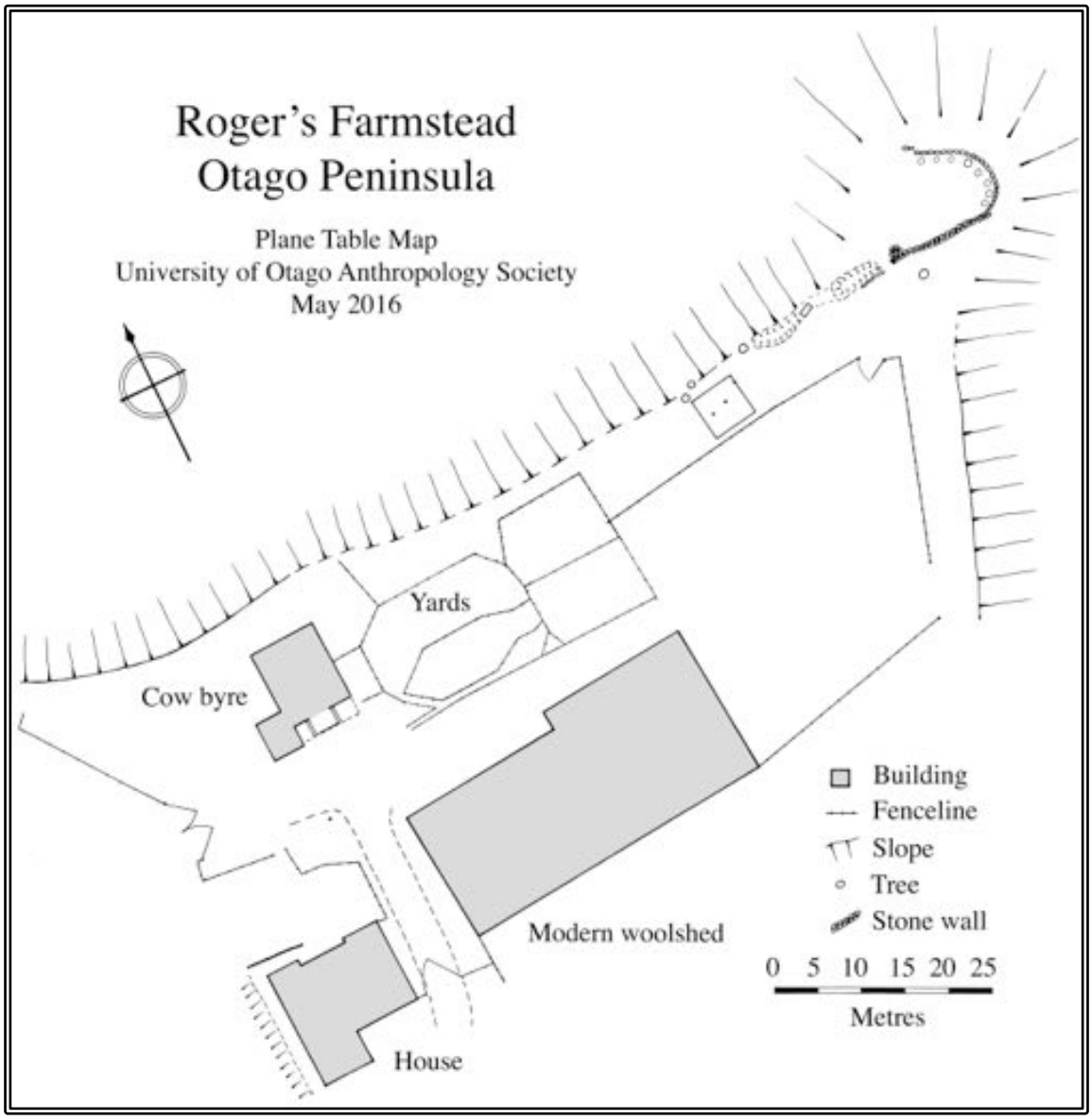

Figure 61
Map of Roger's farmstead.

I44/418 Ellis Farmstead

Stephen Ellis could have brought different farming methods to the district, as unlike his Scottish neighbours he was an Englishman from Matching, Essex. He appears in the Portobello Cemetery records as dying in 1906 at the age of 73, His wife Catherine died in 1922, aged 77. Their children appear in the Sandymount school rolls. One son, Stephen, died in 1897 aged 19. The Ellis family seem to have been close to the Rutherfords to the east of them. The youngest Ellis daughter was named Janet Drew Ellis, Janet Drew being the maiden name of James Rutherford's wife. The youngest Ellis son was James Rutherford Ellis, and reciprocally the second Rutherford son was named Stephen Ellis Rutherford

The site of the Ellis house is marked by a stand of macrocarpas below Highcliff Road, with a benched track (still in use as a farm track) lading down off the road. There is no obvious building platform, but there is some evidence that some bulldozing has occurred here in the past. Scattered artefactual material is consistent with a nineteenth century domestic occupation. It s possible that the house site is damaged, obscured by vegetation, or that the house was on piles allowing it to stand on uneven ground.

Condition:	Trees good, site possibly disturbed (sub-surface evidence probably present).
Threats:	None anticipated.
Tree management:	Maintain macrocarpas (not urgent).

Figure 62
The site of Ellis' farmstead (I44/418), indicated by the macrocarpas below Highcliff Road.

Figure 63
A 'black' bottle base at the site of Ellis' farm (I44/418). This type of bottle is typical of the later nineteenth century.

I44/419 Pemberton's farm

John Pemberton took up title in 1866, the same year as Stewart and Roger, further north along the ridge from them. He took up only one section of 37 acres (old section 40), not realising that four years later the road to Portobello would run the length of his farm. It is no wonder that in the 1890s, Neill (1901) records two buildings (I44/1036) on the other side of the road from the presumed farmstead in the macrocarpa stand. Pemberton died only seven years after taking up the farm of tuberculosis, aged 43, leaving a widow and four young children. The property was later occupied by Greg Grainger. The Grainger children appear in the school rolls of the 1900-1909 period, Edward, Ivy and Thomas (Seaton nd:14). William Leslie remembers one of them as running a three-horse bus and a bread and meat delivery, but Edward Grainger was a also dairy farmer, judging by the weekly market reports from 1892-1923 reporting him selling cows, heifers, pigs and bulls.

The 1901 Neill map identified two structures in the farmstead (and as, discussed below two buildings across the road, now I44/1036).

The Pemberton house was located within a stand of macrocarpas beside the Highcliff Road on the saddle where the road crosses the main Peninsula spine ridge. Middleton in 2008 thought that site appeared to have been recently bulldozed or cleared. Some evidence of a cut terrace in the corner of the area within the trees may indicate where the house stood.

Condition:	Trees good. Probably sub-surface evidence.
Threats:	None presenlt identified.
Tree management:	Maintenance (presently in good condition)

Figure 64
The site of Pemberton's farm (I44/419) amongst the macrocarpa trees to the right of Highcliff Road/ This is the place where the road crosses the saddle in the spine ridge of the Peninsula.

Figure 65
Pemberton's farmstead site, surrounded by mature macrocarpa trees.

I44/1036 Building Terraces, Highcliff Road Saddle

Neill's 1901 map showed two structures on the saddle beside Highcliff Road opposite Pemberton's farm. The nature of these structures was not noted, but it is probable that they were associated with Pemberton's farmstead (on whose land they were on), as Highcliff Road (which separates them from the rest of the farmstead) was not constructed until 1870, four years after John Pemberton took up the land.

The site today consists of a level terrace cut into the ridgetop (just to the west of where the road crosses the saddle) that measures 16m by 5m, with evidence of stone cobbling or revetment at the northern end.

Figure 66
Terrace I44/1036. Some stone revetment or paving can be seen in the foreground.

Condition: Sub-surface.
Threats: None known.
Tree management: N/A

I44/420 Arnott's Farmstead

David Arnott was born 1837 Linlithgow, Scotland, and came to New Zealand in 1860 and married Elizabeth about 1864. They lived at first at Taieri Beach and had nine children between 1865 and 1887 (Otago Peninsula Museum and Historical Society archives). According to Hardwicke Knight (1978), David Arnott (senior) was Larnach's stonemason.

David Arnott bought only 14 acres, the upper end of section 42, for £150 in 1869 (Land Transfer Deed 57/774), and still held it in 1882 when the list of freeholders was compiled (Government Property Tax Dept. 1884). Walter Riddell records building Arnott a house in

1870 in only two and half days, indicating it was probably a fern tree cottage. Arnott is listed as "farmer", in the 1882 list of freeholders on land worth £250 rental value (Government Property Tax Dept. 1884). In the map of 1863 (SO1327), David Arnott's access is marked as only an impractical paper road. He must have formed a benched track on the contour out to Highcliff Rd some time before 1869 as a track is clearly marked on William Hunter's Deed (30/55, dated 17/12/1869) and is still visible today (site I44/142). This track runs for most of its length across Pemberton's section 40, and meets Highcliff Road opposite Pemberton's trees. Presumably there was some private agreement which never reached the modern cadastral maps. Arnott lost his stable, byre and some fencing in the bush fire of 1881, but he was insured for £50 which would have helped him rebuild his property. The property was eventually acquired by the Nyhons, who expanded their holdings in the area to include Larnach's farmstead site (I44/412), and Pamberton's, Arnott's and Hunter's properties. Arnott's farmstead site was used for a set of stockyards, the track out to Highcliff Road making it suitable for trucking out fat lambs.

The Arnott house was marked on Neill's 1901 map but was not named. Neill showed only a single structure within a stand of trees, but the archaeological evidence is for a more extensive farmstead complex, including a farmhouse and what was probably a large cow byre. The 1942 aerial photo shows the macrocarpas and byre foundations, although the house had gone by then.

Figure 67
Arnott's farmstead as it appeared in the 1942 aerial photograph. The rectangular enclosure of macrocarpas (lower right) contained the house, while the foundations of the cow byre can be seen in the centre of the image. The stone wall I44/102) is in the top of the image.

The Arnott site today is marked by the stand of mature macrocarpa trees on the broad ridge to the north of Highcliff Road, with a clearly defined benched track (I44/421) leading from the road to the trees. Only about half of the house enclosure trees remain standing, the rest having been felled (and some stumps bulldozed) when the area was converted to stockyards. Within the trees the remains of the house consists of a set of concrete steps and stone chimney foundations. Along the outside of the western side of the enclosure trees (this line of tress are still extant) is a stone wall in poor to moderate condition. This was identified by Higham (1986) as Wall 5. To the north of the enclosure is the floor of what was probably the cow byre, with stone revetting along the lower edge.

Further north again along the northern boundary of Arnott's land (Section 42) is a stone wall (I44/102) (see below).

One of the marked public walking routes passes through the farmstead site, and uses the access track (I44/421).

Condition:	House site disturbed but intact features. Stone wall in poor to moderate condition. Byre site only, revetment in moderate condition.
Threats:	Stock on revetment. Tree branch fall.
Tree management:	Macrocarpas require maintenance (not urgent, but public regularly walk past site along marked track.

Figure 68
Arnott's farmstead site (I44/420) with the trees of Larnach Castle on the skyline behind.

Figure 69
Map of Arnott's farmstead site (I44/420) by Kirsa Webb.

Figure 70
The site of Arnott's house (I44/420), with a stone foundation at left and steps at right.

Figure 71
Stone wall at Arnott's farm (I44/420) (Higham wall 5).

Figure 72
The stone revetment supporting the terrace of Arnott's byre (I44/420).

I44/421 Arnott's Road

A formed road or track runs from Highcliff Road to the site of Arnott's house. For most of its length it runs across what was Pemberton's property (Section 40). No legal corridor now exists, but a surveyed roadline did exist north of here, as shown in the 1888 plan of the subdivision of Larnach's Camp Estate (Misc-1). It is likely that this was a route down the valley of Smith's Stream, with a branch to the west also shown on the plan that climbed along a ridgeline up to meet the boundary now defined by stone wall I44/410 (see above).

The track passes Arnott's farmstead trees (I44/420), passes through the site of the byre, and then continues along the ridge to a gate in the boundary stone wall (I44/102). The modern farm gate is located to the east of this original gateway.

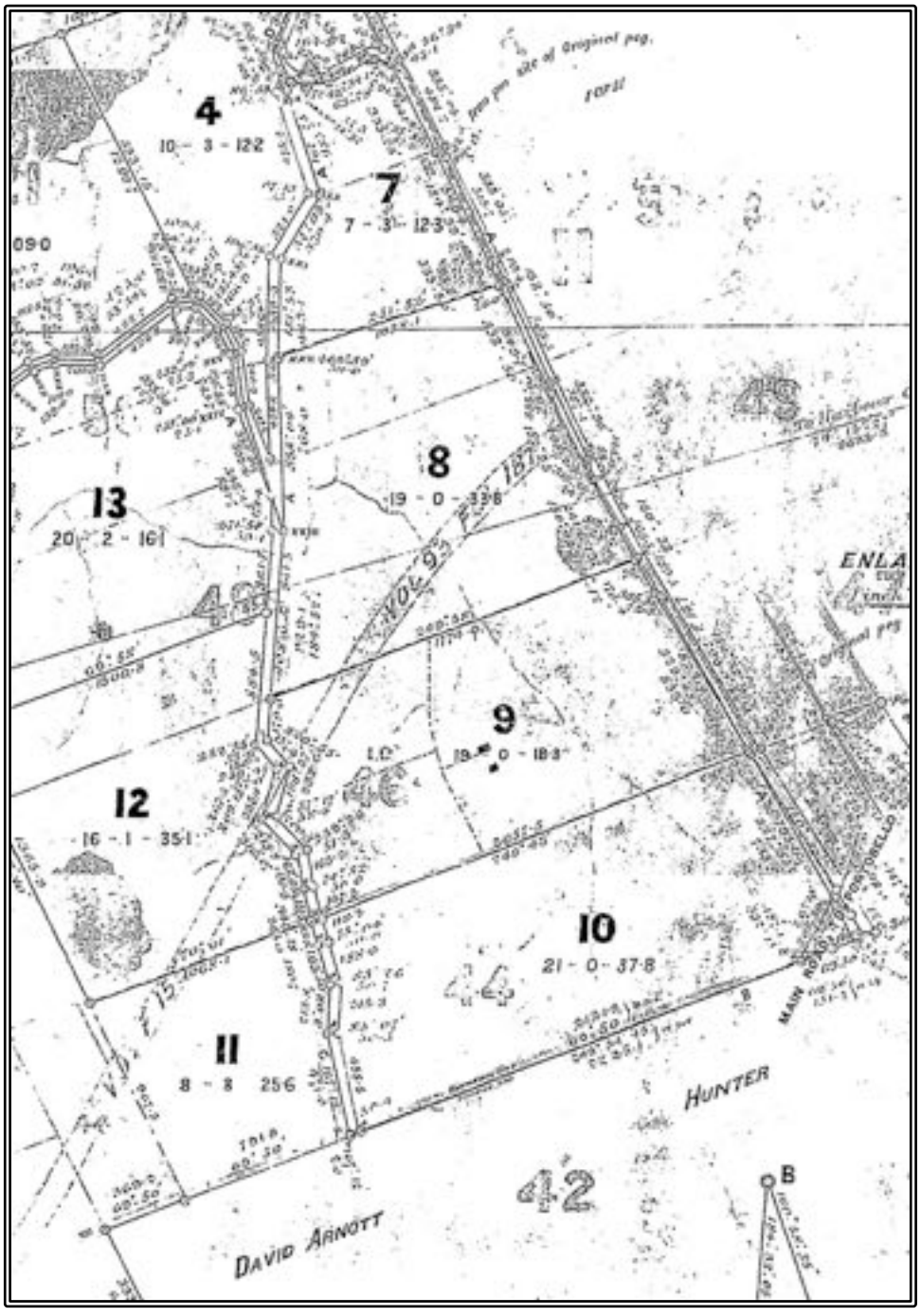

Figure 73
A detail from the 1880 plan of the subdivision of the Camp Estate, showing a roadline running north from Arnott's property, to meet the bottom loop in what is now known as Bacon's Track (I44/442).

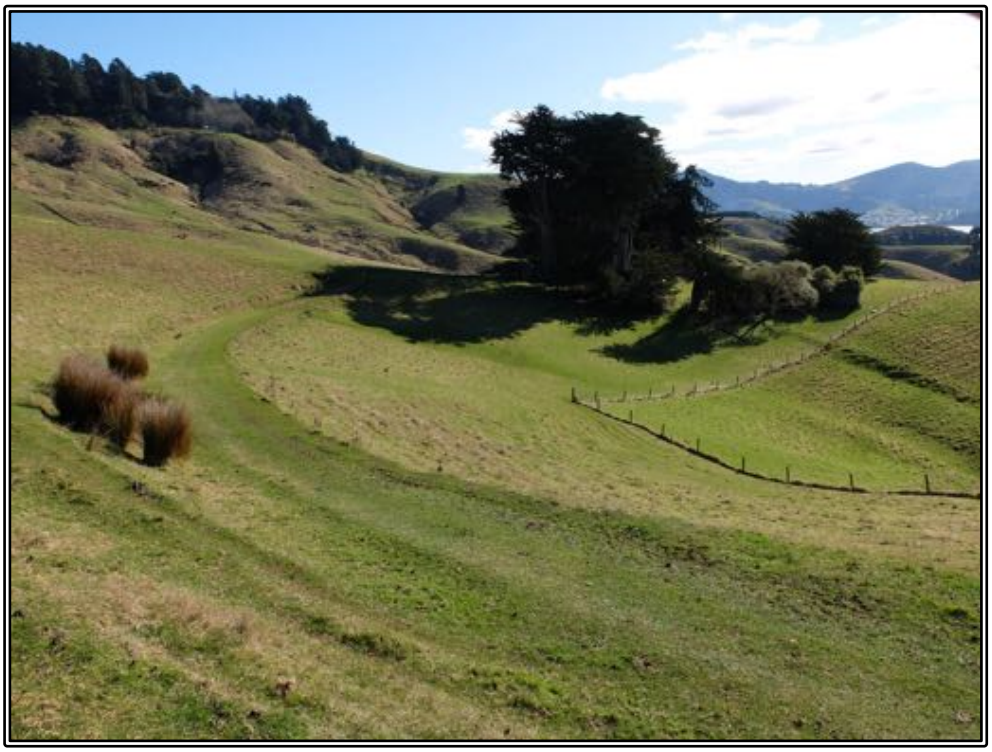

Figure 74
Arnott's Road (I44/421) leading from Highcliff Road to Arnott's farm (I44/420), and then carrying on down the ridgeline.

I44/422 Ruins of Hunter's house

In the 1870s William Hunter bought 20 acres on the lower slopes of Sec 42 (Deed 57/774, 27/4/1877, National Archives) in the head of Smiths Creek. Unlike most of his neighbours, he built in stone. He was listed as settler rather than farmer in the 1882 list of freeholders, on land worth £300 rental value (Government Property Tax Dept. 1884). Since his house is named on Neill's 1901 map, he was presumably still there around 1898 (when the field survey was carried out). The lack of trees suggests that there was no need for shelter for animals, and yet in 1870 Riddell made a churn for him for £1 (Riddell diary 8 October). Since Hunter was a bachelor the school rolls do not provide evidence of occupation of the farmstead. Stones Directory did not list him in 1905, even though his neighbours Arnott, Grainger and Nyhon were included. The 1942 aerial photograph shows that the house was a ruin by that date.

The ruins of Hunter's stone house are on a terrace cut onto the nose of a gentle ridge below the Highcliff Road. The structure was L-shaped, with maximum dimensions of 9m by 7.4m. The walls are 450mm (18 inches) thick, and stand to a maximum of 1m high. The stone appears relatively soft, and many of the blocks have been cut into regular shapes, and the walls appear to have been carefully built. Leslie noted in his handwritten manuscript (n.d.-a) that this house was of soft local stone, and had no trees around it, with little of it left standing at the time of writing. The lack of trees is supported by the archaeological evidence, as there are no stumps or other evidence of plantings around the house.

A second small terrace (6m by 2.5m) with a revetted upper face is located 21m downhill from the house ruin.

Condition: Stone ruin, standing to 1m.
Threats: Stock.
Tree management: N/A

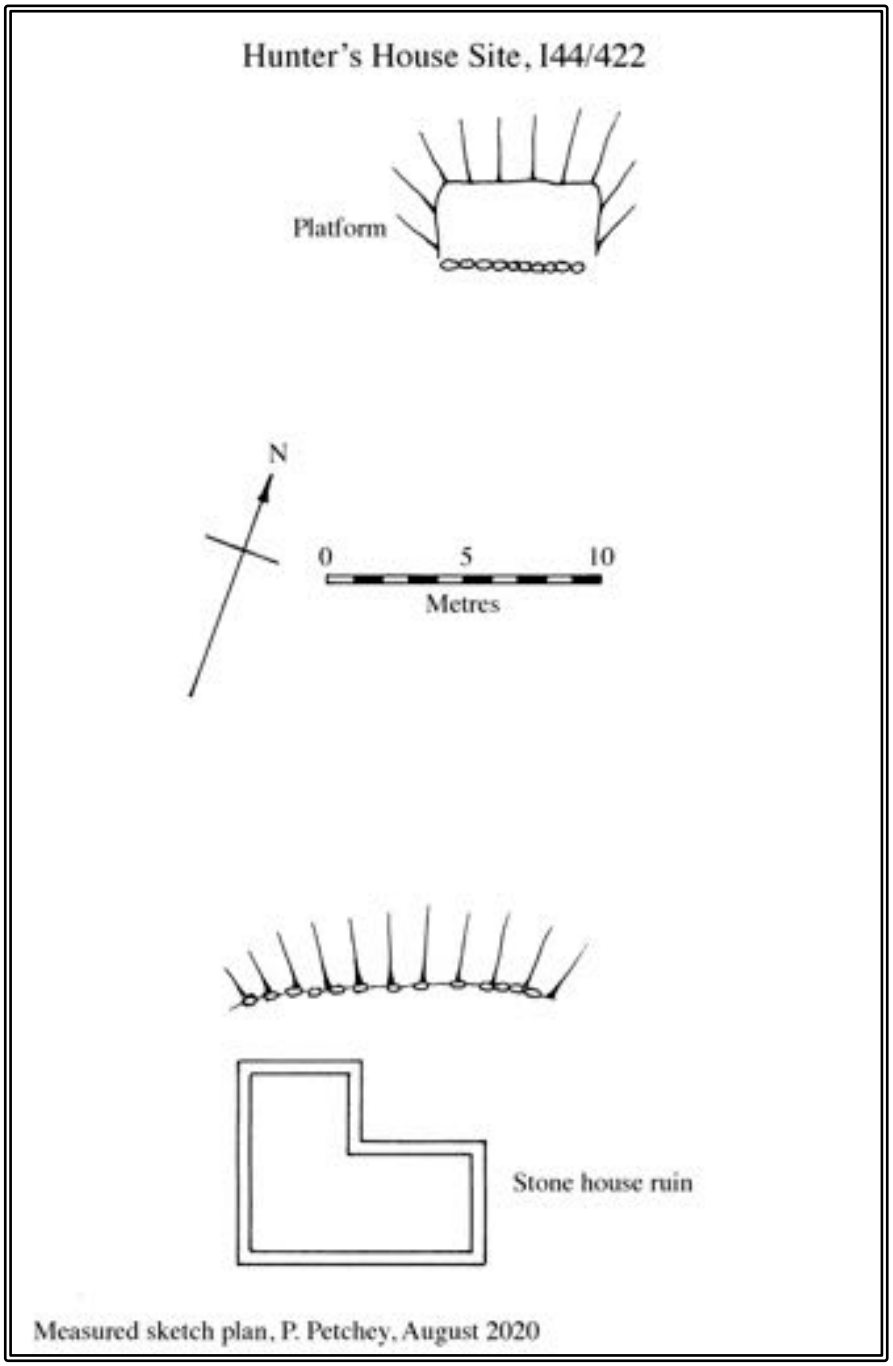

Figure 75
Plan of Hunter's house site, I44/422.

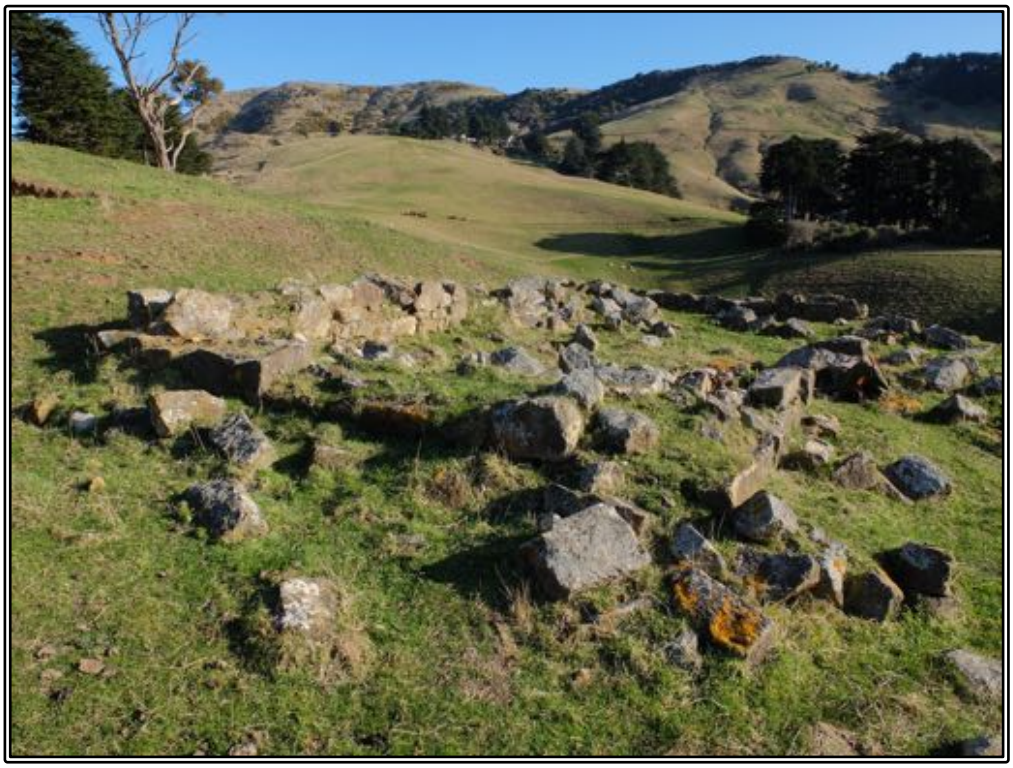

Figure 76
The ruin of Hunter's house, I44/422.

Figure 77
A detail of the west stone wall of the ruin of Hunter's house, I44/422.

I44/102 Stone Wall/Fenceline (Arnott/Hunter north boundary)

This wall runs along the boundary between Sections 42 and 44 (the northern boundary of the sections held by Arnott and Hunter). Hardwicke Knight recorded this stone wall as an archaeological site in 1974.

The stone wall is not continuous as several sections have been dismantled, and others possibly never built, and in these places conventional wire fencing has been used. The western (longest) extent is identified by Higham (1986) as Wall 4, while wall number 4A is located to the east below Highcliff Road. The condition of the wall varies from very good to very poor.

Condition:	Variable from good to poor.
Threats:	Heavy stock.
Tree management:	N/A

Figure 78
Wall I44/402 downhill from the gate end shown below, as it appeared in 1986 (Higham 1986 Wall 4).

Figure 79
Gate end in stone wall I44/402 taken by Higham in 1986 (Higham 1986, Wall 4).

Figure 80
Gate end in stone wall I44/102 (Higham wall 4). It is the same gate end shown in the previous image, and it can be seen how the wall is leaning slowly to the left (south).

Figure 81
Stone wall I44/402, where it descends from Highcliff Road (Higham 1986 Wall 4A).

I44/440 Stone Wall/Boundary Markers

This discontinuous stone wall was built along the boundary between sections 40 and 42, (Pemberton's and Arnott's/Hunter's properties). It is a mixture of structures including stone wall and boundary ditch. Higham (1986) recorded parts of the wall section as Wall 3B.

The highest section is a rough stone wall above the Highcliff Road, just below Rutherford's Road west, and it continues below Highcliff Road as a very rough wall (actually more of a linear stone pile). It then continues as a cut ditch above Hunter's house site (I44/422), and the alignment can be seen as a shadow in the ground running towards Arnott's farm (I44/420).

Condition:	Moderate to poor. Trench section good.
Threats:	Stock.
Tree management:	N/A

Figure 82
Looking along the line of the boundary. Higham wall 3B can be seen in the lower left, and the boundary line runs diagonally across the image towards Arnott's trees upper right.

Figure 83
Stone wall (Higham wall 3B) near the upper end.

Figure 84
The boundary line above Hunter's House (I44/422), here expressed as a boundary ditch.

Rutherford's Farm Sites

Rutherford's farmstead (I44/426) is located on a spur running east from the main Peninsula spine ridge, and it is associated with a complex of access tracks (I44/423, I44/425) and stone walls (I44/1018), which are also physically tied in with the access track(I44/424) to the Battery Creek gold mine (I44/88).

I44/426 Rutherford's Farm

James R. Rutherford was born in Lundie, Scotland, in about 1831, and was in New Zealand by the mid-1860s. In Dunedin in May 1867 he married Janet Torrance Drew. In 1866 Rutherford took up 21 acres on the Otago Peninsula (old Section 3 of 36), mostly on a ridge extending east into Stewarts Creek. In 1877 he is listed as one of the shareholders in Captain Leslie's cheese factory (Knight 1978:60). In 1883 he acquired title to Robert Dick's land to the north (western halves of old Sections 41 and 43), Robert Dick having died in 1876. In the 1884 list of freeholders, he is listed as settler, Sandymount, 71 acres (Government Property Tax Dept., 1884). He was one of the few settlers who built his house with the local stone (I44/426). In February 1887, a north west gale lifted the roof off "a large byre" on his property (Otago Witness, 11/2/1887, p.17).

James and Janet had six children. Janet died at Sandymount in 1906, and it likely that James continued to farm until about 1914-1916. He died in 1919.

Rutherford's farmstead is located some distance off Highcliff Road on one of the ridges that descends from the main spine ridge down to the east. The farmstead is marked by a large stand of macrocarpas planted within a stone wall enclosure in an L-shape. A single stone wall, standing approximately 2m high, is all that remains of the house structure. This wall includes a partial chimney and a doorway. To the rear of the farmstead (outside the house enclosure) there is a set of ruined stone farm buildings and a stone boundary wall. At least two structures are present, but they were not built parallel to each other, and more investigation is required to interpret the exact building phasing and layout. There is also an area paved with cobbles, and some loose pieces of dressed masonry.

Overall it is an impressive site, located on a spur with superb views, and with easy foot access along the well-constructed farm roads. The macrocarpas are quite majestic, but require maintenance as falling limbs pose a major threat to the stone ruins. The stone walls also all require stabilization.

Condition:	Reasonable. All stone walls require stabilization, repair & maintenance. Trees healthy but require heavy pruning to remove dead wood.
Threats:	Tree branch fall. Heavy stock.
Tree Maintenance:	Pruning of macrocarpas (important).

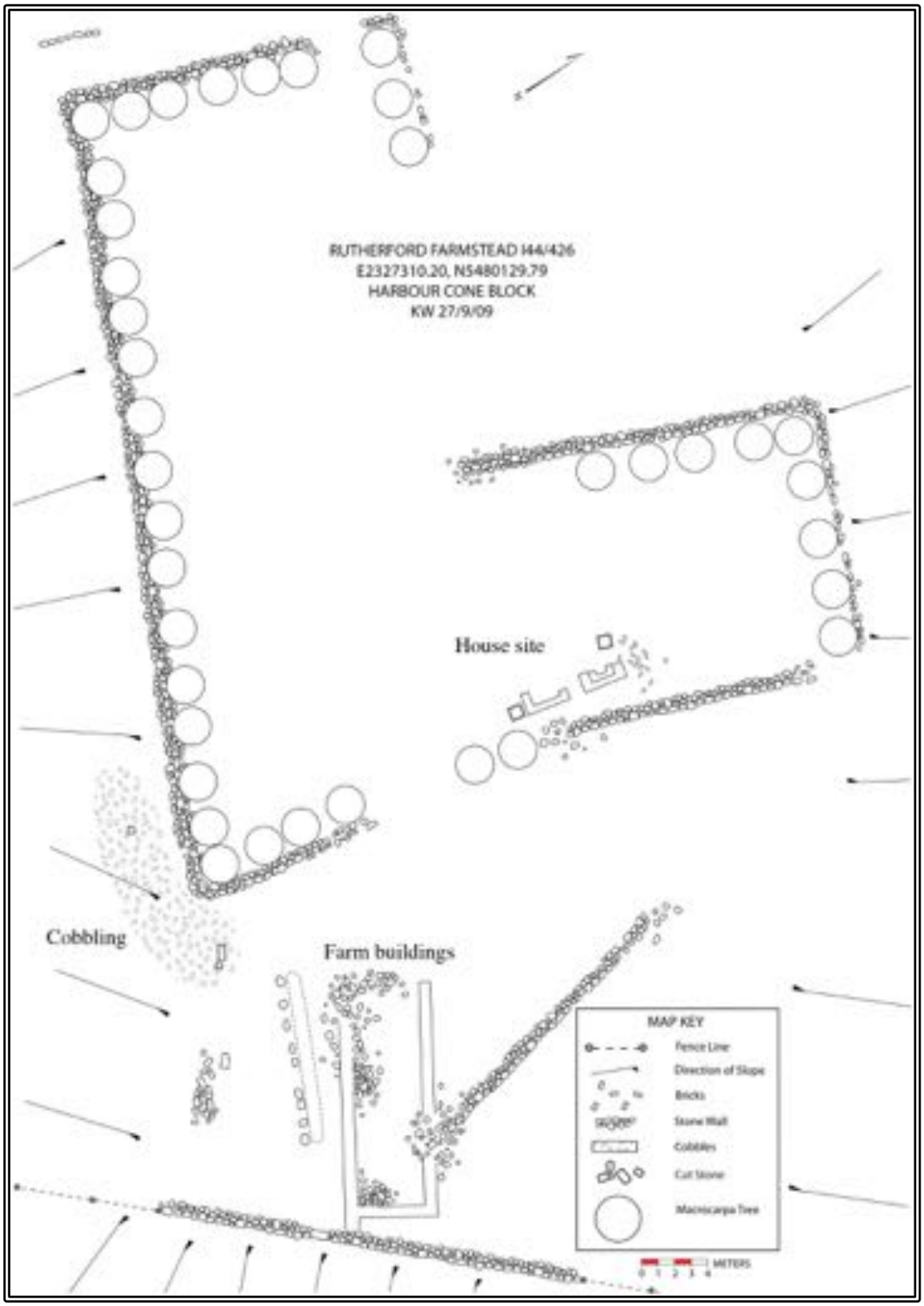

Figure 85
Plan of Rutherford's farmstead site (I44/426) (Plan by Kirsa Webb, with annotations).

Figure 86
Rutherford's farmstead (I44/426) amongst the macrocarpa trees at the end of a spur coming down from the main Peninsula ridge. Rutherford's Road leads down to the farmstead.

Figure 87
The ruin of Rutherford's house within the macrocarpa-enclosed farmstead site (I44/426).

Figure 88
The ruins of the stone farm buildings, on the east side of the main macrocarpa enclosure at Rutherford's farm (I44/426).

Figure 89
Another view of the ruins of Rutherford's farm buildings (I44/426).

Figure 90
A detail of an intriguing small window in the stone wall of Rutherford's farm buildings (I44/426).

Figure 91
Area of cobbles and dressed stone block beside Rutherford's farm buildings (I44/426).

I44/423 Rutherford's Road (East branch)

The road to Rutherford's farm and the Battery Creek gold mine turns off the Highcliff road in a rock cutting that is still in good condition, but is now fenced off. The road then zig-zags up the steep hillside (supported by areas of revetment, some of which has slumped). Near the top of the hill the main formation turns east (I44/424), and continues in a straight line towards the Battery Creek gold mine, along the boundary between Sections 3 of 36 and 41 (Nyhon's and Rutherford's properties). A short distance along this track, a fork goes off to the south east: this is Rutherford's Road (east) (I44/423). From the corner at the top of the zig-zag a third track branches off and also heads south east: this is Rutherford's Road (west) (I44/425). The two branches of Rutherfords Road meet and lead to Rutherford's farm. Stone walls are present beside the top of the gold mine road and Rutherfords Road west.

Figure 92
1942 aerial photograph, showing the complex of tracks associated with Rutherford's farm. The Highlciff Road is on the left, and the zig-zag track can be seen climbing up top left. The track to the Battert Creek Gold mine heads off east, along the top of this image. The two branches of Rutherford's Road lead south-east, before joining in the bottom right of the image.

Figure 93
Stone revetment on Rutherford's Road east (I44/423)

Figure 94
The stone revetments on the benched lower section of Rutherford's Road (I44/423) as it approaches Rutherford's farmstead (I44/426).

I44/425 Rutherford's Road West Branch)

This fork leads directly up and over the hill shortly after the beginning of Rutherford's road, just beyond the rock face. It follows the cadastral road line that was surveyed in 1863 (SO 1327), and may therefore be the earliest of the road formations in this cluster. When the road meets the steep side of a gully it skirts around this and sidles the hill in a rock cutting, to meet the east branch of Rutherford's Road (I44/423)

An impressive stone wall runs along the eastern side of the road while it is within the old cadastral road line (Higham wall 3, I44/1018).

Figure 95
Rutherford's Road west (I44/425) and stone wall I44/1018.

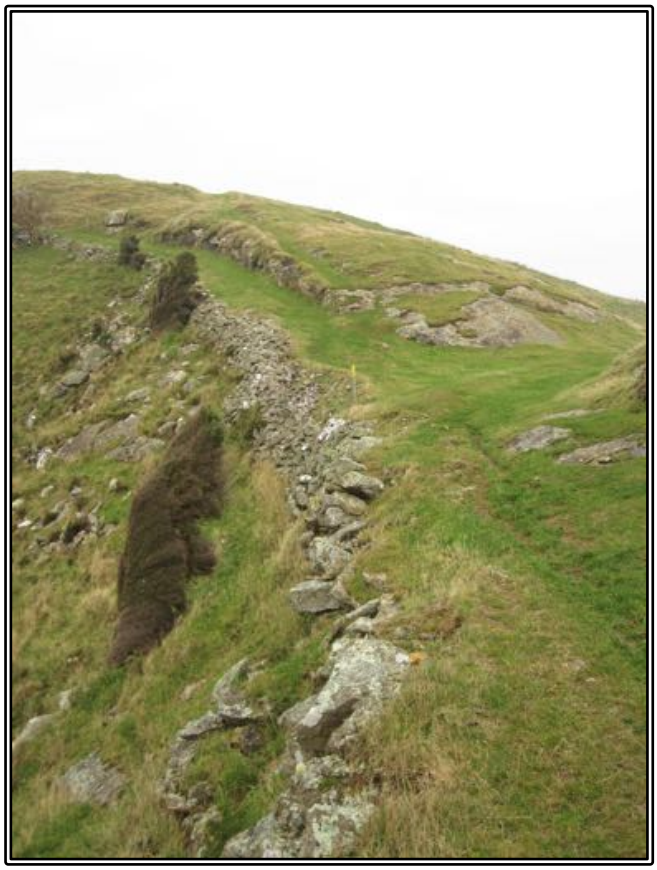

Figure 96
Rutherford's Road, where the two branches meet.

I44/1017 Stone Wall (beside gold mine access road)

A stone wall in moderate to poor condition runs beside the track to the gold mine (I44/424), along the boundary between Rutherford's and Nyhon's properties. The wall is only present across the top of the hill, and fades away once the track heads downhill. This was identified by Higham (1986) as Wall 3C.

Figure 97
Stone wall I44/1017 beside the track to Battery Creek.

I44/1018 Stone Wall (beside Rutherford's Road, west branch)

This stone wall runs beside the west branch of Rutherford's Road (I44/425). It runs across the flat top of the hill, and is one of the most impressive stone walls on the Harbour Cone block (rivaled only by the northern boundary wall I44/410). It is a well-made drystone wall with neatly-laid capping stones. Some of the wall is in almost perfect condition, but a some length has partially collapsed. It was recorded by Higham (1986) as Wall 3.

One of the marked walking routes on the Harbour Cone block runs along the adjacent roadline so the wall is highly visible to visitors. The combination of high quality construction, spectacular setting on the high ridge of the Peninsula, and high public visibility, make this wall a priority for potential stabilization and maintenance work.

Condition:	Mixed: very good to poor.
Threats:	Heavy stock.
Tree maintenance:	N/A

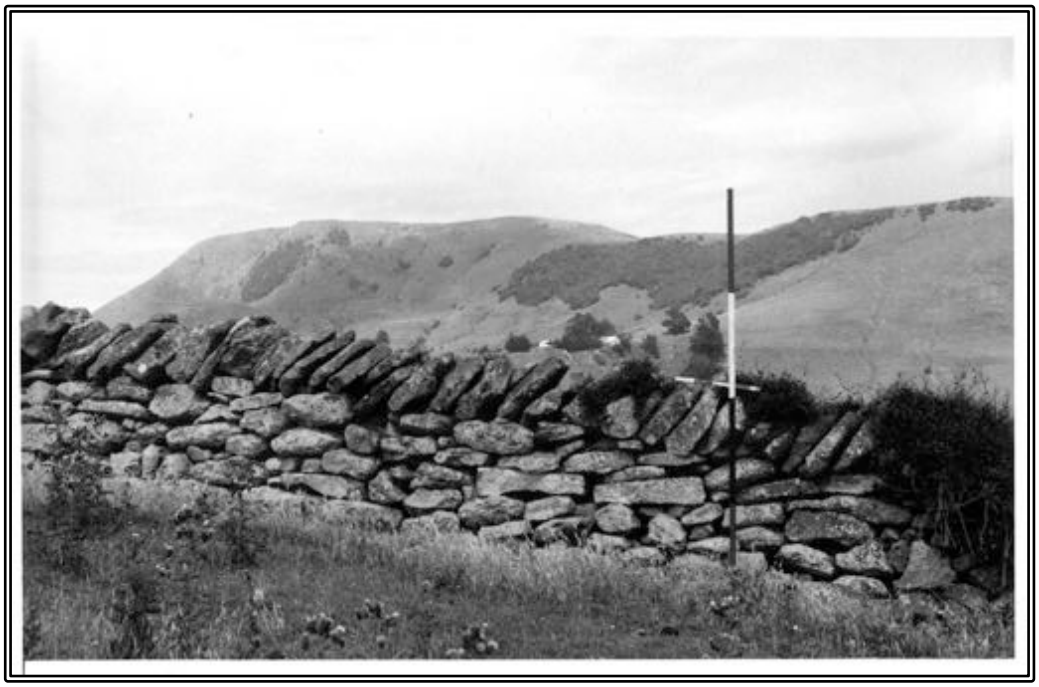

Figure 98
Stone wall I44/1018 (Higham wall 3) in 1986 (Higham 1986).

Figure 99
A well preserved section of wall I44/1018 (Higham wall 3) beside Rutherford Road west.

Figure 100
Stone wall I44/1018 (Higham wall 3), slightly to the east of the image above, showing a section where the wall has partially collapsed.

I44/427 Road /track from Rutherford's into lower gully

This road runs from Rutherford's road into the gully below.

I44/424 Track to Harbour Cone Goldmine

According to Higham (1986: 111, 144, 145), in 1874 a right of way was granted to the Hoopers Inlet Quartz Mining Company and the track likely to have been constructed by the employees of the company at about this time. The track leads along Battery Creek to the company's gold mine (I44/88, 543). It is highly likely that the substantial cutting off Highcliff Road that is the starting point for this track and the two branches of Rutherford's Road was actually built by the mining company. The heavy rock cutting would have been out of abilities or finances of poor hill farmers, and is more likely to have been constructed to allow machinery to be moved.

Higham (1986) identified the wall beside the upper end of the track as Higham Wall 3C. The wall also formed the southern boundary of John Nyhon's land.

Figure 101
Looking down the track (I44/424) to the Battery Creek gold mine (I44/88, I44/543).

I44/428 Nyhon's Farm

Also Nyhons byre (I44/429), stone wall (I44/433) and trees (I44/444).

In 1872 John Nyhon took up 68 acres (Sec 46) and leased 31 acres (Sec 1 of 44) from Larnach. When Captain Leslie set up his cooperative cheese factory in 1877, the closest farmer, John Nyhon, was not included as shareholder but had to buy his way in over the next few years (see above). It was, however, the Nyhon and Stewart families who bought out their neighbours in the early 20th century and converted the Block to sheep. In 1881, Larnach lists John Nyhon as his tenant of Sec 1 of 44 for a seven-year tenancy, rent £30 per annum (Larnach letters, 1881:107). In the bush fire of 1881, there is a report of Nyhon's house being seen on fire but saved (Otago Witness 22/10/1881: 22). In the 1882 Freeholders list, John Nyhon is listed as a dairy farmer with only 37 acres, which does not match the land title evidence of his freehold section being 68 acres (Government Property Tax Dept. 1884). The Nyhons increased their sheep farm when Larnach's estate was sold at the turn of the century, and subsequently acquired a number of other blocks of land locally. Land that the family owned included Larnach's farmstead site (I44/412), and Pamberton's, Arnott's and Hunter's properties. Arnott's farmstead site was used for a set of stockyards, the track out to Highcliff Road making it suitable for trucking out fat lambs.

Nyhon's house, byre and driveway trees were recorded as separate archaeological sites by Middleton. The traces of a stone field wall (I44/433) runs up the flank of Harbour Cone, and another wall is on the legal boundary between Nyhon's and Leslie's sections (I44/434).

Neill's 1901 map shows the house at the rear of a stand of trees, the macrocarpas that remain today, although some have been recently cut down. Little evidence is visible of the site of the house, apart from a small area of stone. A modern farm track has been bulldozed through the middle of the farmstead site to gain access to the ridgeline. The rivetted water tank can be seen in some felled timber along with part of a cast iron fireplace. The macrocarpas surrounding the house site itself are included as part of the archaeological site; the shelter belt / hedgerow is recorded separately (I44/444).

Condition:	House site probably destroyed. Sub-surface evidence may be present. Trees good.
Threats:	No further threat anticipated.
Tree management:	Maintenance.

Figure 102
1942 aerial photograph showing Nyhon's byre (a ruin even then, and the house is also gone) and the stone wall running north. It looks as though there was a small enclosed yard at the end of the byre.

I44/429 Nyhon's cow byre

The ruins of nyhon's stone cow byre stand on a saddle on the main spine ridge. It was a rectangular structure, and only the north and west walls are still partially intact. The walls were carefully built by someone who was a capable stoneworker.

A stone wall extending north from near the byre (I44/433) was possibly associated with the operation of the byre and management of stock. A small enclosed yard once stood at the end of the byre, but this has been removed by farm track development.

The byre should be stabilized and maintained by a qualified mason to prevent further deterioration.

Condition:	Ruinous.
Threats:	Heavy stock
Tree management:	N/A

Figure 103
The ruin of Nyhon's cow byre (I44/429).

Figure 104
Detail view of the end wall of Nyhon's byre (I44/429), showing how the wall was constructed.

I44/433 Stone Wall (Nyhon, internal wall)

A stone wall in poor condition runs up the flank of Harbour Cone from beside Nyhon's cowbyre (I44/429) up towards Leslie's road (I44/432). The wall was identified in Higham (1986) as wall 10. It was probably built by the landowner John Nyhon.

Figure 105
Stone wall I44/433, with the ruin of Nyhon's byre (I44/429) at its lower end.

I44/444 Macrocarpa shelter belt / hedgerow along Highcliff Road

This site consists of the stand of macrocarpas along the boundary of Highcliff Road at either side of Nyhon's gateway. Neill included some of these trees in his 1901 map. These stands of macrocarpas are two of many that form part of the relic landscape of Harbour Cone. They appear to be healthy, but will require future maintenance to remove dead wood.

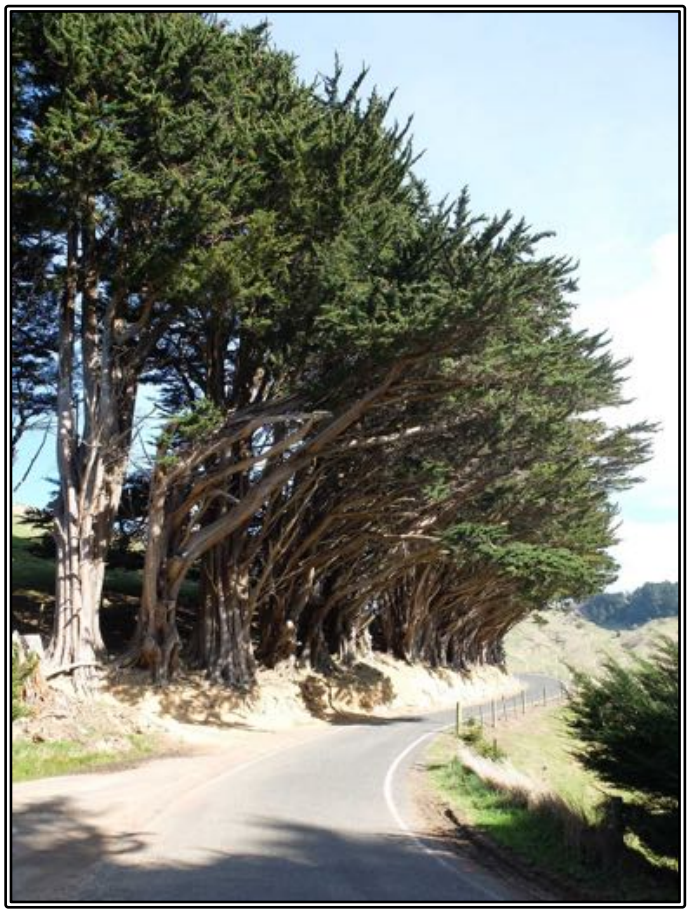

Figure 106
The stand of macrocarpa trees (I44/444) beside Highcliff Road next to Nyhon's farmstead site (I44/428).

I44/431 Robert Dick's House

Robert Dick came to New Zealand in 1860 and took up at least 20 acres in 1868 (western halves of old Sections 41 and 43). The electoral rolls of 1870-71 show him owning Sections 33, 34, 35 (residential sections nearby) as well as Sections 41 and 43. Dick may have owned 60 acres in all, split into two blocks by his neighbor Forbes' land. Robert Dick died in 1881, but had previously granted Forbes a right of way through his land in 1874 (this likely to be the road to the goldmine, as Higham [1986: 111] had noted), and this continued after his death until "Reid and others" (perhaps Robert Dick's trustees) sold the land to Rutherford in 1883 (DI G220). The date of Robert Dick's death explains why no house remained standing when Neill carries out his topographic survey.

Both Robert Dick (manager) and Robert Forbes (director) were involved in the gold mine, Hoopers Inlet Quartz Mining Company, Forbes also owning sections 33 and 34 on which it was located (Higham 1986: 113; Knight 1978: 63; Middleton 2008: 27). Knight (1974) states that these men were also both employed by William Larnach.

It is not surprising that Robert, as a stonemason, and Willam Al1an, as a blacksmith, had more capital to spare than their neighbours. In 1877 when Captain Leslie set up the Harbour

Cone Cheese Factory, they were both able to lend the company £50 each for three years at 8%. Dick took over as treasurer in 1879 when Allan resigned (Knight 1978:60). Robert Dick should not be confused with William Dick, who was also a stonemason and Larnach's principal contractor for masonry (Knight 1978:83). This William was probably Robert's oldest son. The electoral rolls of 1870-71 show both Robert and William holding land outside the Hereweka Block especially around Hoopers Inlet.

The site of Robert Dick's farmstead is in the valley to the south of Nyhon's byre, and is marked by a single large macrocarpa. The house site consists of the masonry base of a fireplace and some steps. A collapsed/robbed stone wall (Higham wall 9) partially surrounds the house site.

A hedgerow has been planted along the boundary dividing Robert Dick's property from that of his neighbor Forbes. As the title research has shown (below; see also Higham 1986: 113), Forbes owned the eastern half of sections 41 and 43, Otago Peninsula Survey Block II, while Robert Dick owned the eastern parts of the two sections.

Figure 107
Dick's farmstead site (I44/431), with the farmstead wall in the foreground (Higham wall 9) and the chimney base of the house left of centre.

Figure 108
The masonry chimney base at Dick's farmstead (I44/431).

Condition:	House site: chimney base + subsurface. Wall: poor.
Threats:	Heavy stock.
Tree management:	Large macrocarpa, maintenance (non-urgent).

I44/448 Stone wall/hedgerow (Dick/Forbes boundary)

This boundary line between the Dick and Forbes properties (two parts of sections 41 and 43, discussed above) is marked by a section of hedgerow close to the two house sites and a longer section of stone wall that runs over the brow of the hill (Higham wall 6).

Figure 109
The boundary between Forbes' property (left, outside the Harbour Cone block) and Dick's property (right). The hedge and wall run along the boundary.

Leslie Properties, Harbour Cone

A series of sites and features on the flanks of Harbour Cone are associated with several generations of the Leslie family. These include two farmstead sites (I44/82, 437, 445), the track that linked them (I44/432), and several stone walls and boundary lines (I44/434, 436, 449).

In 1865, Captain William Leslie was the second settler after Walter Riddell to take up land on the Hereweka Harbour Cone Block (Section 47 of 70 acres) on the south side of Harbour Cone. Like Riddell, Captain Leslie at first built a house of temporary materials. It is remembered by his grandson as wattle and daub, rather than tree fern construction but the two methods may have been very similar and may have even merged. In 1865, Captain Leslie had only one son, had lost his first wife and young children, married again (Emma) and had five children by her between 1861 and 1873, but all born in Scotland and all but one died in infancy. The son, also William, however, had nine children, born after 1888, the oldest of which remembered the wattle and daub house, which must have lasted at least 25 years. Judging by the dates of his childrens' births in Scotland and local Otago news, such as the newspaper report that "great exertions were made by Mr and Mrs Leslie, and Mr Leslie, jun.," to save the cheese factory during the 1881 bush fire (ODT 17/10/1881), suggest that he was making good use of his Master Mariner's certificate, coming and going between New Zealand and Scotland.

At some unknown date, but after 1872, Leslie leased from Larnach Section 1 of 46 (28 acres) across the headwaters of Smiths Gully. The northern part of Highcliff Road was built in 1868-69, giving access to both these sections. In 1886 an account book shows a Leslie paying £6 16s for the surveying and fencing with wire Section 31 (11.5 acres) looking out over Hoopers Inlet (Knight 1978 :60). Only a paper road bounds the eastern end of this section, which came to be occupied by William Leslie Junior, son of Captain Leslie and father of the Leslie who wrote the historic accounts (Leslie n.d.b.). The Leslies built a benched track (I44/432) between Leslie Junior's house (I44/445) and Highcliff Road over Captain Leslie's sections, sufficient only for horse-drawn sledges but not drays (I44/432).

In 1878 Captain Leslie established the Harbour Cone Cheese Factory on his leasehold land below Highcliff Road. The factory opened on 5 November 1877, with a consortium of local farmers as shareholders– W. Allan, R. Forbes, W. Rodgers, J. Rutherford, R. Dick, J. Draper, W. Hunter, W. Leslie junior. T. Scott and E. Ward, with William Leslie senior as manager. Land for the factory was leased from Leslie and a wooden building 14 x 24 ft was built (Knight 1979: 60; Leslie n.d.). The cheese factory was not without its difficulties especially due to the steep terrain. Each farmer had different methods for getting milk to the factory. Robert Dick had special milk cans with flat sides that could be attached to a horse, William Hunter used a wheelbarrow while James Rutherford used a bullock with a sled. The first cheese maker at the Hereweka factory was Edmund Ward, who began learning the trade from the experienced cheese maker John L McGregor, the first cheese maker at the Springfield site near Pukehiki. The cheese was sold directly to the George Street grocery store of Esther & Low, and the Otago Daily Times reported that the factory had produced 2.5 tons of cheddar cheese in 1879 valued at 6.5 pence/pound (Paul Pope: pers.comm., summary from Hocken Archives).

The cheese factory was destroyed in the bush fires of 1881: " The Harbour Cone Company's Cheese Factory succumbed to the flames, though great exertions were made by Mr and Mrs

Leslie, and Mr Leslie, jun., to save the building. Nothing with the exception of some bacon and a saw could be got out, and the whole building became a total wreck within a few minutes' time. Mr Leslie's dwelling-house was twice on fire, but was put out, though in one place the weatherboards were burned through. The dairy also had a narrow escape, one of the piles being burnt completely through before it was noticed. Mr Leslie's byre and sheds were also destroyed. The factory, in which there were three cheese presses and other machinery, was insured in the Norwich Union Company's office for £150, but the building was valued at £50 above this sum" (ODT 17/10/1881).

William Leslie (the youngest, born in 1888) told Hardwick Knight that he remembered the burnt foundations of the cheese factory from his childhood, but Knight noted that the council later had a metal crushing plant on the site, damaging what was left of the foundations. Knight also notes that in 1978 the well and water pipe that carried water to the cheese factory were still evident on the upper side of Highcliff Road.

A photograph shows what had once been Captain Leslie's house in 1913. A woman and two small girls stand in the foreground, identified as "Mrs. D. Arnott and two daughters home at Sandymount". This caption, along with Leslie's information about the Arnott house (above) provides clues to some of the social networks in the valley, where the houses mostly had a high level of intervisibility. This Mrs. D. Arnott was the daughter in law of the Arnotts who lived in the house below the Larnach farmstead buildings. Her husband David Arnott drove the Sandymount horse bus (Figure 33) that took Peninsula residents into Dunedin three days a week and in 1924 bought a Ford car to start the first taxi service (Anon n.d.-b).

Figure 110
William Leslie senior's house (I44/82) in about 1913 when David and Ida Arnott and their children were living there (Otago Peninsula Museum).

I44/82 Leslie's Farmstead (No. 1) & Harbour Cone Cheese Factory

Across the road (16) from where the sledge track comes out in amongst trees are the two sites of Captain Leslie's two homes – the levelled position for the wattle and daub house first of all; and then below the remains of the stone crusher the levelled area under the trees and some relics of the second house. ... Where the stone crusher ruins are visible below the fence on the left was the site of the early Harbour Cone cheese factory 1878 (18) which had a brief existence before it was burned in a bush fire (Leslie nd).

A series of terraces are located on the downhill side of Highcliff Road at this site. The uppermost terrace (only just below road level) was probably the location of the Peninsula County Council road metal crushing plant, and may also have been where the cheese factory stood. An access track off the road is still visible (although now fenced across). Below this is a larger terrace (approximately 20m by 8m) bounded by several large old pine trees, and with several areas of stone revetment below. This was probably the main house site, although there is not surface evidence of the house structure. Further down the hill there is a very rough stone wall and overgrown hawthorn hedge line. The wall is approximately 10m long.

Condition:	Trees reasonable. Probably sub-surface archaeological evidence.
Threats:	Tree branch fall.
Tree management:	Maintenance (non-urgent). Site is not regularly visited.

Figure 111
The top terrace, just below the road, at Leslie's farmstead (I44/82). This is possibly where the county council rock crushing plant was located.

Figure 112
The main terrace at Leslie's farm site (I44/82).

Figure 113
Stone revetment below the main terrace at Leslie's farm site (I44/82).

Figure 114
Rough stone wall below Leslie's farmstead site (I44/82).

I44/437 Leslie's Farm Buildings Site

Across the road from the site of the house and cheese factory the location of at least one of Captain Leslie's farm buildings can be identified. There is a small, levelled terrace cut into a bank, with stone revetting on the down side. This has been identified as the location of Leslie's cow shed and hen house. Knight (1978) also mentioned a well and water pipe for the cheese factory was visible here, but these were not found in 2020.

Leslie's road (I44/432) meets the Highclliff Road beside this terrace.

Condition:	Site only. Possibly sub-surface archaeological evidence.
Threats:	None anticipated.
Tree management:	N/A

Figure 115
The terrace on the upper side of Highcliff Road that was probably the site of Leslie's cowshed (I44/437).

Figure 116
Stone revetment at Leslie's cowshed terrace I44/437.

I44/445 Leslie's Farmstead (No 2)

Stop at a macrocarpa hedge on left and look across to the shoulder of Harbour Cone. Here you can see the trees of Mr. Leslie's boyhood home and the slope he walked across to go to school [at Portobello] (24). ... (This building was years later brought down from the hill and is in Portobello on the road to Hooper's Inlet – owner Mr. W. A. Seaton). (Easily recognizable by its two chimneys. The glassed-in part must have come from the glass house on the farm where the Leslie family had five vines growing) (Leslie nd).

This is the site of the farmhouse built by William Leslie junior after his marriage, on the other side of Harbour Cone from his father's house. This site was warm and sunny, compared with the house on the south side of Harbour Cone that never got any sun at all in winter and was very cold. However the disadvantage of Leslie's No. 2 house site was the access, as the sledge track now recorded as I44/432 was steep at the western end and never intended for wheeled traffic.

The house started as two rooms, each with a double brick chimney. There was a dairy, as "butter making was the sole means of making a living"; next to this "a good wash house with a built in enamelled boiler ... next to that was another room which housed a lot of odds and ends, even a chaff cutter turned by hand" and beyond this, on the "sunny side" a glass house with grape vines. "As the family grew, the house did too first two rooms with a gable were added to the front of the house, later the dairy was connected to the house as it was no longer needed" after the Sandymount dairy factory opened (Leslie n.d.-a).

The site is located on a large flat topped spur on the east side of Harbour Cone. As is typical, the site is marked by stands of large old macrocarpas, but there is space at this site for these to be mostly set back from the farmstead area. One large old tree is beside the house site, and another overhands the paved floor of one of the outbuildings.

The house site is a leveled area (slightly terraced) with some stone piles possibly marking fireplace locations. A row of exotic garden trees has been plated across the front of the site. To the SW of the house site there are several areas of stone paving and edging and a probably drain, all probably associated with the farm buildings (byre, dairy etc). The track (Leslie's Road, I44/432) from the other side of Harbour Cone enters the farmstead in this area.

While the farmstead area remains open and in grass, it is evident that scrub is slowly encroaching on the area, especially along the eastern end of the access track. The macrorcarpa trees are far enough away not to pose a threat to the site, although the one overhanging the stone paving could be trimmed to allow the paving to be seen more easily.

Condition:	Good. Surface features and sub-surface evidence. Trees good.
Threats:	None anticipated.
Tree management:	Tree maintenance (non-urgent). Pruning branches overhanging historic features.

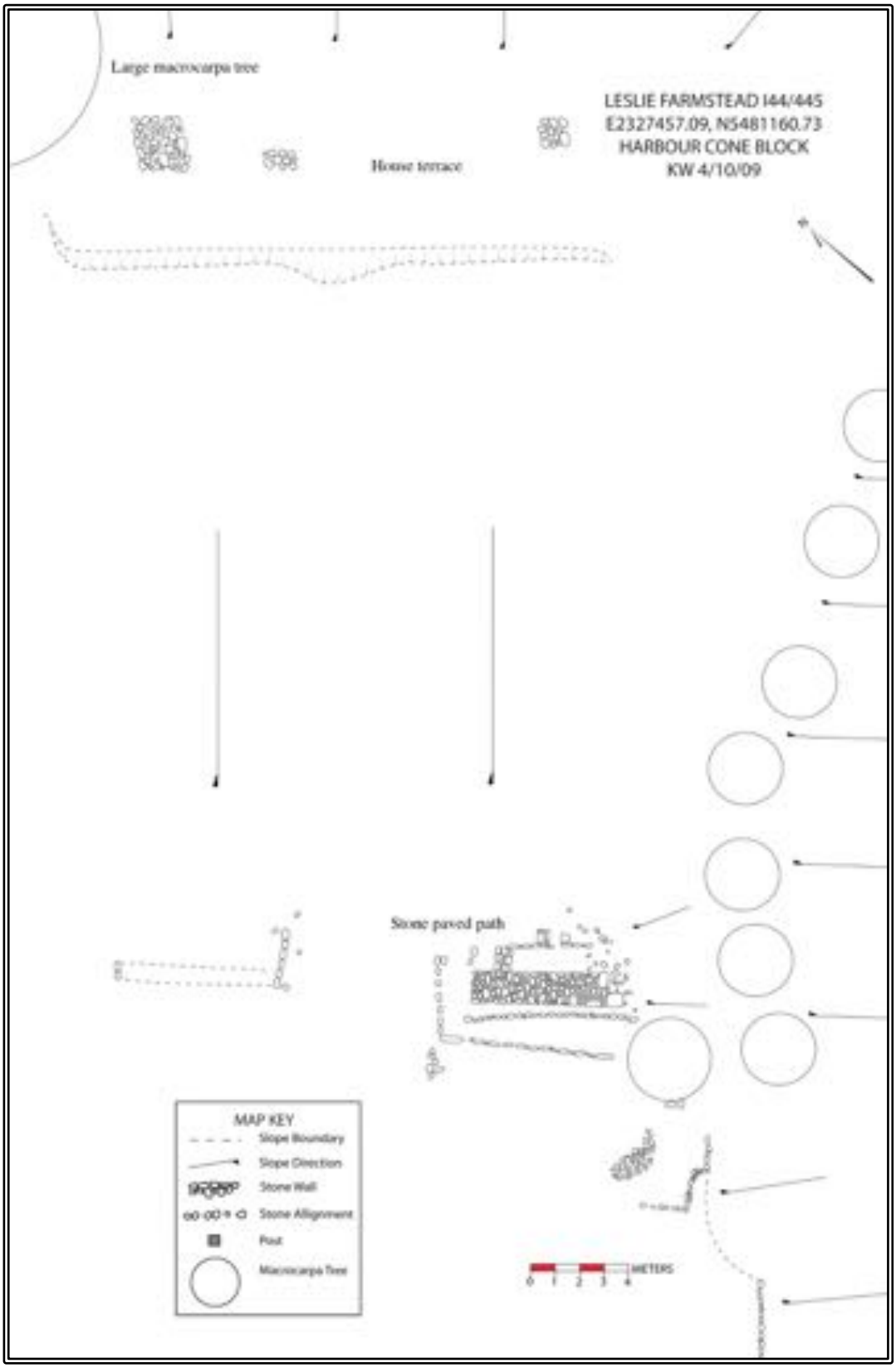

Figure 117
Plan of Leslie's (No. 2) house site (I44/445) (Kirsa Webb).

Figure 118
The house site at Leslie's farmstead (I44/445), with exotic trees planted across far side of terrace.

Figure 119
Leslie's house site, probable chimney base.

Figure 120
Stone paving and edging at Leslie's farmstead (I44/445), underneath a large macrocaroa tree. This was probably related to the dairy or one of the outbuildings.

I44/432 Leslie's Road

This is the road built by William and William Leslie between the two family farmsteads, one beside Highcliff Road and one on the east flank of Harbour Cone.

The sledge track that runs between Captain William Leslie's house (I44/82) on the south side of Harbour Cone and his son William's house (Leslie No.2 house, I44/445) on the east side of the Cone. The track begins beside the terrace above the Highcliff Road where Leslie's byre (I44/437) was located. As Leslie (n.d.) described it, "part of this road at the southern end was so steep that only a sledge could be used on it. There was never a wheeled vehicle on my father's land other than a wheel barrow and in later years a bicycle". After the steep beginning at the southern end, the road follows a gentler gradient to the eastern side of Harbour Cone. Along the way, several old totara posts still stand, drilled to run wire through them. The stumps of other posts can also been seen, rotted off at ground level. A rectangular stone feature is situated beside the road in one place. There is also a short deviation, where two track formations can be seen: this was presumably a situation where a section was too steep and a new line was cut to ease the gradient.

Close to the farmstead site there is a short branch down to a small stream, presumably to provide access for a water supply.

Figure 121
Leslie's Road (I44/432) near the western end, where the steep flank of Harbour Cone was traversed.

Figure 122
Leslie's Road (I44/432) on the flank of Harbour Cone.

I44/449 Stone Wall (Leslie property, internal wall)

This a short stone wall and row of macrocarpas within Section 47, which belonged to Captain Leslie. It probably relates to an area around the homestead of William Leslie (junior) (I44/445) that is shown on Neill's 1901 map. Higham (1986) recorded it as wall14. The wall is in poor condition, both as a result of the trees blowing it apart and stock sheltering under the trees. The wall is not particularly visible, and does not appear to receive many visitors.

Condition:	Poor
Threats:	Stock, trees.
Tree management:	Tree maintenance (non-urgent).

Figure 123
Higham wall 14, under macrocarpa trees.

I44/434 Stone wall (Nyhon/Leslie Boundary)

This stone wall in poor condition runs along the boundary between Leslie's section 47 and Nyhon's section 45, probably built between the date of Nyhon's Crown Grant in 1860 and 1877, the same dates being likely for wall 10. It is identified as wall 11 in Higham (1986: 114). It is possible that it was a field clearance line, and that it was never a full-height stone wall, and that instead a fenceline ran long the alignment.

Condition: Poor
Threats: Heavy stock.
Tree management: N/A

Figure 124
Looking along the line of stone wall I44/434 (Higham wall 11) on the boundary between Nyhon's and Leslie's properties.

I44/436 Stone wall (Leslie/Allan Boundary)

An intermittent stone wall that runs along the property boundary between Sections 47 and 48 (Leslie's and Allan's) on the flanks of Harbour Cone. The wall was described by Higham (1986) as Wall 12 (western end, near the summit of Harbour Cone) and Wall 13 (eastern end, near Leslie's farmstead site I44/445). Between these two sections the wall exists intermittently as a rough stone structure with occasional fenceposts still in place. The nature of the wall changes along its length: Wall 12 consists of very large stones roughly placed with drilled fenceposts; Wall 13 is better constructed with smaller stones and augered fenceposts (for post-and-rail fence), and the middle section is roughly constructed with drilled pists. It is reasonably certain that the overall structure was built by different people over some period of time, presumably as forest clearance and the clearance of stones from fields progressed.

The use of combined stone wall and wooden fence can be seen in several places on the Otago Peninsula, and appears to comply with the *1855 Otago Provincial Council Fencing Ordinance* that required a minimum wall height, which could be achieved by a low wall being surmounted by a paling or wire fence.

Comparison of 1986 with 2020 photographs show that the eastern section (Higham wall 13) has deteriorated, probably due to stock action on the stonework.

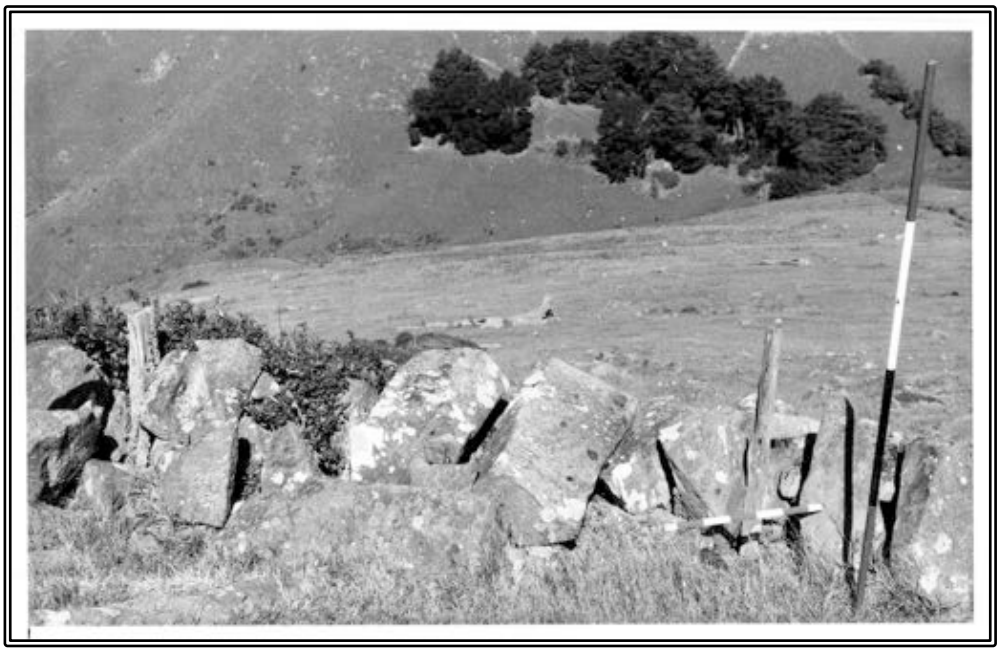

Figure 125
Stone wall I44/436 (Higham wall 12) in 1986, showing the posts built into the wall. The wall is roughly built with large rocks (Higham 1986).

Figure 126
Sone wall I44/436 (Higham wall 12) on the south flank of Harbour Cone.

Figure 127
Stone wall and fencepost in wall I44/436, on the upper east flank of Harbour Cone. This lies between Higham's walls 12 and 13 (which are on the same boundary).

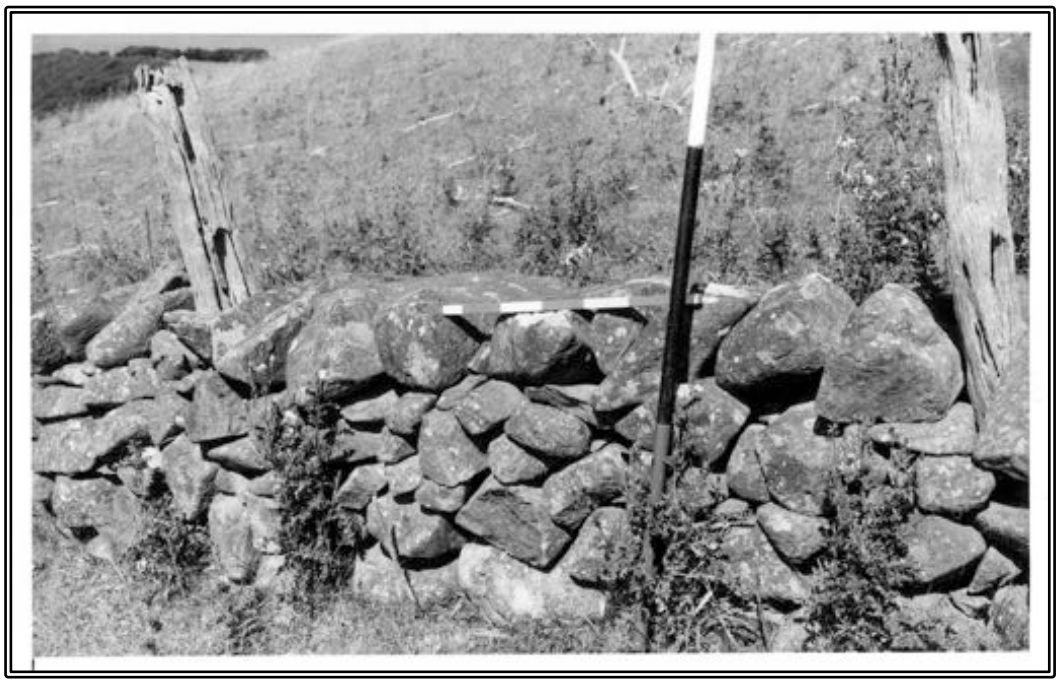

Figure 128
The eastern end of stone wall I44/436 (Higham wall 13) in 1986 (Higham 1986).

Figure 129
The eastern end of stone wall I44/436 (Higham wall 13) in 1986 (Higham 1986).

Figure 130
The eastern end of stone wall I44/436 (Higham wall 13) in 2020. Some deterioration can be seen in the stonework since 1986, probably due to stock, and the encroachment of gorse and scrub is obvious.

Figure 131
Fenceposts in the eastern end of stone wall I44/436 (Higham wall 13) in 2020. The augered holes for rails are still obvious: this would originally have been a low stone wall with a post and rail fence on top. This wall appears to comply with the 1855 *Otago Provincial Council Fencing Ordinance* of 1855 that required a minimum wall height, which could be achieved by a low wall being surmounted by a paling or wire fence.

I44/982 Farmstead, Smiths Stream (Leslie's?)

This small farmstead site consists of two terraces cut into the hillside in the valley below Arnott's and Hunter's sites. The history of the site is unknown, but the site was shown on the 1888 plan of the subdivision of the Larnach Estate (Misc-1), and was not shown on Neill's 1901 map, so it was presumably abandoned between those dates, and is likely to date to the 1860s or 1870s. The 1888 plan shows two buildings, which is consistent with the archaeological evidence.

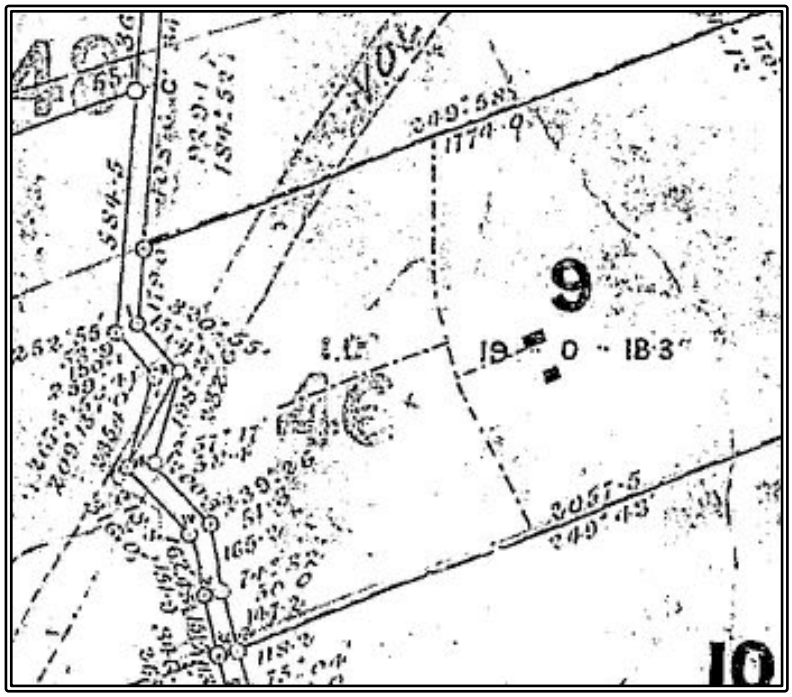

Figure 132
Detail from 1888 map (Misc-1) showing two structures at the farmstead site (shown just below the '9') and the early route up the valley (surveyed corridor to the left). This is the only depiction of the farmstead found in archival sources.

Captain William Leslie took up the lease on Section 1 of 46 in 1872, and his homestead was across Smiths Stream from this site, just below Highcliff Road (I44/82). It is possible that this small farmstead was built for Leslie's son (also William), until he moved into the newer farmstead (Leslie's No. 2, I44/445) in about 1897. The proximity to the early route up Smith's Stream valley was one reason for establishing the small farmstead.

The site consists of two terraces cut into the hillside. The lower terrace measures 8.5m by 8m, and has two stone fireplace bases and fallen stonework (probably from one of the chimneys). The farmhouse would have stood here. The upper terrace, 20 metres up the hill, measures 13m by 5m, and has no surface evidence of structures. Several split timbers are scattered on the hillside between the terraces. Some soil erosion due to stock trampling is evident.

Condition:	Ruins only, sub-surface archaeological evidence present.
Threats:	Heavy stock causing erosion.
Tree management:	N/A

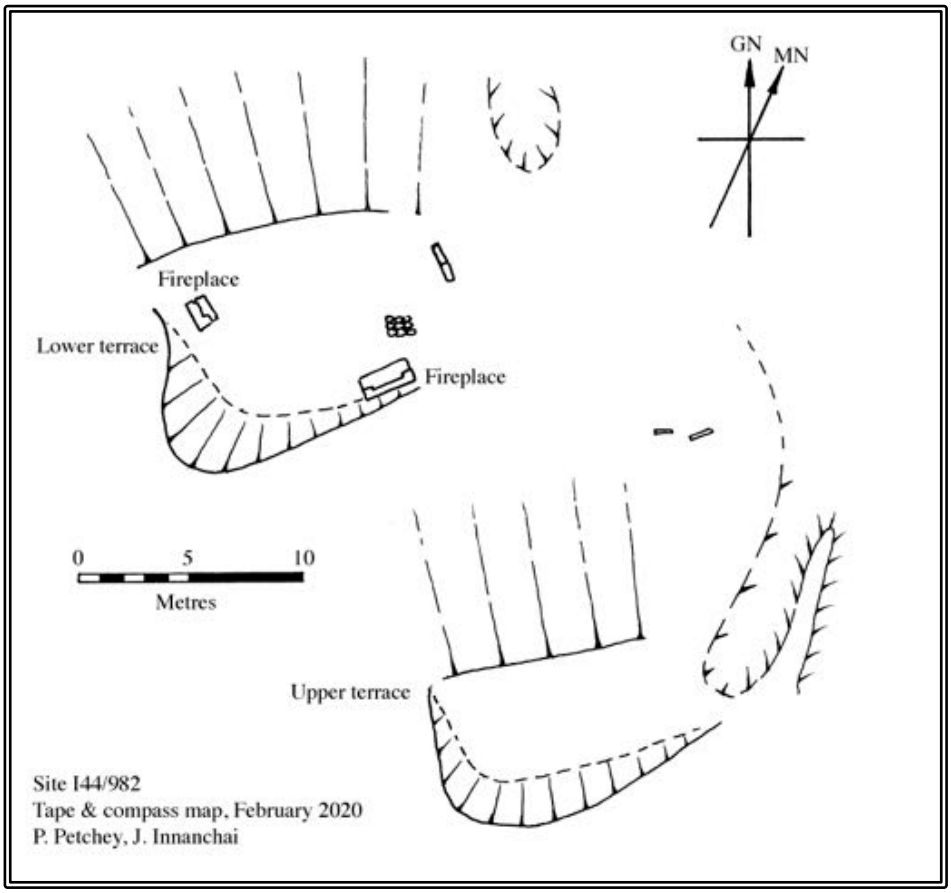

Figure 133
Plan of farmstead site I44/982.

Figure 134
Looking down from Highcliff Road to farmstead site I44/982 (arrowed). The macrocarpas of Arnott's farm (I44/420) are on the hillside above.

Figure 135
Alf Webb standing beside the remains of one of the two stone fireplaces at farmstead site I44/982.

I44/442 Bacon's Bridle Track

This track is shown as a bridle track on Neill's 1901 map, with a noted grade of 1 in 7. It runs straight up the hill apart from a small deviation near the base of a ridge that descends from Harbour Cone. The alignment follows a paper road running along a line of section boundaries, which is continued (in a straight line) in the track and stream crossing (I44/439) and Rutherford's Road west (I44/425). The paper road corridor still survives in some places. The fact that such a straight and only marginally practical alignment was surveyed and built suggests that it may have been laid out at an early date as a surveyor's cut line, and then continued in use for many years as a foot track, until the Highcliff Road was built.

The northern section of the track has remained in use and is now a public walking track from Broad Bay up to Highcliff Road, known as the Bacon track after an earlier landowner.

Higham's (1986: 117) wall number 19 can be found near the bottom of the track, curving around the base of a small hill. Bacon, the likely builder of the wall, owned this land from 1860 until 1872, when Larnach purchased it. It appears that the same Bacon, or one of the same family, purchased the land from the Camp estate in 1900 (OT124/48).

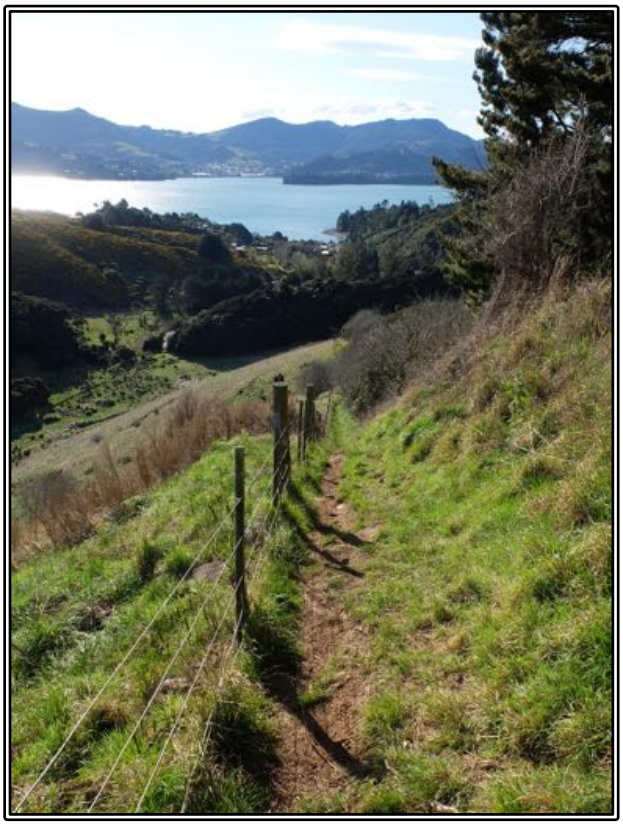

Figure 136
The upper section of Bacon's Track (I44/442), looking back down towards the harbor.

Figure 137
The lower section of Bacon's Track (I44/442), where a modern fenceline has been placed down the middle of the old bridge track formation.

I44/452 Stone Wall (Camp Estate Boundary)

This wall was recorded by Higham (1986) as Wall 20. It runs at right angles near the end of the Bacon track, marking the boundary between what was once section 21 and section 13. It must have been built prior to 1872, when both sections became part of the Camp Estate. It is built from large blocks of stone, and is in reasonable condition.

Figure 138
Stone wall I44/452 (Higham wall 20), at the northern extent of the Harbour Cone Block.

I44/1015 Stone Wall (Beside Bacon's Track)

This stone wall runs beside Bacon's Track where the track curved out towards the west to go around the foot of a spur. The stone may have come from a small quarry on the other side of the track (I44/1016). Higham (1986) recorded it as Wall 19, and observed that it was made from shaped blocks, and is not typical of walls built along the Larnach estate boundaries. She thought it probably the work of Bacon and his employees. The wall is in poor to moderate condition.

Figure 139
Stone wall I44/1015 running beside part of the lower section of Bacon's Track (I44/442) (Higham wall 19).

I44/1016 Stone Quarry near bottom of Bacon's Track

A small quarry on the east side of Bacon's track. Possibly the source of stone for walls I44/452 and I44/1015).

Figure 140
Quarry site I44/1016 to the left, and Bacon's Track (I44/442) to the right.

I44/439 Boundary Line / Track and Stream Crossing

This boundary line is on the same cadastral line as Bacon's Track (I44/442) and Rutherford's Road (west) (I44/425), and was originally surveyed as a roadline (SO1327). The line can be seen clearly on the ground as a trace up the hillside below Highcliff Road, and there is a stone wall where it crosses a small creek below the Leslie house.

It seems likely that it was cut either as a boundary feature, or was in use in the very early days as a track cut along the surveyor's line, but this steepest portion would have fallen out of use as soon as alternatives were available.

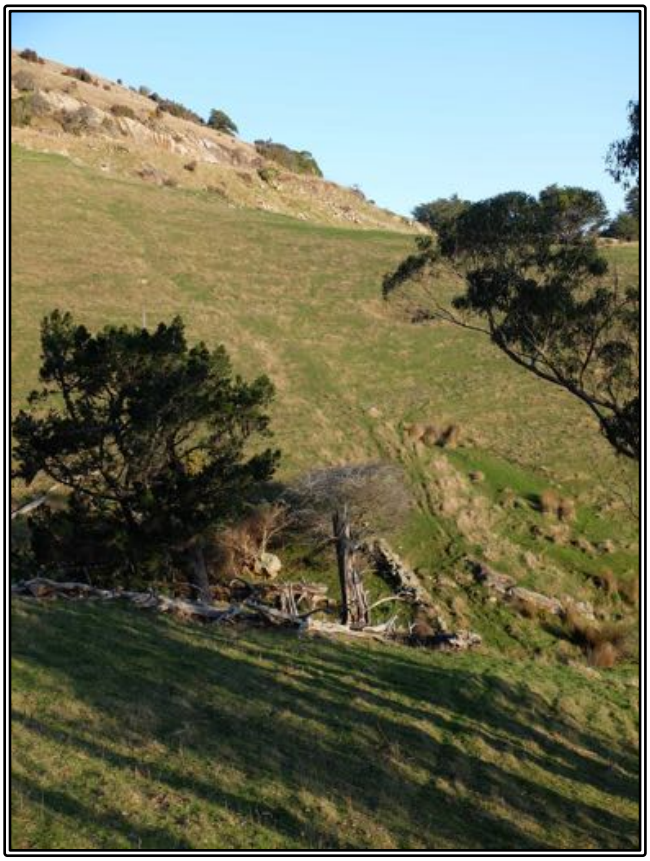

Figure 141
The trace of the boundary or track can be seen cutting diagonally across this image, with the stream crossing to bottom right.

Figure 142
The stone wall and stream crossing in the head of the valley of Smith's Stream.

I44/96 Allan's Farmstead and Forge

Allan's ruin is considered in more detail in Section 6 Stone Ruins

In 1868 William Allan took out title to one of the steepest sections on the Block, Section 49 on the north side of Harbour Cone, comprising 45 acres. Born in Dumfrieshire, he came to New Zealand about 1862 (aged 22 years) and spent two years in the goldfields before taking up dairy farming in 1864. He may have thought that black smithing would be as profitable as dairy farming, and in 1871, Walter Riddell recorded in his diary that he took a mattock to Allan to be mended. A blacksmith's shop was described as being destroyed by the 1881 bush fire but it is not clear that it was Allan's (Otago Witness 22/10/1881:21). Certainly he had bought a section which was well placed for that particular industry, as it was where the (then) new Highcliff Road and the bridle track (I44/442) up from Broad Bay met, presumably providing customers and their horses for shoeing ready access to his forge from both the north and south. Though in the mid-twentieth century, Leslie knew that Allan was a blacksmith, he does not say if the Harbour Cone forge was active after the bush fire in 1881. Allan married Marion Seaton whose family had land further north on Highcliff Road and at Waimate. There is no trace that they ever had any children. In 1935, his Harbour Cone land was held by Marion Allan, widow of Waimate, and in 1938 passed to The Perpetual Trustees, who according to the land deeds, sold it in 1960 to the neighbour Margaret Nyhon.

In 1974, Hardwicke Knight recorded the site, now I44/96, as "Allan's forge 1870s". Knight (1979: 62) notes "Allan's house and outbuildings are of stone, some of it locally obtained from outcrops, but the house appears to be of a stone very similar to that used on Larnach Castle which is described as Harbour Cone stone". William Leslie (n.d.-a) evidently considered the Allan house built from inferior local stone, unlike the Mathieson brothers farmsteads at Highcliff and Tomahawk, built of bluestone and still in good order today.

The site of Allan's farmstead includes three structures on terraces cut into the hillside, with a pine shelterbelt along the roadside. The main terrace contains a house ruin and another adjacent structure. The remains of a cow byre are further up the hill. There is not clear surface indication of where Allan's forge was (such as areas of blackening or iron fragmants), although the brick structure beside the house ruin is a possibility. The house ruin is a rectangular structure, with the west wall standing over 2m high. This wall was probably strongest because it was thickest as it had a chimney built into it. The front of the house faced north, and two rows of overgrown box hedging survive in line with the front door.

Stone mason Stuart Griffiths commented on the ruin: "This site has blocks of cut tuff in the house walls, with a more formal front facade created by piping grooves in the pointing. Finer cut architectural stone blocks were seen, which appeared to be possibly from the front facade existing window opening. It should be possible to replace some of these fine cut blocks back into the house walls. Above Allens is a chunky basalt wall and stone pedastal, that was perhaps used to hold a water tank, and should be stabilized (after the work on the house and byre." Griffiths and Carl Murray have been further investigating the masonry and mortar of this ruin with the intent to carry out restoration work. They have propped the west wall as it was beginning to lean.

The site also has a complex of stone walls, including wall number 18 in Higham (1986) and a formed road (I44/443) that leads over a knoll around the northern slopes of Harbour Cone. Along the Highcliff Road boundary the hawthorn hedge planting still exists.

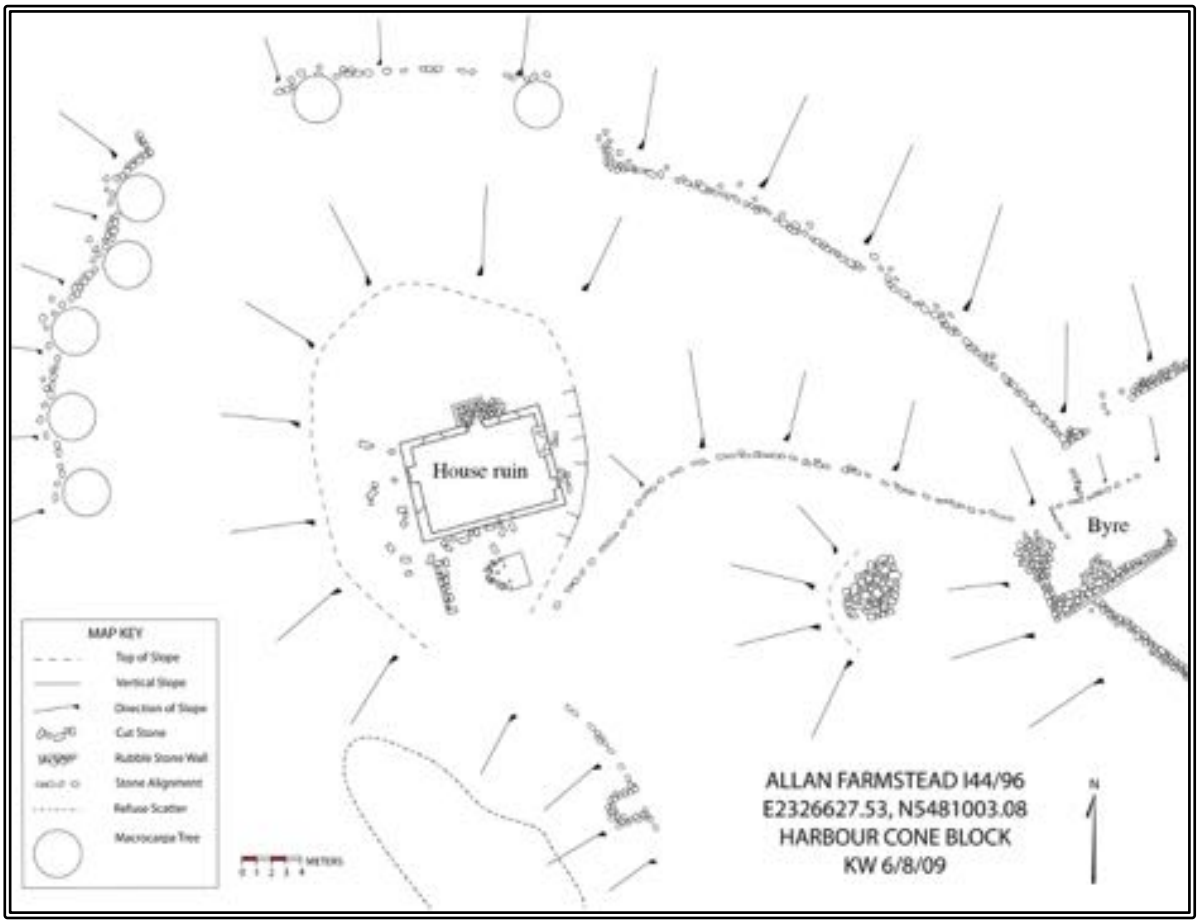

Figure 143
Plan of Allan's farmstead (I44/96) (Kirsa Webb).

Figure 144
Allan's house ruin after vegetation clearance was completed in 2018.

Figure 145
The NE corner of Allan's house ruin.

Figure 146
The overgrown English box hedge leading to the front door of Alan's ruin.

Figure 147
The stone revetment at the rear of Allan's byre.

Figure 148
Detail of post set into the wall of Allan's byre. This was probably the end post for a stall rail: the two voids in the post were originally mortices for the rails.

I44/443 Allan's Road

This is a benched track that leads around the southern edge of the ruins of the Allan house, through a gateway opening in a stone wall, over a knoll where a large macrocarpa tree is growing (although part of this has been blown down) and on around the northern slope of Harbour Cone. Parts of it are revetted with stone, and there is one short fork. The track sidles around Harbour Cone to finish at a small depression NNE of the summit in which some rocks and native hardwood timbers (possibly broadleaf) are lying.

It is most likely that this was a sledge or cart track used for transporting stone and timber down from Harbour Cone when the land was being first cleared. This interpretation is supported by the fact that the track is entirely within Section 49 Block II, and does not lead to or link up with any other track or location. It must therefore have had an internal function.

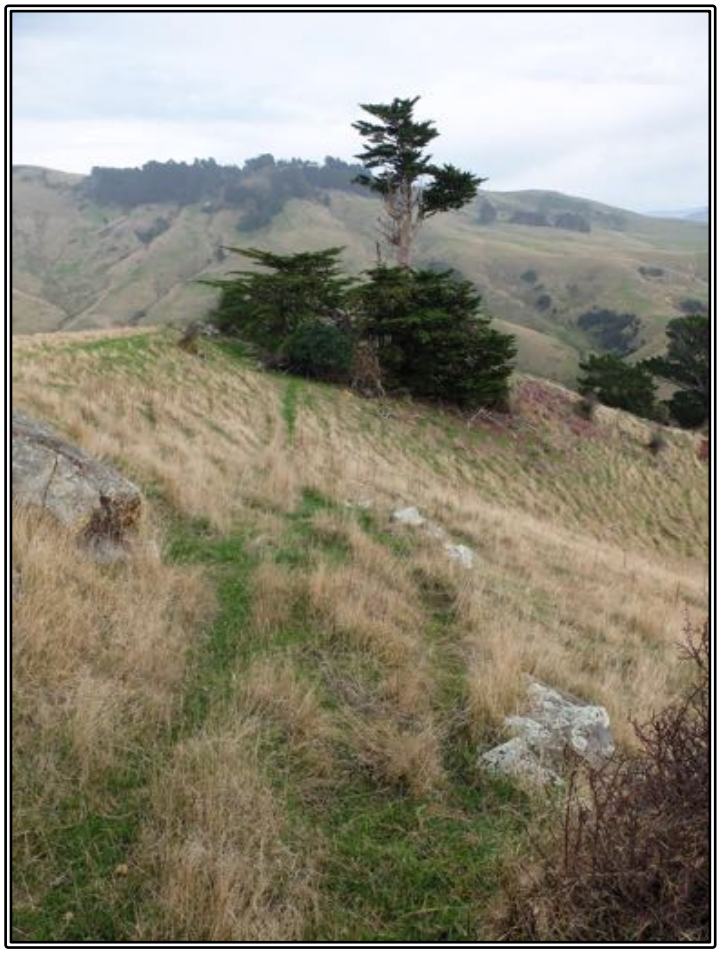

Figure 149
Looking down the line of Allan's Road.

I44/441 Edmund Ward's Farmstead

A corner of Edmund Ward's land, containing the farmstead site, is now leased by the Hereweka/Harbour Cone Management Trust for $1 from the owner, Deiter Dunkel, and is run as part of the farming operation of the DCC tenant, Brendon Cross. The house site and structures fall under the Trust's management. The land, 8.5 hectares adjacent to the Block, was acquired in 2019 mostly for its natural, scenic and recreation values which match those of the Block.

Edmund Ward, a railway worker from Sheffield, arrived in Port Chalmers with his new wife Ruth in 1874. By 1876 he was recorded as a smallholder, Harbour Cone. He bought at least 49 acres (Section 2 of 51), extending above and below Highcliff Rd on the north side of Harbour Cone. He had a relatively large cow byre and presumably herd, and was also employed at the Harbour Cone cheese factory 600 metres up the road .

Ward had three daughters and five sons, one of whom was killed in the France in the First World War. All his children were born at Broad Bay, his youngest daughter in 1894. Sometime after that he left the area and by 1905 he was recorded in the electoral rolls as "farmer Ahuriri Flat" in the Catlins, by 1928 as "farmer Otekura" (further south in the Catlins), and he was buried at Owaka.

This is likely to be at the same site where Knight (1979: 62) noted a stone byre and flagstone flooring north of Allan's house. He photographed the remains of the byre, and his image is reproduced below. Stone features at the site are identified in Higham (1986: 108, 142) as walls number 1 and 1A. Higham gives the name of quarryman James Newton as the owner of the property, followed by Christie.

The site of Ward's house is in a stand of macrocarpas above Highcliff Road. The site has not been surveyed in detail, and the overgrown macrocarpas make it awkward to interpret all of the site details.

The main house site is on a terrace cut into the hillside, and has a stone chimney base and stone paving at one end. Very large old macrocarpa trees stand at the south end of the terrace, and fallen limbs partially cover the house remains. The other end of the house terrace appears to have been excavated out to form a stock dam. Above the house is the ruin of a large two-level stone byre or barn. This measures approximately 14 metres by 17 metres (the latter measurement is very approximate due to the presence of a large patch of stinging nettles). To the north of the house is a stone wall, with large macrocarpa trees along part of the wall line. This wall was probably well-made, but is now in very poor condition. In the open field below is has been largely knocked over and/or removed, while under the macrocarpa trees the growing trees have blown it apart.

From about the byre level the farm access road (site I44/450) leads off to the south to meet Highcliff Road. This is revetted with large blocks of stone as it runs through the macrocarpas, but nevertheless is badly damaged in places.

Condition:	Archaeological features disturbed, but present. Stone walls moderate to poor.
Threats:	Tree branch falls.
Tree management:	Trees healthy, but require extensive maintenance.

Figure 150
The ruins of Ward's stone byre, possibly in the 1960s. Knight's caption reads: 'the entrance, with chamfered architrave, is at the near end. There does not appear to have been sills for windows within six feet of the ground in any part of the structure… in one or two places there are the remains of wooden sub-structures left in the walls.' (Hardwicke Knight, Hocken Archives).

Figure 151
The stone fireplace base of Ward's house beneath the trees of the farmstead site (I44/441). The other end of the house terrace has been modified with a pond.

Figure 152
The ruins of Ward's cow byre at Ward's farmstead site (I44/441). Harwicke Knight photographed these ruins in the 1960s (see image above).

Figure 153
Stone wall running under macrocarpa trees at Ward's farmstead (I44/441). This wall was recorded as Higham wall 1.

I44/450 Ward's Road

This is the access track that led from Highcliff Road to Ward's farmstead. The track crossedan unstable section of hillside, and at least half of its length has been destroyed. The best preserved section is where the track enters the area within the farmstead macrocarpas. Here the track is well-benched and revetted with very large stones. However, the track is generally in poor condition, with many areas eroded away. This is probably due to a combination of the steep slope and stock movement.

Figure 154
Stone revetment along Ward's Road (I44/450), where it runs beneath the large macrocarpas around the farmstead site (I44/441). Note the large size of the stone blocks.

Highcliff Road: Stone Revetments

There are numerous areas of stone revetment that support sections of the Highcliff Road. They vary in style and quality of stone work and condition. In general these are related to the road and are therefore presumably a DCC raoding management issue rather than Hereweka Harbour Cone management issue, but they are in many cases historic, and the f=legal road reserve and actual road alignment are not always the same, meaning that ownership of these features may be a moot point in some cases. As historic features of the landscape, they do have significance. A number of these revetments have been individually recorded as archaeological sites.

I44/438 Stone revetting below Highcliff Road

A section of stone revetting supporting a bank below Highcliff Road is located just beyond the site of the Leslie house.

I44/430 Stone revetting

This site consists of a small section of stone revetting below the road opposite the entrance to Nyhon's farm.

I44/1014 Stone Revetting

A substantial and well-built stone revetment below Highcliff Road. The stonework extends approximately 30 metres, is battered back, and stands to a maximum of about 3.2 metres. A small flow of water runs through the middle of the wall and down the gully below. A tree had been growing out of the middle of the revetment: this had been cut down, but the roots have displaced some of the revetment and it may need repair at some time.

Figure 155
Stone revetment below Highcliff Road (I44/1014).

4 The Timber Buildings

The Hereweka Harbour Cone Block contains five standing timber structures, all of which are components of farmstead sites described in Section 4 above. These structures are:

- Larnach's byre (Larnach's Farmstead, I44/412)
- Riddell's stables/byre (Riddell's Farmstead, I44/414)
- Roger's byre (Roger's Farmstead, I44/415)
- Roger's house (Roger's Farmstead, I44/415)
- Stewart's house (Stewart's Farmstead, I44/416)

These structures are all significant as they are rare survivors of the farm buildings that would have been present on every farmstead on the block, they represent early construction techniques on the Otago Peninsula (especially the use of pit-sawn timber in Stewart's house and Roger's byre), and have associations with notable local and regional individuals (especially Larnach's byre and Riddell's stables/byre). However, they present distinct conservation challenges, because all are in various states of disrepair, and timber buildings require regular repairs and maintenance, and are prone to insect attack, decay and other forms of damage. In all instances the management decisions made now will determine whether each structure survives.

Larnach's Byre (I44/412)

Larnach's byre is the last surviving structure of the group of four buildings that originally enclosed the farmyard. It is very significant due to its association with William Larnach and his role as a local landowner, employer and farmer. Its basic function as a byre is represented by other structures such as Roger's byre, but the size and nature of Larnach's byre, and its location within a carefully planned and executed enclosed cobbled farmyard set it apart from other local byres in the same way as the Castle was apart from local houses. It has an important role to play in the narrative of the Habrour Cone Block, the role of Larnach, and provides an important tie with the Castle further up the hill.

The byre is a two storey timber-framed building, with corrugated iron roof. Its form is original, but the original vertical board and batten cladding on three sides has been replaced with vertical sheets of corrugated iron, leaving only the western end wall in its original finish. The interior had been converted to a covered sheep yards, but all of the introduced rails and gratings, and the very large amount of sheep droppings, were removed in 2018 to return the interior to as close as possible to the original layout (without any reconstruction work to replace missing elements). This work exposed the concrete floor with the two effluent drains running the length of the building. At the same time that this work was done the external perimeter drain was also cleared out to reinstate the drainage around the building. This interior and exterior work has removed that standing water that was in the building during wet weather, but the ground is still damp.

The byre building measures 16.7m by 7.7m, but despite its large size it has a relatively lightweight timber structure, consisting of timber posts and framing. The upper floor is supported on very light floor joists, which reply on the posts from the stalls beneath to support them. The junction between the floor joists and wall framing is poor, and there is little tying the two sides of the building together. A wire had been stretched across to assist

this. The roof framing is also simple, consisting of rafters and purlins. Collar ties are in place, but these appear to be a later addition. On the advice of Steve Macknight (structural engineer) coach bolts have been installed (in 2020) to bolt the collar ties to the rafters (they were previously just nailed).

The floor in concrete, with two drains running the length of the building to service the row of stalls down either side. This layout is typical of cow byres of the period, and a similar (albeit on a smaller scale) layout can be seen nearby at Roger's byre. The use of concrete in Larnach's byre is of note as it suggests that it continued in use for some time. As the dairy industry developed, hygiene standards were of increasing importance, and the standards of cleanliness on farms could be highly variable. Regulations were periodically tightened, and requiring milking shed floors to be concrete, the interiors to be whitewashed, and an adequate supply of water available for washing down (Philpott 1937). The concrete floor of Larnach's byre would appear to meet these changing requiements.

As already stated, the original board and batten cladding is only in place on the western end wall, but here it is complete and in reasonable condition (providing an excellent pattern for what the rest of the building should look like). The rest of the walls are clad in vertical sheets of corrugated iron, possibly installed in the 1970s (based on photographic evidence). The framing inside still has evidence of the placement of windows and louvres that were once present. The roof is also corrugated iron, and although it is not known if these sheets are original, it is likely that it was originally in this material. The two valleys on the dormer extension to the south are failing and leaking, causing decay in the structural timbers beneath.

The corrugated iron wall cladding and roof are certainly acting as diaphragms, adding a considerable amount of strength to the building: without this cladding it would probably have collapsed by now.Overall the building is in reasonable condition, and appears relatively straight and true. However, it has some serious issues that need to be addressed as soon as possible:

- All posts and piles mounted in the ground are rotten at ground level. It is unlikely that there is any fixing of the building to the ground: it is just sitting there.
- The wall structures are damaged in places, and in particular the fixings between the floor joists and wall are poor.
- The fixings between the rafters and walls are poor.
- The valleys are leaking and the valley structures are rotten.
- The floor structure is very lightweight, and not suitable for any weight on the upper floor. Many of the cow stall posts that the floor relied upon for support have been removed.
- The wall and roof cladding are supplying much of the structural strength of the building.
- The site drainage has been reinstated, but the footings are still too damp. The drainage will need to be improved.

A structural engineers report and remedial advice is required urgently. Some basic work (such as securing the rafters to the walls and repairing the valleys) would stabilise the building, but more intervention will be required.

Figure 156
The western wall of Larnach's byre. The board and batten cladding is original, and all four walls were once clad this way. Note the window with the remains of a 6-light sash still in place.

Figure 157
The south wall of Larnach's byre.

Figure 158
The east wall of Larnach's byre.

Figure 159
The north wall of Larnach's byre.

Figure 160
The drain exits cut into the eastern end wall of Larnach's byre, together with the cobbles outside the entrance.

Figure 161
The external rainwater drain along the western wall of Larnach's byre after it was cleared out.

Figure 162
The sheep pens half way through being removed in 2017, exposing the original floors and pens.

Figure 163
The interior of Larnach's byre after the sheep pens were removed in 2017.

Figure 164
The original stalls in Larnach's byre exposed after the removal of the sheep pens in August 2017.

Figure 165
Dressed stone paving blocks at the western entrance to Larnach's byre.

Figure 166
The upper floor of the byre. The simple roof structure is clearly visible: rafters and purlins, with collar ties probably added later. The gap along the edge of the floor was to allow feed to be dropped to the mangers below. The scattered timbers include sections of window frame (probably from the byre) and an old table (from the manager's house?).

Figure 167
Bolts installed in March 2020 to secure collar ties to rafters.

Riddell's Stables/byre (I44/414)

Riddell's main farm building comprises a combined stables, byre and barn. This is a two storey timber structure with a corrugated iron roof built on a terrace cut into the hillside, set up against a stone retaining wall at the rear of the terrace: entrance to the upper storey was from the level at the top of this revetment. The building was constructed over time, being extended and added to as necessary.

The building has now partially collapsed and the surviving section is in very poor condition, with macrocarpa branches from the overgrown farmstead trees bearing down on the structure. The southern end of the building (the byre) has been mostly demolished by a fallen tree, and only the centre section (the stables area) still stands to its full height, but the entire structure is unstable. There are large holes in the roof, areas of missing wall cladding, missing floorboards in the upper storey, and widespread decay in structural elements.

Figure 168
The north end of Riddell's farm building in 2020, showing the partial collapse and damage from macrocarpa limbs.

Figure 169
The front (east) wall of Riddell's farm building in 2020, showing the partial collapse of the structure.

Figure 170
The stable door in the front (east) wall in 2017. Most of the vertical slats have now (2020) fallen off.

Figure 171
The front (east) of the building, showing the extension on the side where the Post Office was probably located.

Figure 172
The rear wall of Riddell's farm building. This ground level is supported by a stone revetment, with the door in this wall opening into the upper floor of the building.

Figure 173
Inside the northern ground floor room of Riddell's farm building, with the stone retaining wall at the rear.

Figure 174
The stables area in Riddell's farm building.

Figure 175
Another view of the stables within Riddell's farm building.

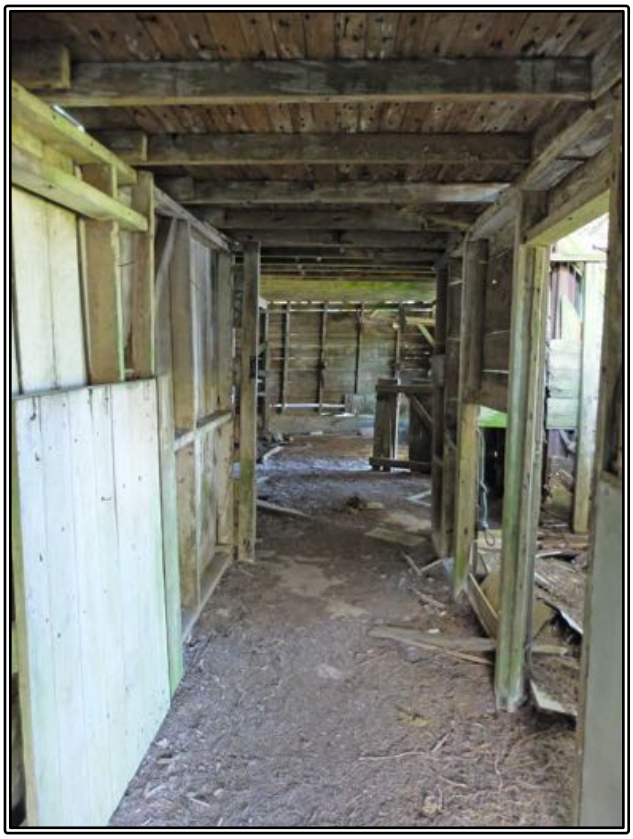

Figure 176
The central passageway of Riddell's farm building, looking north towards the stables.

Figure 177
The well-made brick floor of Riddell's byre, with one of the drains in the foreground. The structure to the right (south) of this view has completely collapsed.

Figure 178
The location of the mangers in Riddell's byre, with the brick floor to the rear of the image.

Figure 179
The cow byre, looking south into the collapsed portion of the building.

Figure 180
The upper storey at the north end of Riddell's farm building.

Figure 181
The upper storey in the central area of Riddell's farm building.

Figure 182
The upper storey in the southern surviving portion of Riddell's farm building.

Figure 183
The interior of Riddell's byre in about 2009, before a tree fell through it (Kirsa Webb).

Roger's Byre (I44/415)

Roger's byre is a small timber building in Roger's farmstead complex. Although outwardly appearing to be a nondescript corrugated iron clad farm building of little interest, it is actually one of the most significant buildings on the Harbour Cone Block, as it is an excellent example of a small farmer's early cow byre, built from pit sawn timbers, and without later modifications required by changing health regulations (such as a concrete floor). It is the last surviving example in the Block of a building that every farmstead would have had.

Figure 184
The west and south (front) walls of Roger's byre in 2020. Only a small area of the original board and batten cladding remains in place on the side (west) wall. This end of the building has at sometime been shortened by the length of one bay (two stalls). The central paved brick floor is still in place in front of the building (grassed over).

The building measures 9.8m long by 8m wide, but it was originally another 2.3m longer towards the south (the distance of one bay between the main posts). The reason why this shortening was carried out is not known, but it may have been to allow more space for trucks to manoeuvre in the farmyard. The brick floor (see below) still extends the original length.

The byre structure consists of hardwood piles (possibly totara) placed along the wall lines and in two rows within the structure. The outer piles then support a substantial beam and the wall framing, while the inner rows of piles support posts which in turn support the upper floor and roof structure above. Floor joists run the length of the building, mounted on the sides of the main posts, with a brace on either side. These internal unweathered timbers show very clear pit sawing marks.

The original wall cladding is vertical board and batten, and this is largely intact on the north and east walls, but only a small area is present on the west wall. The truncated south wall is just clad in corrugated iron. The boards on the east wall have small square mounting holes near their tops, suggesting that some sort of lean-to structure once stood on this side.

Inside the byre the floor is brick, with a central aisle bounded by two parallel drains running the length of the byre. The stalls down either side of the byre are partially bricked, but with the area closest to the walls left as bare earth. This was contemporary practice at the time: Stephens (1876) provides details about the construction and layout of farm buildings, and in particular the ideal layout of cow byres. He recommended that the byre floor should be stone paved, but the area under the front hooves should be earthen, because cattle kneel when rising or lying, and a hard surface would injure their knees (Stephens 1876 Vol. I: 172). Later hygiene standards required milking shed floors to be concrete, the interiors to be whitewashed, and an adequate supply of water available for washing down (Philpott 1937). Traces of whitewash remain at Roger's byre, but the floor was never concreted, suggesting that milking in this byre ceased at an early date before many of these regulations were enforced.

The space within the byre was divided by the main post spacing, and between each pair of posts two stalls were placed. One of the stalls still has an intact original wooden head gate and manger. The original size of the byre would have had 24 stalls, giving an idea of Roger's herd size at the time.

Figure 185
The east and north walls of Roger's byre. The original vertical board and batten cladding remains largely intact on these two walls. The cladding in the gable was probably cut away and replaced with transparent plastic sheeting when the byre was used as a chicken shed.

The byre is generally in sound condition, but requires both remedial and maintenance work. Some weather proofing work was carried out in 2017 (including replacing guttering, and patching holes in the walls with iron sheets), and a modern extension on the SW corner was removed that year as well, and the opening covered with corrugated iron. The building is essentially weathertight at the moment, but the corrugated iron roof is very old and is likely to be leaking slightly, and will get worse. The timber ground piles, while sound above ground level, are likely to be decayed below ground, and investigations will be required to determine their condition. But overall the building is in sound restorable condition.

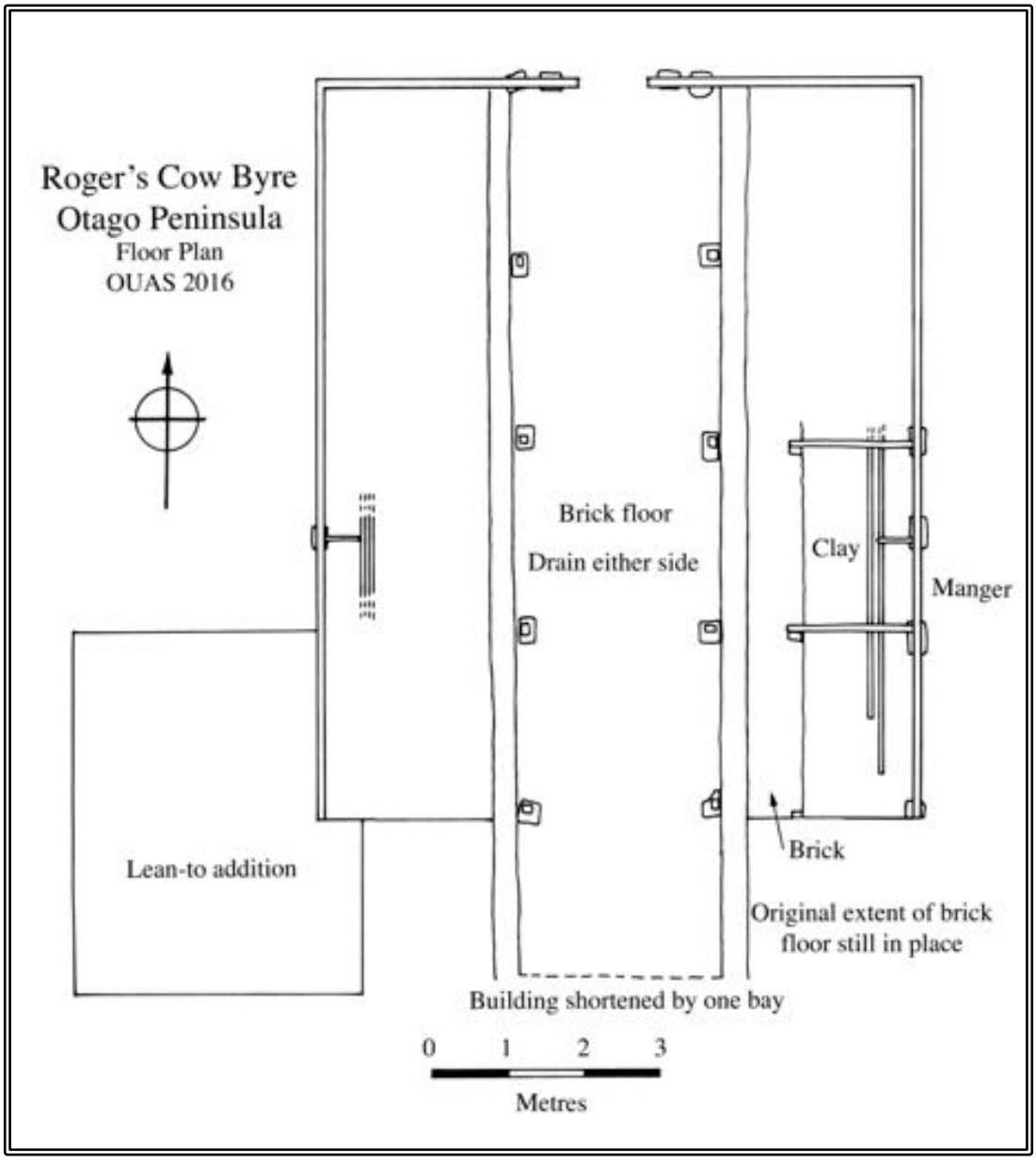

Figure 186
Plan of Roger's byre in 2016.

Figure 187
The most intact and unmodified section of stalls within the byre (on the east side of the building), showing the main internal braced post, the effluent drain, the stall railings and the mangers. The remnants of whitewashing can also be seen.

Figure 188
Detail of one of the mangers.

Figure 189
Inside the byre, showing details of the internal structure on the west side of the building, with the posts and braces intact, but with a mess of infill alterations in the stalls area.

Figure 190
Pit sawing marks on timber framing (floor joist and post brace) in Roger's byre.

Figure 191
The central aisle of the brick floor, with a gentle hump to ensure drainage into the drains running along either side.

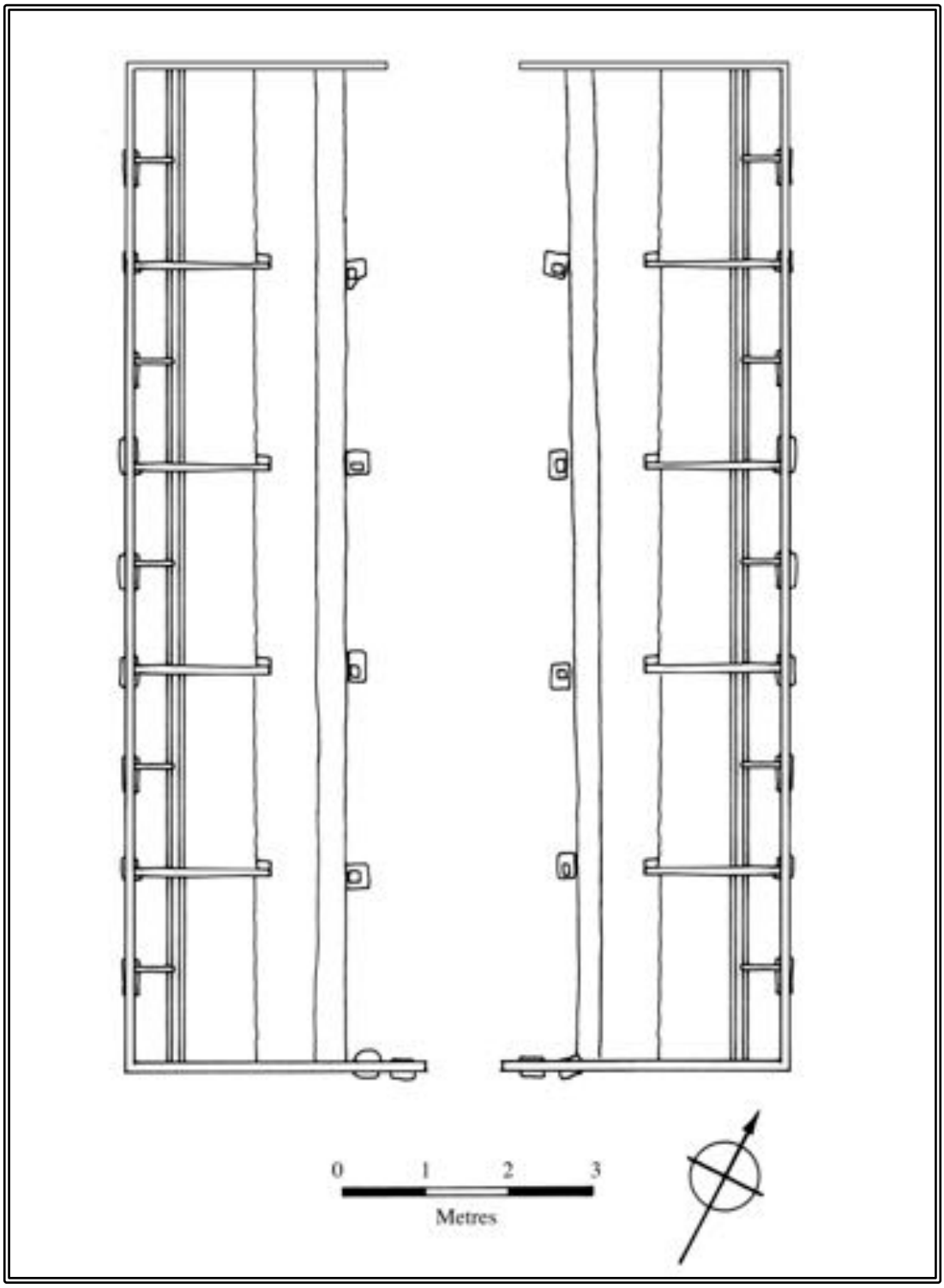

Figure 192
Speculative reconstruction plan of Roger's Byre, based on 2016 recording of the building.

Roger's House (I44/415)

Roger's house is a large twin bay villa located at Roger's farmstead. It was the last house on the Harbour Cone Block to be occupied, but has now stood empty since about 2008. The house sits facing north, with an overgrown garden surrounding it. It is a large house, with ten rooms plus the front verandah has been enclosed. Architecturally it appears as a late Victorian villa, with one of the original sash windows still present in the east bay return. The exterior is clad in rusticated weatherboards and a corrugated iron roof. Original interior features include a pressed iron sheet ceiling in the front eastern room, matchlining, and possibly one or two mantlepieces. However, the house has been much modified over the years, with casement and aluminium windows inserted, more recent burners placed into older fireplaces, and changes to the service rooms at the rear of the house.

Although, as stated above, it has the appearance of a double bay villa, the idiosyncratic internal arrangement and various details (such as the western side door) indicate that the house has developed over time, probably evolving from a much smaller cottage that has been added to on many occasions. This 'core' original was presumably first built in 1866 (when Roger took up the land), and may have survived the 1880 bush fire. Only a more thorough and invasive investigation of the existing house would confirm or deny this.

However, the house as it stands is in very poor condition. Several windows have been cut out of walls, probably using a chainsaw, and the openings roughly boarded over. There are numerous leaks in the roof, which have cause rot in places in ceilings, walls and floors. Woodworm infestation is apparent in several rooms. While not beyond repair, this would be an expensive undertaking.

Figure 193
The front of Roger's house, with one gable end and the enclosed veranda visible through the overgrown front garden. The house faced towards the north, into the sun and towards the farmyard.

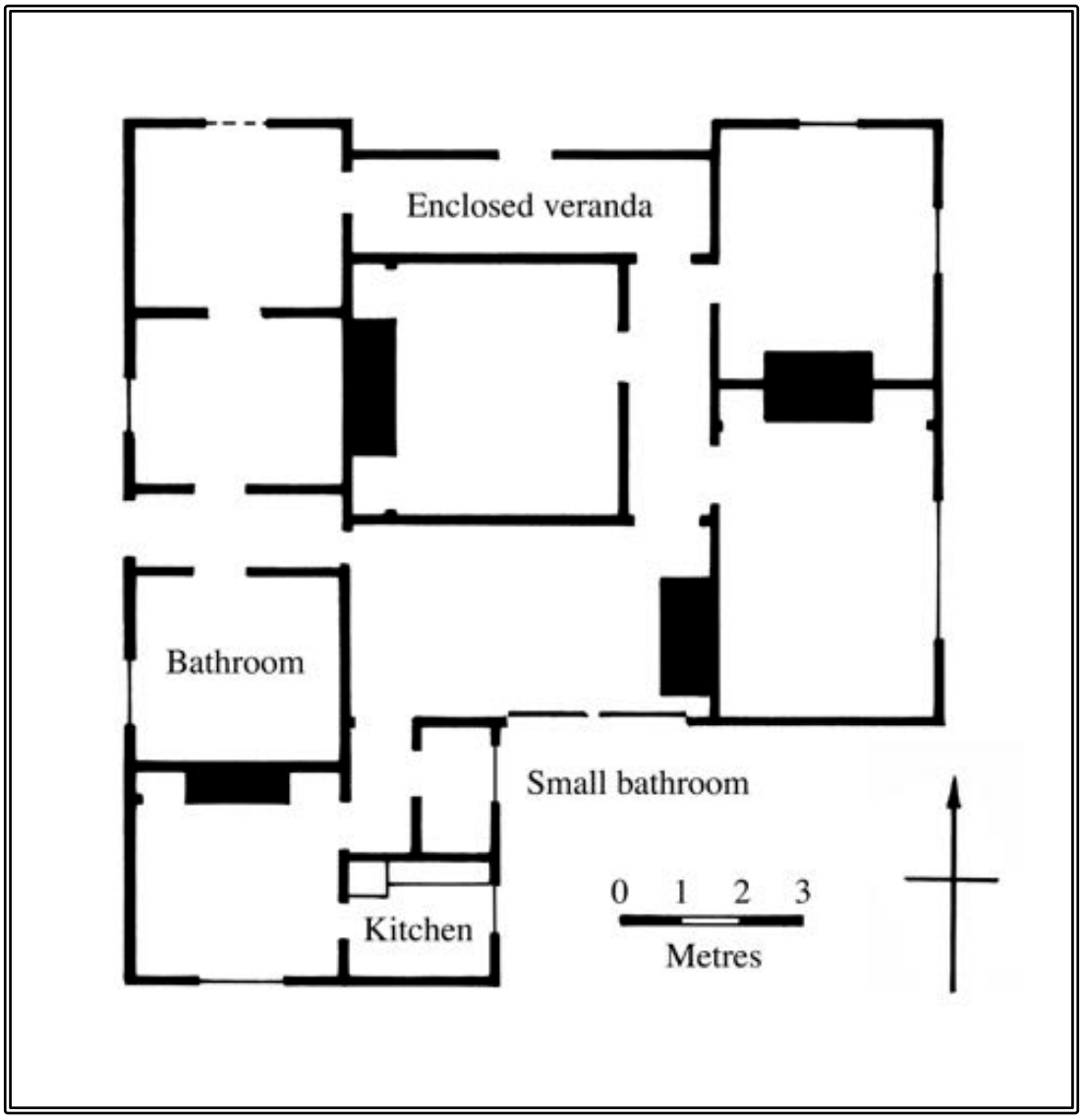

Figure 194
Plan of Roger's House, University of Otago Anthropology Society, 2016.

Figure 195
The rear of Roger's farm. This elevation is in very poor repair, and several windows have been chainsawed out and the openings boarded over.

Figure 196
The east side wall of Roger's House, showing a mixture of sash and casement windows.

Figure 197
Detail of the base of the east side of the house, showing the hardwood piles and bluestone used in the foundations.

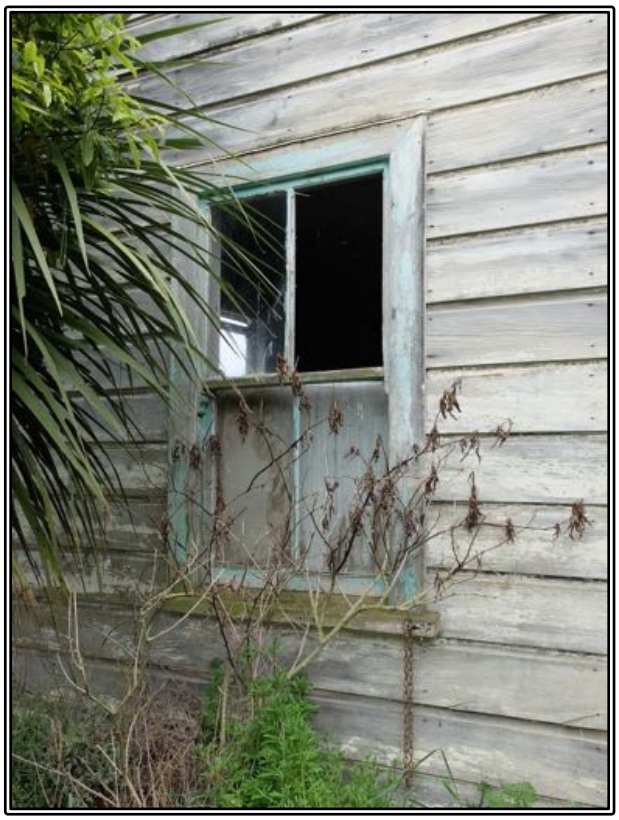

Figure 198
The original sash window in place in the eastern bay return of Roger's house.

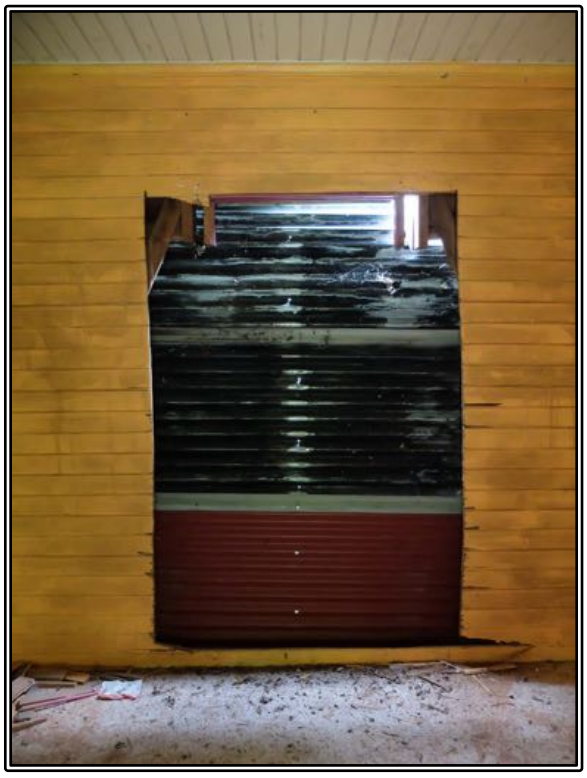

Figure 199
Inside the western bay return of the house, showing where the window has been cut out and the opening covered with sheets of roofing iron.

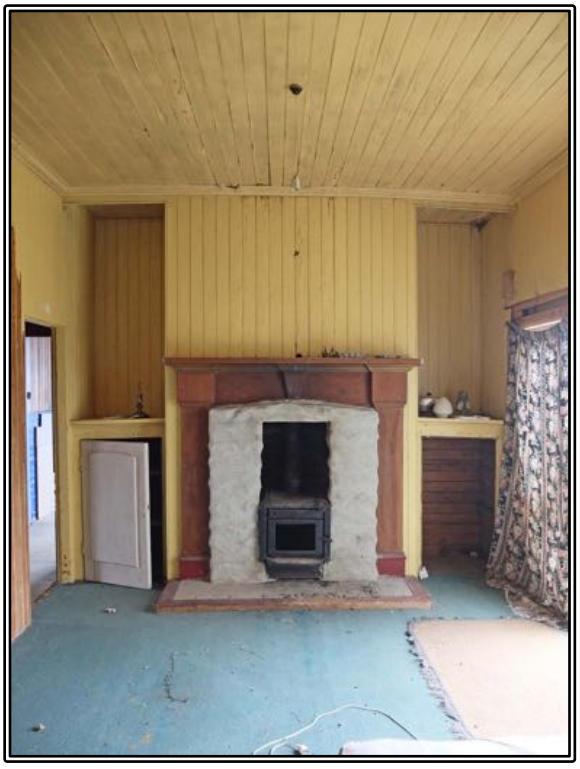

Figure 200
The rear living area in the house, with a much-modified fireplace.

Figure 201
Inside the front eastern room of Roger's house, showing the effect of the leaking roof. The ceiling was pressed thin iron sheets over timber.

Stewart's House (I44/416)

Stewart's house is a small timber cottage located facing north. It has evolved over time from a small rectangular cottage with additions placed on the side and rear, but the original form and construction is readily identifiable. This easy identification is at least in part to the fact that much of the cladding, and part of the framing, of the front of the original part of the cottage has been removed, together with all of the interior cladding of the same. However, the intact roof, north facing aspect, shelter from the south by the farmstead trees, and ventilation due to the missing wall, have probably all combined to assist the survival of the structure by allowing it to remain dry inside, and dry out if damp. Another factor that has influenced the survival of the original portion is the very steep roof pitch, clad in corrugated iron: this is very effective at throwing off water and self-cleaning, and acts as a structural diaphragm.

The cottage consists of the original timber cottage, with lean-to additions to the east side and rear (south). The rear additions are in very poor condition, and have been partly destroyed by falling macrocarpa branches. The east side addition is still intact, but appears to have suffered from much worse timber decay than the original section. This is probably due to two factors: a shallow roof pitch (which does not self-clean and shed water rapidly) and the use of different timber (commercially milled). The overall combined structure measures 30 feet 6 inches by 20 feet (9.3m by 6.1m).

Figure 202
Front ¾ view of Stewart's house, with the original cottage section (with steep-pitched roof) at right and later addition at left.

The original portion of Stewart's cottage measures 20 feet 6 inches by 12 feet 5 inches (6.2m by 3.8m). A large brick chimney is situated at the western end, extending another 2 feet 8

inches (0.8m). The building is conventionally constructed. The floor structure consists of timber piles, bearers and joists and floorboards. The walls are also conventional, with top and bottom plates, vertical studs and diagonal braces. There are no dwangs, but a horizontal board runs around the inside high up on the wall, and is notched into the studs. The studs are fitted to the plates using mortice and tenon joints, which was common practice until the last few decades of the nineteenth century. The framing of part of the rear wall has been removed (when the house was extended) and part of the front wall is also missing.

The roof structure consists of rafters with close-set purlins, which in turn support split timber shingles. The cladding on the walls is plain weatherboards. The roof cladding is corrugated iron, laid directly over the original timber shingles. The roof pitch in the original cottage is very steep.

All of this is conventional practice for the supposed time of construction, the late 1860s. What is less common is the fact that all of the materials in this original section of the cottage are either pit-sawn (all milled timbers) or hand-split (the shingles). The house was quite literally hewn from the surrounding forest as it was cleared to make way for the farm. The additions are of less significance, as they are more conventional (built from commercially milled timbers) and in poorer condition.

The cottage is in poor condition due to the missing elements, but the remaining fabric of the original cottage is in extremely good condition given its long-term exposure. The timber has not yet been identified, but is likely to be broadleaf or totara, given its durability. This means that despite the missing elements the structure is still solid, and is capable of being stabilised and/or restored.

Table 3
Timber dimensions

Member	Dimension	Milling	Comments
Bearer	11.25in x 5in	Pit sawn half-round	
Joist	2.75in x 5 in	Pit sawn	
Floorboards	5.5 x 1.125in	Pit sawn	
Wall frame	4.5in x 2in	Pit sawn	
Rafters	3.75in x 2in	Pit sawn	20.5in centres
Purlins	2.75in x 1in	Pit sawn	6 inch centres
Weatherboards	8in x 0.75in	Pit sawn	

Stewart's cottage and Roger's house are the only two domestic residences to survive on the Harbour Cone Block, out of the more than 40 small farmsteads that once existed there. As discussed above, Roger's house has been extensively altered and expanded, and is in poor condition. Stewart's house remains much more original, retaining its original form and structure to a high degree, despite later additions. Its condition is easy to assess and address, as it is all open to view.

As the last surviving example of an early settler's cottage built entirely from pit-sawn and split timbers cut from the forest as it was being cleared for farming, Stewart's cottage is a highly significant structure with high interpretative and historical value.

Figure 203
End view of the eastern end of Stewart's house, showing the later addition and the mass of fallen tree branches on the rear part of the structure.

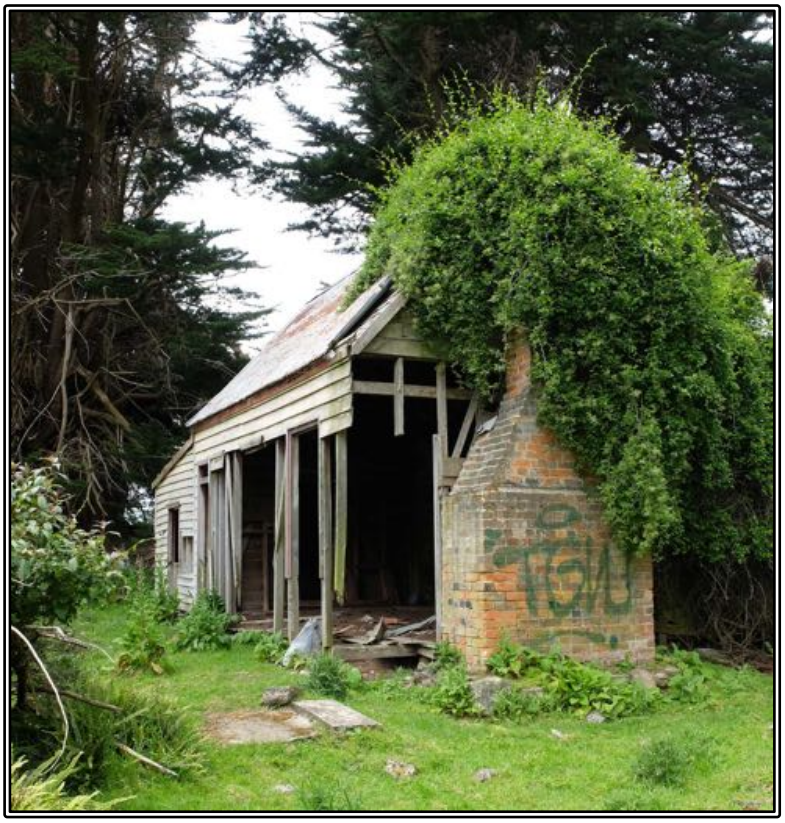

Figure 204
The eastern end of Stewart's cottage, showing the large brick chimney and perilous state of the front framing.

Figure 205
The front wall of the original section of Stewart's house, after the interior was cleared out. Despite the missing framing and cladding the front of the house is still standing reasonably square and level.

Figure 206
The sub-floor structure of Stewart's house where it has been exposed by broken floorboards. A full-round pile supports a half-round bearer, which in turns carries the floor joists and floorboards. All timbers are pit-sawn.

Figure 207
Looking up into the roof structure of the original part of Stewart's house. The timber shingles are all in pace beneath the later corrugated iron.

Figure 208
A detail of the rafters, purlins and shingles in the roof structure. All timber shown here were pit-sawn or axe-split.

Figure 209
Inside the original section of Stewart's house after it was cleared of sheep droppings and debris, looking towards the west end with the chimney and Shacklock coal range.

Figure 210
Looking towards the eastern end of the interior of Stewart's house after it was cleared out. A few scrim boards are still in place, but the wall framing is clear to see. The original pit-sawn weatherboards on this wall have been protected by the later extension built on the end of the cottage.

Figure 211
One of the framing studs of Stewart's house, showing distinctive pit-sawing marks.

6 The Large Stone Structures

While drystone walls and revetment are a common feature of the Harbour Cone landscape, many being derived from field clearance rock, there are several large stone structures that pose particular conservation issues due to their size and/or complexity. These are:

- Lime Kiln (I44/85).
- Allan's House.
- Riddell's farm building stone wall.

Sandymount Lime Kiln I44/85

The structural details and condition of this kiln are covered by Murray & Griffiths (2019), and that report should be consulted in conjunction with this conservation plan. The following is a précis of their report.

The lime kiln is a masonry structure made mainly from limestone, but also includes volcanic tuff and bricks. The limestone is locally sourced, with several outcrops nearby. The volcanic tuff was not observed to outcrop in the immediate area, however, the material is quite commonly found as scattered fieldstone on the peninsula. The bricks used are mainly on the inside of the structure, but were also used to fill random gaps within the external wall. The structure has been built into the side of a hill facing east, and can be divided into three main sections: the charging bowl, firebox and drawing eye. The overall height of the kiln is 5.84m.

Charging Bowl

The upper section of the structure is a 2.6m diameter, 3.1m high cylindrical drum called the charging bowl, where limestone 'charge' was loaded in layers for burning. It also functioned as a chimney during the lime burning process. The charging bowl was constructed from large limestone blocks laid using the random rubble masonry technique where rough stones are used as they were quarried (or found) and only minimal dressing occurred. The inside of the bowl is anticipated to be lined with fire bricks, similar to those observed in the firebox.

Two large cracks are visible in the sides of the bowl. One is ca 8cm at its widest and is also being pushed out by ca 5cm. A second, larger crack has created a large gap of about 20cm halfway down the charging bowl, also with an oblique sideways movement approximately 5cm. A tree growing out of the top of the charging bowl is at least in part responsible for the cracks, and the root ball has created a bulge in the southern side of the bowl. A root growing through the masonry at the base of the central eastern face has made a large void in the masonry approximately 15cm wide by 45cm high.

The limestone used in the masonry is in good condition. The tree growing in the bowl appears to have protected the structure from weathering, but has caused the mechanical damage described above, which has caused much mortar to fall out. Remnant limestone mortar is still visible in the eastern face. The top of the kiln is covered in vegetation so a total wall thickness was not attainable. The top course of stone work is sitting quite loosely with most of the mortar having been removed. The vegetation is aiding in keeping the masonry fixed in place but will need to be removed and the top courses repointed.

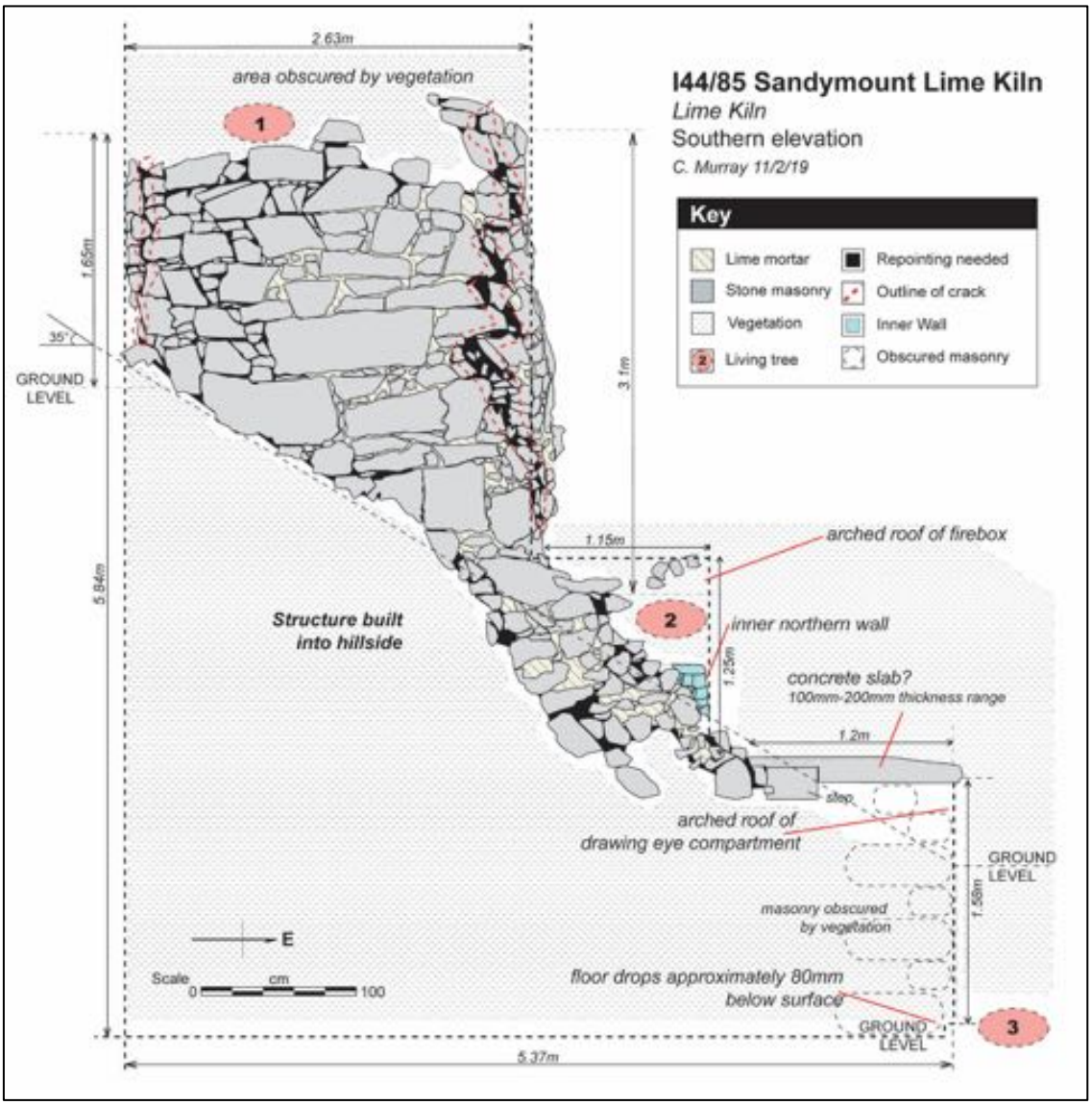

Figure 212
Southern elevation of the lime kiln. 1: charging bowl; 2: firebox; 3: drawing eye (Murray & Griffiths 2019).

Figure 213
The charging bowl of the limekiln. Note the crack running the full height of the structure.

Figure 214
Close-up of one of the cracks in the charging bowl.

Figure 215
Close-up of a crack in the charging bowl. The two layers of mortar in this image indicate that the walls of the kiln were moving while it was in-service, and regular repairs and maintenance had to be carried out.

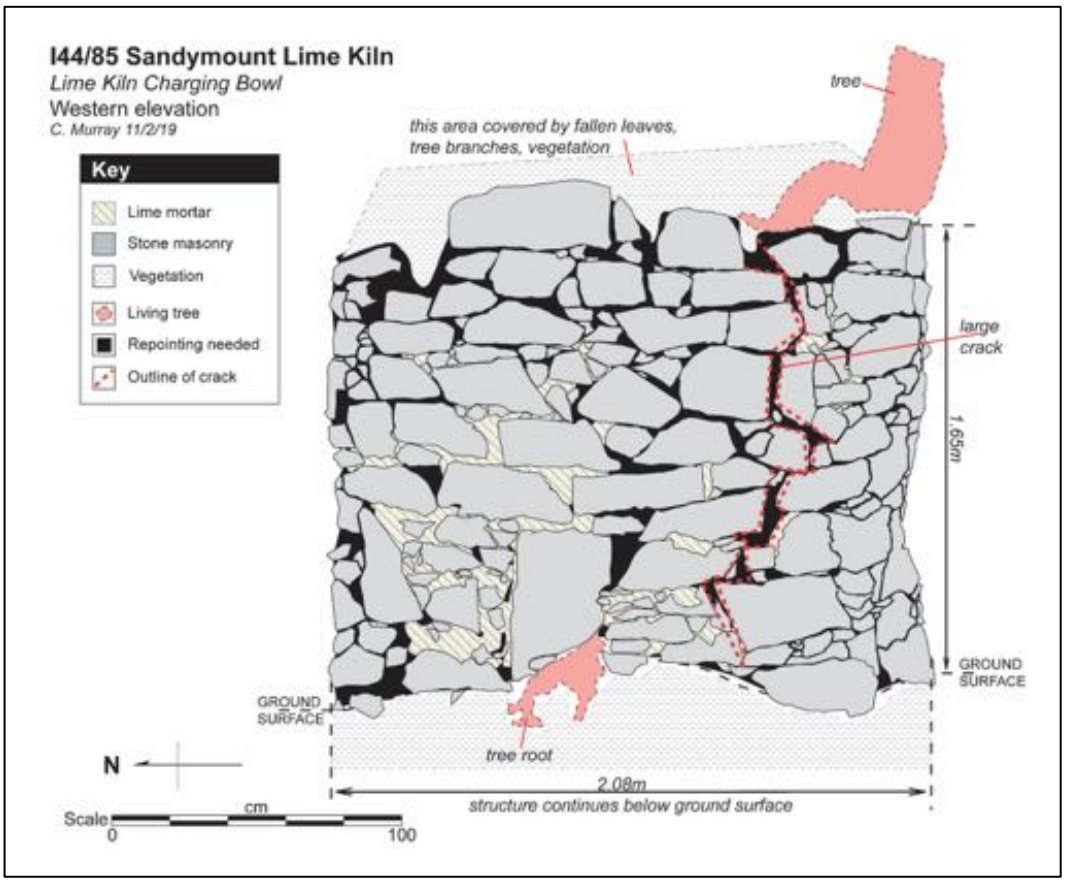

Figure 216
Western elevation of the kiln showing the top section of the structure (charging bowl). A large crack is present in the masonry and a tree is growing on top of the drum with a large root protruding through the base of the structure (Murray & Griffiths 2019).

Firebox

The firebox is an opening at the base of the charging bowl, containing three stoke holes that opened into the bowl to provide an air draft. It was constructed from a mixture of stone and brick masonry. It is 0.75m wide and 0.85m high. The lower courses of the northern and southern external walls are brick with the higher courses using larger dressed limestone blocks. Within the firebox there is a sprung arch made from firebricks. The three stoke holes are at the rear with brick arch surrounds. The centre stoke hole is open and the two holes either side look to have been sealed. The floor of the interior of the firebox is covered in dirt with a few scattered pieces of limestone.

The outer southern wall of the firebox has been pushed out by tree growth, which has destroyed a large section of the roof and is pushing the southern wall out on an angle of approximately 22° to the south. The stonework in the outer southern wall is very unstable. The larger quoins which are missing in this section, are likely the blocks strewn down the hill just south of the firebox entry. A large slab which is the entryway platform to the firebox and the roof of drawing eye compartment is possibly concrete. A dressed limestone step leads up to the concrete platform.

The area directly to the south of the leaning south wall exhibits heavy cattle trampling which has eroded the bank. The cattle damage in this area is contributing to the erosion of the slope and could be causing minor slumping which is affecting the structure.

Figure 217
The firebox, showing the brick firebox arch and the three stoke holes.

Drawing Eye

The drawing eye is at the base of the kiln structure, and is the opening from where the lime was withdrawn from the kiln after firing. The stonework for the drawing eye compartment entryway is approximately 1.58m high and the entryway is 1.5m wide. The external stonework sides and base masonry are laid using the random rubble technique. Cut limestone blockwork with roughly hewn faces forms the archway over this entrance and is largely complete. The drawing eye chamber has an arched roof made from large limestone blocks which make up the inner northern and southern walls. This stonework is in good condition but will need some minor repointing done. The inner rear wall of the drawing eye compartment, as well as the drawing eye chute, are made from bricks. The brickwork is in good condition with only minor repointing needed.

The southern outer stone wall of the drawing eye compartment was obscured by vegetation. The ground is around this wall has been filled in about a metre high against the wall which is part of the entryway to the drawing eye compartment. The floor is covered in vegetation and the remains of a dead sheep. A tree is growing at the eastern base of the structure, in the entryway to the drawing eye chamber. This tree is destroying the apex of the stone arch entryway to the drawing eye compartment and has likely got a root base which extends under the foundations of the structure.

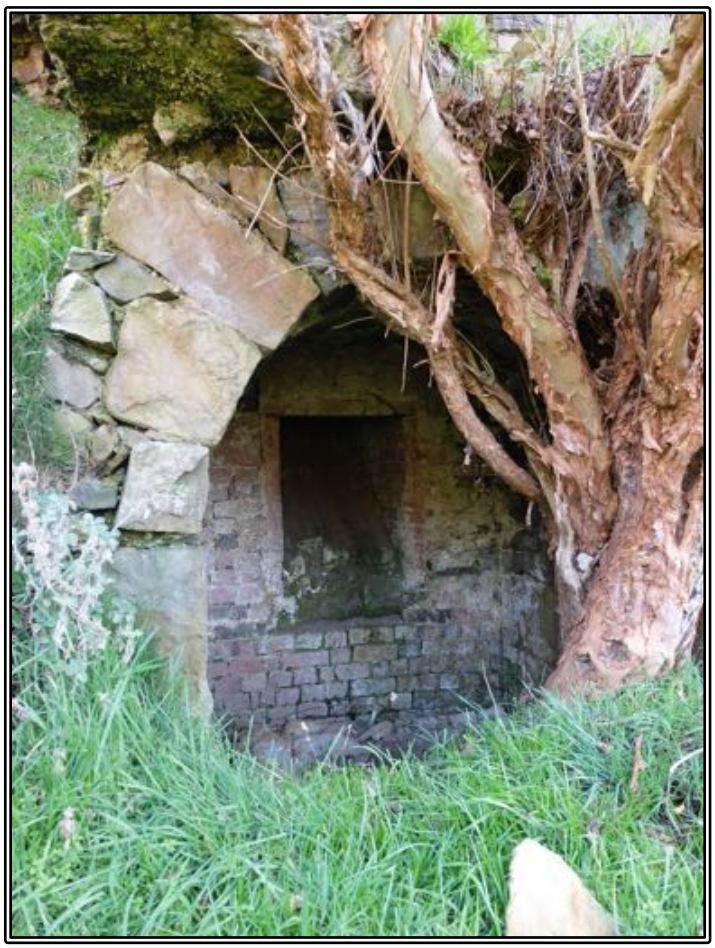

Figure 218
The drawing eye.

Murray & Griffiths (2019) conclude:

The three trees which are growing in and around the lime kiln were observed to be damaging the structure and need to be removed. The masonry around the trees in the firebox and drawing eye chambers will need to be secured before their removal as the trees are holding some of the masonry blocks in place. Prior to tree removal, advice should be sought from an engineer as to whether the root base of the tree growing in the entryway of the drawing eye chamber may compromise the foundations if it is removed. Erosion around this area should also be checked as it could be a contributing factor to slumping if it is occurring. There is also suggestion that slumping directly south of the firebox may be occurring which should also be checked by the engineer as this could be a contributing factor to the large cracks in the charging bowl and the lean on the southern wall of the firebox. A well braced scaffold should be placed around the structure prior to any remedial work being done.

To stabilize the charging bowl, reinforcement with a steel brace, capping of the top courses and repointing in the stonework will need to be done. The large cracks should be mortared and monitored after tree removal to examine if there is any movement in the cracks. The oblique movement of the crack should also be monitored after tree removal, as pressure from the tree's root base is the likely cause of the bulging out of the drum causing the crack to move outward as well as apart.

The southern wall of the firebox will need to be restored as it is danger of collapsing. The stone masons can replicate the masonry work from the northern wall of the firebox, which is still in a relatively good condition. A temporary fence should be put around the lime kiln which is vulnerable to damage from cattle.

Alternative solution:

- Apply galvanised steel bands around kiln.
- Cut out vegetation.
- Apply capping to stonework at top of kiln.
- Monitor movement.

Ie, don't repoint, as the existing pointing has important information about the life and use of the kiln, as illustrated above.

While steel bands (even if painted) will be visually more intrusive, they are preferable from a conservation perspective in several ways:

- Less intrusive into the historic fabric.
- Fully reversible (can be removed with no trace left).
- Option of repointing at a later date remains.

Allan's House

Allan's house is a stone ruin, the highest wall of which stands over two metres high. The rectangular house faced to the north, and there is evidence that a small porch was built around the front door. The walls were built from blocks of cut tuff, with a more formal front facade created by piping grooves in the pointing to delineate large square blocks. Finer cut architectural stone blocks are present, which are possibly from the front facade window openings.

Possibly three chimneys'fireplaces were built into the walls, the most obvious one being in the western wall. Heat reddening of the stone in the fireplace confirm that it was used for some period. It is likely, but yet to be confirmed, that the house had a wooden floor. However, rubble and vegetation within the ruin mean that a closer investigation is necessary.

In several placed tree roots growing in the stonework have damaged the walls, and a small tree was growing out of the western wall. It has been cut out, but it is likely that damage has already been done. This wall has been propped from the outside to prevent collapse.

At present Stuart Griffiths and Carl Murray are investigating suitable lime manufacture to undertake stabilisation of this ruin. Dismantling and reconstruction has been considered, but is not ideal from a conservation perspective due to the intrusive nature.

The house is a good representative example of a small famer's stone house, built by local craftsmen. It is one of the more substantial stone ruins on the Harbour Cone block, especially the western wall. It has high visitor interpretation value, as it is easily accessible, visually impressive, and part of the overall narrative of settlement, development and abandonment that is typical of the small dairy farms on Harbour Cone.

Figure 219
The west wall of Allan's house with built-in chimney, after vegetation was cleared.

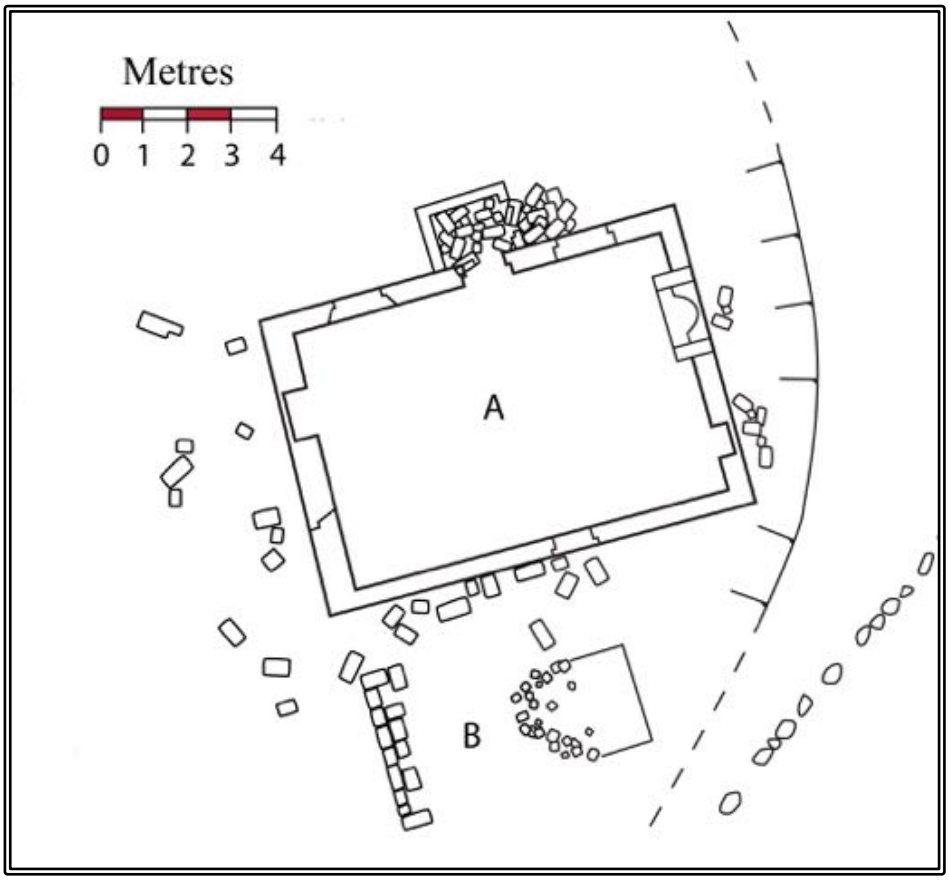

Figure 220
Plan of Allan's house ruin (Kirsa Webb 2009).

Figure 221
The end wall of Allan's house ruin in 2020 with timber props and safety fence in place.

Figure 222
The end view of the standing wall of Allan's house ruin, showing how the wall was constructed, with facing stone and a rubble core. The splitting of this core due to tree root growth is one of the reasons the wall is failing.

Riddell's Stables/Byre Stone Wall (I44/414)

Although Riddell's farm building is a timber structure, it is built on a terrace cut into the hillside, and the upper floor on the hillside side is supported on a stone retaining wall approximately 2m high. This is presently buttressed by the building, but given the very poor condition of this building it may be necessary to remove it. If this does happen, the tall stone revetment will then be exposed. As the wall is 30 metres long and 2 metres high, it is one of the largest masonry structures to survive in good condition in the Harbour Cone Block, and therefore does require separate consideration as a stone structure in its own right.

Wlater Riddell is a significant figure in the history of this area, as well as in the development of the Otago dairy industry (through the Taieri & Peninsula Milk Supply Company). Therefore, his farmstead is an important location for the interpretation of the Harbour Cone Block. If it is not practical to save the timber structure due to its advanced decay, the rest of the site (terrace, house foundations, garden hedges, retaining wall behind the house site, this stone wall) will still require consideration for their heritage significance, and it will be necessary to ensure that this wall is not destabilised by the loss of the timber structure (which may be buttressing it). An engineers input should be sought prior to any changes to this site.

Figure 223
The northern ground floor room in Riddell's farm building, with the stone wall to the rear.

Figure 224
The stables section of Riddell's farm building, with the stone wall to the rear.

7 Significance

Significance is a statement of the value or values of a place to the various individuals or groups who have an interest in it. Some rankings of significance, such as rarity, can be objectively defined, while other rankings will be dependent on the interest group in question.

The Hereweka Harbour Cone Block is an unusual area within which to attempt to define and assess significance, as the whole property was purchased and is managed because of the recognition of the overall heritage, ecological and recreation values of the block. The high value of the heritage landscape is therefore already recognised, and individual elements within that landscape should be assessed both in their own right and as part of the overall integrated landscape.

The Hereweka Harbour Cone Management Plan recognises the historical and cultural significance of the Block. It addresses both the cultural significance of the place to Maori and the significance of the historic (ie European era) sites and landscape.

Assessing Heritage Values

Heritage New Zealand Pouhere Taonga (HNZPT) has a statutory role under the Heritage New Zealand Pouhere Taonga Act (2014) to assess historic significance, and the Department of Conservation uses a modified form of the HNZ assessment system. The assessment criteria are presented in the HNZPT List Proposal form and consist of historical, cultural, aesthetic, archaeological, architectural, scientific, social, spiritual, technological and traditional significance or value. These criteria are further interpreted in Vossler (2001) into three groupings: Historical, Physical, and Cultural. These condensed groupings have been adopted by the Department of Conservation, and are used here to assess the historic significance of historic sites and features on the Hereweka Harbour Cone block.

Historical Context, Values & Significance

The Hereweka Harbour Cone Block is an important example of a colonial-era improved landscape, created as land was surveyed and carved up for small farmers. The historical significance of this is different for Maori and Pakeha.

The Block is an example of "the imposition of a cadastral landscape layer on an indigenous one, … as private ownership was the primary step…." in the creation of the 'improved' landscape (Middleton 2012:40). Surveys, such as the 1863 one of the Block, are generally "presented as neutral, when in fact they are highly ideological, presenting productive units of land that have individual and exclusive property rights, often ignoring topography and ecology" (West 2009:17).

For descendants of the early settlers, the historic context is different: rather than the imposition of a new ideology, the landscape represents the history of early settlement, the development of farming, and the struggle to get ahead in a new country. It is part of the diaspora narrative that is a major part of nineteenth century history, as millions of people left the Old World to make new homes in the New World.

Therefore the Block has high historic significance as it represents important historical narratives and events, although the nature of that significance may vary depending on the interest group in question.

Physical Context, Values & Significance

The Hereweka Harbour Cone Block is a rugged and impressive landscape that is somewhat incongruously close to the major urban centre of Dunedin. It therefore provides easy access to Otago Peninsula landscapes and views to locals and visitors.

The Block also is an important archaeological landscape, with physical archaeological evidence of the efforts of early farming families to break in the land and carve out new homes for themselves. In this respect it shares aspects of the Historical Significance.

All of the house and farmstead sites will include archaeological information, both visible above the ground and out of sight below the ground. This archaeological resource is extremely significant because of its potential to provide information about many aspects of early settlement and adaptation to a new land.

Many of the stone ruins (field walls and homestead sites) have aesthetic and picturesque values, which add to the feeling of remoteness that the Hereweka Harbour Cone Block possesses.

Cultural Context, Values & Significance

The Hereweka Harbour Cone block represents a number of important cultural and social values. The area also has important modern cultural significance.

Kāi Tahu have a long association with Muaupoko (Otago Peninsula) and the mauka (mountain) of the peninsula Hereweka (Harbour Cone). The practice of mahika kai, moving seasonally to gather food and tool-making resources throughout the rohe (area), was a distinct feature of the lifestyle of Kāi Tahu tupuna (ancestors). Hereweka was a part of the mahika kai network of trails, and was likely used for hunting and food gathering.
Hereweka means 'catch weka' and refers to the area being a place where the food resource of weka was found. Hereweka also features in Kāi Tahu oral history as one of the places where Tarewai, a Kāi Tahu warrior chief hid from Kati Māmoe warriors (Kāi Tahu Ki Otago, 2009).

For families with historical connections to the Block, it will form part of their cultural identity.

The Hereweka Harbour Cone block is publically owned and freely accessible (except during lambing), and access to countryside areas is an important aspect of New Zealand culture. The HHC block provides opportunities for walking, sightseeing and heritage tourism within a short drive of central Dunedin. The various farmstead sites and stone walls provide visitors with numerous points of historical interest that add to the experience of the place.

Significance of Individual Sites/Features

The following general rankings of significance and acceptable levels of intervention are used to rank the individual elements within the Hereweka Harbour Cone Block. Most sites are ranked as 3 or 4, as they all contribute to the overall landscape, and the intent of this plan is to manage that landscape as a whole. As intrusive development is not proposed for the Block (and ownership was secured to prevent this very possibility), this presents no particular management issues.

4 Exceptional significance.
Intervention shall be limited to maintenance, preservation, restoration, and reconstruction, as defined by the ICOMOS NZ Charter.[1]

3 Considerable significance.
Intervention shall be limited to maintenance, preservation, restoration, reconstruction, and adaptation, as defined by the ICOMOS NZ Charter.

2 Some significance.
Intervention to recover the cultural significance of the place, or where a compatible use requires the removal of components, these must be recorded fully, or where there are multiple examples in the space, a representative example should be retained.

1 Little significance.
Intervention can include retention and removal of objects to recover cultural significance.

neg Intrusive element.
Intervention should recover the cultural significance of the place, which will involve the removal of the intrusive elements.

These rankings were applied across the significance classes used by Bowman. In the present plan these are classes are Historical, Physical and Cultural significance.

Table 4: Significance of Individual items

Site Description	NZAA No	Significance
Tramway to lime kiln	I44/81	3 Important component of lime industry complex
Leslie's farmstead & Harbour Cone Cheese Factory site	I44/82	3 Early farmstead and significant early dairy factory site. But archaeological site somewhat modified.
First Sandymount lime kiln	I44/85	4 First kiln, representing start of lime industry complex.
Allan's farmstead & forge	I44/96	3 Early farmstead and visually striking ruin
Stone wall, HighamWall 4	I44/102	3 Stone boundary wall, parts in good condition.
stone boundary wall Higham 21a b and c	I44/410	4 Stone boundary wall, northern boundary of HHC Block.
William Larnach's farmstead	I44/412	4 Associated with Larnach. Byre is largest intact building in Block
Farm road - Larnach's to Rogers	I44/413	3 Farm road representing local network of communications
Riddell's house and Sandymout Post Office	I44/414	4 Associated with impotant figure of Riddell. Timber building in very poor condition.

[1] Bowman referenced the Burra Charter, as the New Zealand Charter had not then been ratified.

Roger's house and environs	I44/415	4 Farmstead would rank 3, but byre is outstanding example of early cow byre built from pit sawn timbers.
Stewart's house and environs	I44/416	4 Farmstead would rank 3, but cottage is outstanding example of early settlers cottage built from pit sawn timbers.
Stewart's road	I44/417	3 Farm road representing local network of communications
Ellis' house and environs	I44/418	2 Early farmstead. Important as element in landscape, but probably limited archaeological potential
Pemberton's house and environs	I44/419	2 Early farmstead. Important as element in landscape, but probably limited archaeological potential
Arnott's house and environs	I44/420	3 Early farmstead. Important as element in landscape, byre foundations present,
Arnott's road	I44/421	3 Farm road representing local network of communications
Wally Hunter's house	I44/422	3 Early house, stone ruins with archaeological potential
Rutherford's road	I44/423	3 Farm road representing local network of communications
road to goldmine	I44/424	3 Farm road representing local network of communications
west fork - Rutherford's road	I44/425	3 Farm road representing local network of communications
Rutherford's house complex	I44/426	3 Early farmstead. Important as element in landscape, ruins of several structures.
Rutherford's gully track	I44/427	3 Farm road representing local network of communications
Nyhon's house	I44/428	2 Early farmstead. Important as element in landscape, but probably limited archaeological potential
Nyhon's cow byre	I44/429	3 Early stone cow byre ruin on prominent ridge
stone revetting	I44/430	3 Highcliff road representing local network of communications
Robert Dick's house complex	I44/431	3 Early farmstead. Important as element in landscape, but probably limited archaeological potential
Leslie's road	I44/432	3 Farm road representing local network of communications
Stone wall Higham Wall 10	I44/433	2 Stone wall representing internal farm operations
Stone wall Higham Wall 11	I44/434	2 Stone wall representing property boundary
discontinuous stone boundary wall Higham Wall 12 and 13	I44/436	4 Stone boundary wall, parts in good condition. Includes augered timber posts: excellent example of combined wall/fence
Leslie #1 henhouse and cowshed	I44/437	2 Example of small farmstead complex
stone revetting below road at Leslie's #1	I44/438	3 Highcliff road representing local network of communications
stone culvert and track over gully near Leslie #1	I44/439	3 Early track representing local network of communications
discontinuous stone boundary feature	I44/440	2 Stone wall & ditch representing property boundary. Wall is poor quality
Bacon's Bridle Track and extension	I44/442	4 Farm road representing local network of communications
Allan's road	I44/443	3 Farm road representing development of farm property
macrocarpa stands above Highcliff Road	I44/444	3 typical stand of historic macrocarpas indicating farmstead presence.
Leslie #2 house and environs	I44/445	3 Example of small farmstead complex
Limestone crushing plant	I44/447	2 example of later expression of important limestone industry
Robert Dick's hedge & stone boundary wall	I44/448	2 Stone wall representing property boundary
stone wall feature Higham wall 14	I44/449	2 Stone wall representing internal farm operations. Poor condition

Higham wall 20 stone boundary wall	I44/452	3 Stone wall representing property boundary
Farmstead site, Smith's Stream	I44/982	3 Site representing early farmstead
Stone revetment below Highcliff Road	I44/1014	3 Highcliff road representing local network of communications
Stone wall beside Bacon's Track	I44/1015	3 Stone wall representing property boundary
Stone quarry beside Bacon's Track	I44/1016	2 Quarry used for local construction purposes
Stone wall on Rutherford/Nyhon boundary	I44/1017	3 Stone wall representing property boundary
Stone wall on Rutherford/Pemberton boundary	I44/1018	4 Stone wall representing property boundary. Very well built
Building site, Highcliff saddle	I44/1036	2 Site representing early farm buildings
Sites outside Harbour Cone boundaries		
Sandymount creamery	I44/72	3 Concrete foundations of important local industry
Limestone kiln	I44/83	4 Kiln from important local industry. Impressive stone structure
Limestone kiln	I44/84	4 Kiln from important local industry. Impressive stone structure
Sandymount School	I44/446	
stone wall above Camp Road	I44/411	2 Stone wall representing property boundary. Probably poor condition.
Forbes' house and environs	I44/435	2 Site representing early farm buildings
Edmund Ward's house complex	I44/441	3 Site representing early farm buildings, with ruins of house and byre, stone wall
Edmund Ward's road	I44/450	2 Early track representing local network of communications. Poor condition

9 Factors Affecting Heritage Values

Many factors can affect the heritage values of a place, both positively and negatively, and directly and indirectly. Some are dependent on the management of that place, while others are outside the direct control of site management. It is important to consider these factors, so that those that can be managed can be identified, and those that cannot be managed can be mitigated if possible.

Some individual factors can be either positive or negative; for example management decisions can damage heritage fabric if poor advice is followed, or conserve heritage fabric if good advice is obtained.

Natural Processes

Natural processes of decay are one of the greatest ongoing threats to the farmstead remains and stone walls. The surviving timber buildings are at the greatest risk from timber decay and insect infestation. Stone ruins can be slowly eroded by wind, rain and frost heave, althought the greatest threat is probably stock rubbing and trampling.

Some hillsides are unstable on the Otago Peninsula, and there is evidence that subsidence has damaged Larnach's farmstead in the past (Petchey 2018). Landslips have to potential to damage parts of the overall landscape and individual sites, and to impede public access to the property.

Management & Use

Good management is essential for the long-term survival of the evidence of human occupation on the HHC property. If the appropriate conservation and management decisions are made and acted on now, the maximum amount of the heritage landscape possible will be preserved for future study and visitation.

The HHC landscape has a tripe use: farming, conservation and public recreation.

The farming activities continue the nineteenth century purpose of the place. This is sustainable, but needs careful management. Cattle in particular can be destructive to archaeological sites by trampling and rubbing, but sheep maintain a grass sward that allows historic features to be seen with minimal impact on those features.

The other present use of the property is for public visitation (recreation, heritage tourism, back country walking point of interest), research (archaeology, history of early settlement, local history) and education (history, farming and land development). These uses will continue for the foreseeable future. The positive aspects of these uses are large, particularly in gaining increased recognition of the historical importance of the site at both public and professional levels. There are some associated threats, in particular the possibility of removal of material (fossicking and collecting) and vandalism.

Conservation & Adaptation Works

Work on the individual sites in the HHC block for either conservation or adaptation purposes has the potential to be either beneficial or damaging. In either case the principles as laid out in this Conservation Plan should be followed. The long-term preservation of the heritage values of the HHC landscape must be paramount in any decision making process.

Disasters

In the aftermath of the Christchurch earthquakes there has been a nationwide focus on the seismic strength of all buildings, and heritage buildings constructed from unreinforced brick and masonry have come under particular scrutiny. The only intact standing structures on the HHC property are timber, and so are not a particular threat. However, there are several stone ruins with standing walls and the limekiln with its standing barrel. These are not buildings that people can enter, but they may pose a risk to visitors in their vincinity. Professional advice on their stability and the associated health & safety requirements should be sought.

Fire risk is a particular threat to the timber buildings. The Mount Aurum Homestead at Skippers was an actively conserved historic place that was managed by the Department of Conservation, and was burnt down after a visitor lit a fire in 2018. There are few opportunities for FENZ staff to reach these structures in time to save them in case of fire. The fire risk is best managed by:

- Provision of good signage warning of fire risk.
- A regular inspection and maintenance programme, in particular clearing rank vegetation away from the buildings.

Information Loss

The loss of information regarding the history of the family farms on the HHC block has resulted in many gaps in our knowledge.

The death of people with detailed knowledge of the area poses a risk of information loss, but this is mitigated by the large amount of collated material that is either published or held in museum/archives collections.

Visitor Hazards

The HHC block poses no unusual hazards for visitors, but it is an exposed and rugged landscape, and unfit or ill-prepared visitors may experience problems. Signage at points of entry should make it clear that suitable clothing and preparation are necessary.

Unpermitted Activities

One ongoing problem at many heritage sites has been fossicking. Many places have been repeatedly dug over in the search for bottles and other artefacts. Increased public awareness of the HHC landscape has the potential to be accompanied by increased risk of fossicking. Public awareness and public presence on the property can work to discourage fossicking, as people engaged in this activity usually avoid being seen.

Incremental Change or Loss

This is the process of 'death by a thousand cuts' whereby many small modifications add up over time to a major loss of or damage to original fabric. This can be the result of either officially sanctioned or unpermitted activities, but the long-term results can be the same.

Good management policies that are consistently applied over time can avoid this issue.

Visitor Impacts

Visitor impacts can be a major problem at historic sites. Erosion from foot traffic and repeated touching can damage sites and objects. In the 1990s the Department of Conservation carried out repairs to the earth embankments at the Alexandra Redoubt at Pirongia where visitors had worn paths that had then started erosion. In more populous places visitor impacts can be even more extreme, a notable example being the serious erosion around Stonehenge in Britain, which led to the exclusion of visitors from within the stones from 1977.

Visitation in the HHC block is not high enough at present to cause these types of problems. The greatest potential negative visitor impact is vandalism (discussed above).

Overall, increasing visitor numbers to the HHC block sites would have greater positive than negative effects, as it would raise the profile of the place and enable more funding and resources to be directed to the conservation of the place.

Loss of use

The original purpose of the historic farmsteads as family homes and workplaces has ceased to exist, although the wider landscape is still farmed on a more extensive basis. The present use as a visitor attraction will continue in the foreseeable future. The presence of the farming operation is essential to the public enjoyment of the present cultural landscape, as the grazing maintains a grass sward, the presence of sheep maintains a cultural continuity of use, and the economic use of the land pays for maintenance of fences, gates etc.

Public Support

Public support is important for the future of all heritage places, as many funding decisions are made on public access and use. Increased visitation and use of the HHC block would justify further expenditure of public funds.

Living Heritage and Engagement

The HHC block is a significant historic landscape. Visitors can appreciate the difficulties that were involved in breaking in this steep rolling country by hand. The history of early European settlement of the Otago Peninsula is best appreciated by experiencing the place.

Positive & Negative Factors

The positive and negative factors identified in the discussion above can be summarised in a series of bullet points:

Positive Factors

- Good public support.
- Good support from DCC.
- Good support from New Zealand Historic Places Trust.

Negative Factors

- Natural deterioration.
- Disaster risk, particularly fire.
- Fossicking & theft.
- Vandalism.

10 Conservation & Management Policies

Partnership

The main partners in the management of the Hereweka Harbour Cone block are the Hereweka Harbour Cone Trust, the Dunedin City Council and Heritage New Zealand Pouhere Taonga.

All ongoing maintenance, conservation and restoration work should include full and ongoing consultation with the main partners, and be guided by this conservation plan. All actions that involve any modification to the heritage sites will require that statutory involvement of Heritage New Zealand through the archaeological provisions of the HNZPT Act 2014.

Conservation Standards

The ICOMOS New Zealand Charter provides the main guiding set of principals in the management of historic sites (see Section 9.3 below for full text).

Research

Any proposed work, be it conservation or adaptation focused, must be planned with a full understanding of the history and significance of the affected place or item. Adequate research must be carried out before any such work proceeds to ensure that all values have been identified and suitably considered.

Skills

Any person who undertakes work on any sites or features in the HHC block must have the suitable skills and knowledge to carry out that work to the highest of professional standards (see Section 16 of the NZ ICOMOS Charter). All work should be overseen by someone with both the necessary skills and good understanding of the conservation principles outlined in this Conservation Plan.

Period

The HHC blockis a palimpsest; the product of changes and additions over many years. All periods will have left archaeological evidence, and this evidence should be carefully considered before any changes are made. In most cases the structures on the Block are ruins, and they should be managed to reflect this, rather than being returned to the form of an earlier period.

Intervention

Intervention means any activity that causes any disturbance or alteration to a place or its fabric. The different levels of intervention range from non-intervention (do nothing) to reconstruction (to build again to an earlier form using new materials). Full definitions of these terms are given in the ICOMOS New Zealand Charter, reproduced in the Appendix. All intervention work should be fully documented.

Preservation

Preservation means to maintain a place with as little change as possible. It involves the least degree of intervention necessary to ensure its long-term survival and continuation of its cultural heritage value.

At all times it must be remember that Section 18 of the ICOMOS NZ Charter states that the patina of age is a significant aspect of the authenticity and integrity of a place.

Maintenance

Maintenance means regular and on-going protective care of a place to prevent deterioration and to retain its cultural heritage value. Maintenance is essential for the ongoing care of the timber structures in particular (Larnach's byre, Roger's byre, Stewart's house).

Stabilisation

Stabilisation means the arrest or slowing of the processes of decay.

Repair

Repair means to make good decayed or damaged fabric using identical, closely similar, or otherwise appropriate material.

Restoration

Restoration means to return a place to a known earlier form by reassembly and reinstatement, and/or by removal of elements that detract from its cultural heritage value.

Reconstruction

Reconstruction means to build again as closely as possible to a documented earlier form, using new materials.

Adaptation

Adaptation means the process(es) of modifying a place for a compatible use while retaining its cultural heritage value. Adaptation processes include alteration and addition. This approach is acceptable where this is the only means for an historic building's long-term survival. It is essential that any adaptation does not alter the overall layout, appearance, decoration or other core cultural heritage value of the place.

Seismic Strengthening

No seismic strengthening is required for the existing stone house and field wall ruins, as none constitutes a building or structure that anyone can enter. The lime kiln (I44/85) is potentially very susceptible to earthquake damage. This is highly unlikely to pose a risk to

any person (it is remote and not a structure built for occupation), but it would cause the loss of a significant heritage structure.

The timber buildings should be assessed by a suitably qualified engineer, but in general are not expected to be earthquake prone. However, Riddell's byre/stables building is dangerous and should not be entered by the public at any time.

Fittings & Chattels

There are few fittings or chattels. The Shacklock coal range in Stewart's cottage (I44/416) and the Zealandia coal range at Larnach's farmstead (I44/412) are both mounted in brick fireplaces. The single cylinder engine at Stewart's cowshed is in the remains of the engine room of that structure.

Risk Management & Disaster Provisions

The greatest risk to the timber buildings is fire. Suitable fire protection precautions should be made (bearing in mind the remote nature of the site). Rank vegetation should be kept clear from around the structures.

Tree fall is a threat to both timber buildings and stone ruins. The greatest threat is from large macrocarpa trees planted around farmstead sites. These trees generally have high heritage values in their own right, but do require pruning and maintenance. Riddell's farm building and Stewart's cottage have both suffered damage from tree fall.

Tree/limb falls also pose a threat to visitors, especially in high winds. This is not expected to be a high risk (as visitors would usually not be present in poor weather), but remains a posibnility in areas of high visitor use.

Setting

Any interventions in the vicinity of the HHC block must be carefully considered so as to not detract from the setting and appearance of the existing heritage fabric.

Appropriate use

The heritage visitor use of the HHC block, combined with the current farming operation is consistent with the ICOMOS charters, as it both continues the original use of the heritage place, preserves the original fabric, and interprets the original use to the public. There is need to balance modern farming requirements, in particular the management of cattle, with the conservation requirements of the place and heritage sites.

Visitor Access & Facilities

Public access to the HHC area is free and open, but is practically constrained by the hilly nature of the place and by the timing of lambing during spring. Generally only able-bodied people will be able to use the whole area. Visitor facilities are limited: there are no toilets or shelters, and no potable water supplies.

Statutory requirements

Any work that is undertaken must comply with all relevant legislation, and all necessary permissions must be gained prior to work commencing. Relevant legislation includes (but is not limited to):

Building Act 2004
Heritage New Zealand Pouhere Taonga Act (2014) (esp. archaeological provisions)
Resource Management Act 1991
Health & Safety in Employment Act 1992
Reserves Act 1977

Monitoring

During any maintenance, repair or adaptation programme all work should be monitored by a suitable qualified and experienced person to ensure that it is done to the required standards, and to make a record of work undertake (see also below).

Recording of Work

A permanent record should be kept of all work that is carried out on the heritage fabric of the HHC block. This should consist of a written description of work carried out, and dated photographs showing the area in question before and after work. This approach will enable future custodians of the site to be able to determine what is original heritage fabric, what is more recent, and what modifications and/or restoration has been carried out. Such knowledge will allow future decisions to be made based on a full understanding of the site.

Review of Conservation Plan

This plan is based on current conservation policies, current understanding of the heritage fabric of the HHC block, and current use of the site. Any or all of these factors can change over time, and it is important that this Conservation Plan is periodically reviewed and updated if necessary.

11 Implementation

The management of the historic and archaeological sites on the Hereweka Harbour Cone Block depends of preserving the significant elements of the archaeological landscape in a sustainable way, that is balanced with the ecological, environmental, recreational and farming values of the place. In many instances a simple policy of minimising impact on heritage sites is the most effective policy. But in some instances policies of active management and intervention are necessary: this is especially the case with the timber and stone standing structures discussed in this plan, and for the stands of trees (mostly macrocarpas) which are living growing organisms as well as historic features.

Individual recommendations are given here for the management of significant features, and Table 5 provides an overview of management of all recorded archaeological sites.

Archaeological Authority Process

Any work that may affect an archaeological site, including the felling of trees planted in association with these sites, will require an Archaeological Authority to be issued under the *Heritage New Zealand Pouhere Taonga Act 2014* by Heritage New Zealand, prior to the start of any on-site work.

Any such application will require an assessment to be prepared by a suitably qualified person, and may require consultation with affected parties. If an authority is issued, it usually comes with conditions that must be met. These conditions generally involve minimising damage, recording of any archaeological evidence, and full reporting. This work must be carried out by someone formally approved by Heritage New Zealand to do so.

Minimising Impact

In general, a policy of minimising impacts and potentially damaging activities at or near archaeological and historical sites should be followed.

No ploughing or other earthmoving should be undertaken on or near any known historic site, including all of those described in this plan.

Any such activity that is proposed should be assessed by a suitable qualified person, and will probably require an Archaeological Authority from Heritage New Zealand Pouhere Taonga.

Timber buildings

The surviving timber buildings are critical management priorities, as they are highly susceptible to deterioration, and may reach a point of no return or succumb during a storm if weakened. The recommended priorities are:

Larnachs Byre. Significant due to association with Larnach and his model farmstead. Large impressive building. Role in promoting good animal management.

- Commission report by engineer.
- Improve drainage system around byre, install cut-off drains on track, investigate drainage system for overall farmyard.

- Undertake structural remediation (foundations, connections within building structure, missing internal posts and supports).
- Treat for insects.
- Undertake external restoration. Reinstate board and batten cladding on missing three walls. Repair/renew roof with short-run corrugated iron.

Roger's Byre. Significant as example of small early byrebyre and construction using pit-sawn timbers.

- Commission report by engineer.
- Remove intrusive additions (if not supporting main structure).
- Undertake structural remediation (check foundations, connections within building structure).
- Treat for insects.
- Undertake external restoration. Reinstate board and batten cladding on missing two walls and repair on other two. Replace roof with new or good contemporary short-run corrugated iron.

Stewart's House. Significanty as example of early settlers cottage built from pit-sawn timbers cut from clearing the land for farming.

- Clear treefall around house, and prune nearby trees to remove further threat.
- Commission report by engineer.
- Remove intrusive additions (if not supporting main structure).
- Undertake structural remediation (check foundations, connections within building structure). Replace missing structural elements.
- Treat for insects.
- Either: Undertake external restoration. Reinstate weatherboard cladding and basic external details (doors, windows). Ensure house is stockproof. Ensure ventilation and weathertightness.
- Or: Construct roofed structure over cottage to protect it from the weather and preserve it as-is with reduced level of structural intervention.

Roger's House. Significant as last occupied house on block. Good example of evolved farm house. May contain evidence of early cottage.

- Probably too deteriorated for economic repair, unless specific use can be identified.
- Carry out economic analysis: is there a need for abuilding on this site? Would it be economic to retore and use the house?
- Record in detail, with emphasis on early construction evidence.
- Decide on fate of structure.

Riddell's Farm Building. Significant due to association with Walter Riddell. Also good example of combined farm building, with byre, stables and barn all in one structure.

- Probably too deteriorated for economic repair.
- Commission report by engineer.
- Determine whether small part (stables) can be practically saved.
- Prune overhanging macrocarpa trees.
- Assess stone wall for stability. Undertake remedial work to ensure stability.
- Manage overall Riddell farmstead site as single large significant site.

Stone structures

The surviving stone structures are important management priorities, as they are susceptible to deterioration, and may reach collapsed if sufficiently weakened. As discussed above, the value of many of the stone walls and ruins is as ruins, and so restoration to earlier forms is not recommended in most cases. The exceptions to this are some stone walls (see below). The recommended priorities are:

Lime Kiln. Significant as the first Sandymount kiln, and associationwith important local industry.

- Investigate alternative recommended stabilisation methods:
    - Stabilisation and repointing, or
    - Stabilisation and banding with galvanised steel bands.
- Remove vegetation by cutting and poisoning.
- Repairs/reconstruction of structure following expert advice.
- Investigate stock control options.

Allan's House Ruin. Significant as a representative example of a small settlers stone house. Visible and easily visited ruin.

- Investigate options for wall stabilisation.
- Stabilise high west wall. Stabilise (possible partly reconstruct) other three walls.

Riddell's Farm Building Wall. Significant due to association with Walter Riddell. Also good example of combined farm building, with byre, stables and barn all in one structure.

- Determine future of timber building.
- Obtain engineering advice on wall prior to any interventions in timber building.
- Determine methodology to ensure wall stability is sustained whether or not the rest of the building survives.

Drystone wall conservation programme

Although the ruinous condition of many stone structures on the Block has been identified as an important aspect of their values, there is a good argument for the restoration of some of the stone boundary walls. These were intended to be continuously maintained, and some walls remain in good condition. However, they are deteriorating, partly due to stock movements. As the walls were not built with any mortar, they obtain all of their strength from the placing of the stones, and modern stabilisation using mortar is not an option. Several very well built and impressive walls are recommended here for a repair and maintenance programme, to return them to their functional condition. Other walls will require work to stabilise them, which may involve replacing some stones to weak sections.

A long-term drystone wall maintenance and repair programme should be out in place, with the aim of doing a set amount of work each year and steadily working through the series of historic stone walls on the property. Many of these have suffered from years of stock trampling without any repairs. They are an important physical and very visible element of the archaeological landscape, and represent past property boundaries and land management practices. The carving of the landscape into what are now recognised as small sub-economic

units is represented by these walls. They also represent vast amounts of backbreaking work by the pioneer farmers as they cleared their land for the plough.

This could also be designed as a training programme, giving the opportunity to teach drystone walling techniques.

The programme should focus initially on the high quality and highly visible walls that are visibly in need of repairs. The suggested initial programme is:

1. I44/1018 Wall beside Rutherford's Road West.
2. I44/436 Wall on Leslie/Allan boundary (Higham wall 13)
3. I44/410 Wall on northern boundary of HHC Block.
4. I44/426 Rutherford's farmstead walls (enclosure, house ruin, farm buildings)
5. I44/102 Wall on Arnott boundary (Higham wall 4, 4A)

Tree maintenance programme

A long-term tree maintenance programme should be put in place, with the aim of doing a set amount of work each year and steadily working through the historic stands of trees. The work would mainly involve the removal of dead timber and pruning live trees to maintain their health, ensure historic sites are not damaged or obscured, and ensure public safety.

Pragmatically such a programme may have to concentrate on trees away from the Highclliff Road unless a clear and immediate threat is identified, as the costs of traffic management are very high.

The recommended initial programme is:

- Stewart's farmstead (to prevent damage to Stewart's House).
- Rutherford's farmstead (to prevent damage to stone walls and house ruin).
- Allan's farmstead (to prevent damage to house ruin). Proximity of trees to road will need to be determined.
- Larnach's farmstead (trees on hillside above farmstead: several have failed in recent years).
- Riddell's farmstead (trees along road). Needs to be done, but problematic because of traffic/road control requirements and added cost.

After these initial sites have been addressed, the overall block should be reassessed and reprioritised.

Weed inspections

Noxious plant control is an ecological/environmental issue. However, weeds can also invade and obscure heritage sites. Any weed control programmes should pay particular attention to the significant sites identified in this plan, and include them in any control work.

However, care must be taken not to spray or remove significant heritage plants. An example are the box hedge plants that line the front path to Allan's house ruin. The ruin itself requires

regular spraying for weeds, but the spray must be carefully confined to the well-understood target species only.

Track network use

The Hereweka Harbour Cone Block has an existing network of walking tracks that already partly uses the historic track network. Other historic tracks are not presently used.

A review of the walking track network should be undertaken with the intention of progressively opening up the historic track network and utilising those routes as much as possible. Pragmatically these routes often offer well-graded tracks, but more importantly they offer the opportunity to interpret the cultural and archaeological landscape from the perspective of those who lived and worked in it.

An example is Allan's Road. This is not presently utilised, but is would provide a hitherto unused route around the mid-flank of Harbour Cone, and with a short extension cut could link with Leslie's road to provide a circumnavigation of the Cone.

Stock management

In very general terms sheep are good for archaeological and historic sites, while cattle tend to be damaging. Cattle grazing is an important part of the stock management of the property, especially with regard to controlling certain weed species.

Stock management should be discussed with the lessee (Brendon Cross), with the aim to remove or minimise cattle presence around certain key sites. These are generally the standing structures and the better examples of stone field walls. In some cases features may need to be fenced off, either permanently or temporarily when cattle are in the area.

Overview Management Schedule

Table 5 provides an overview of the proposed heritage management recommendations. In many cases the archaeological sites/features can simply be left alone, with periodic checks for deterioration. Specific intrusive interventions are mainly dealt with in detail above.

Table 5
Overall works implementation recommendations

Site Description	NZAA No	Recommended works.
Tramway to lime kiln	I44/81	None. Periodic inspection to monitor any damage/deterioration
Leslie's farmstead & Harbour Cone Cheese Factory site	I44/82	Inspect trees, prune if necessary (non-urgent)
First Sandymount lime kiln	I44/85	Detailed above. Remedial work required.
Allan's farmstead & forge	I44/96	Detailed above. Remedial work required
Stone wall, HighamWall 4	I44/102	Detailed above. Remedial work required.
stone boundary wall Higham 21a b and c	I44/410	Detailed above. Remedial work required

William Larnach's farmstead	I44/412	Detailed above. Remedial work required
Farm road - Larnach's to Rogers	I44/413	None. Periodic inspection to monitor any damage/deterioration
Riddell's house and Sandymout Post Office	I44/414	Detailed above. Remedial work required
Roger's house and environs	I44/415	Detailed above. Remedial work required
Stewart's house and environs	I44/416	Detailed above. Remedial work required.
Stewart's road	I44/417	None. Periodic inspection to monitor any damage/deterioration
Ellis' house and environs	I44/418	None. Periodic inspection to monitor any damage/deterioration
Pemberton's house and environs	I44/419	None. Periodic inspection to monitor any damage/deterioration
Arnott's house and environs	I44/420	None. Periodic inspection to monitor any damage/deterioration,
Arnott's road	I44/421	None. Periodic inspection to monitor any damage/deterioration
Wally Hunter's house	I44/422	None. Periodic inspection to monitor any damage/deterioration
Rutherford's road	I44/423	None. Periodic inspection to monitor any damage/deterioration
road to goldmine	I44/424	None. Periodic inspection to monitor any damage/deterioration
west fork - Rutherford's road	I44/425	None. Periodic inspection to monitor any damage/deterioration
Rutherford's house complex	I44/426	Detailed above. Remedial work required
Rutherford's gully track	I44/427	None. Periodic inspection to monitor any damage/deterioration
Nyhon's house	I44/428	None. Periodic inspection to monitor any damage/deterioration
Nyhon's cow byre	I44/429	Investigate stabilization of stone walls. Capping probably required using lime mortar mix.
stone revetting	I44/430	None. Periodic inspection to monitor any damage/deterioration
Robert Dick's house complex	I44/431	None. Periodic inspection to monitor any damage/deterioration
Leslie's road	I44/432	Clear encroaching scrub on roadline. Investigate repairs to slipped areas. Investigate utilizing whole length for walking track, with possibly link to Allan's Road to create loop track.
Stone wall Higham Wall 10	I44/433	None. Periodic inspection to monitor any damage/deterioration
Stone wall Higham Wall 11	I44/434	None. Periodic inspection to monitor any damage/deterioration
discontinuous stone boundary wall Higham Wall 12 and 13	I44/436	Detailed above. Remedial work required
Leslie #1 henhouse and cowshed	I44/437	None. Periodic inspection to monitor any damage/deterioration
stone revetting below road at Leslie's #1	I44/438	None. Periodic inspection to monitor any damage/deterioration
stone culvert and track over gully near Leslie #1	I44/439	None. Periodic inspection to monitor any damage/deterioration
discontinuous stone boundary feature	I44/440	None. Periodic inspection to monitor any damage/deterioration
Bacon's Bridle Track and extension	I44/442	None. Periodic inspection to monitor any damage/deterioration
Allan's road	I44/443	Consider for opening as walking track. Investigate possibility of linking around east of Harbour Cone.
macrocarpa stands	I44/444	None. Periodic inspection to monitor any damage/deterioration

above Highcliff Road		
Leslie #2 house and environs	I44/445	Trimming of trees to expose archaeological features. Control of encroaching scrub.
Limestone crushing plant	I44/447	None. Periodic inspection to monitor any damage/deterioration
Robert Dick's hedge & stone boundary wall	I44/448	None. Periodic inspection to monitor any damage/deterioration
stone wall feature Higham wall 14	I44/449	None. Periodic inspection to monitor any damage/deterioration
Higham wall 20 stone boundary wall	I44/452	Consider for second tranche of stone wall remediation works.
Farmstead site, Smith's Stream	I44/982	None. Periodic inspection to monitor any damage/deterioration
Stone revetment below Highcliff Road	I44/1014	None. Periodic inspection to monitor any damage/deterioration
Stone wall beside Bacon's Track	I44/1015	Consider for second tranche of stone wall remediation works.
Stone quarry beside Bacon's Track	I44/1016	None. Periodic inspection to monitor any damage/deterioration
Stone wall on Rutherford/Nyhon boundary	I44/1017	Consider for second tranche of stone wall remediation works.
Stone wall on Rutherford/Pemberton boundary	I44/1018	Detailed above. Remedial work required
Building site, Highcliff saddle	I44/1036	None. Periodic inspection to monitor any damage/deterioration
Sites outside Harbour Cone boundaries		
Sandymount creamery	I44/72	Privately owned
Limestone kiln	I44/83	Privately owned
Limestone kiln	I44/84	Otago Peninsula Trust
Sandymount School	I44/446	Privately owned
stone wall above Camp Road	I44/411	Road corridor.
Forbes' house and environs	I44/435	Privately owned
Edmund Ward's house complex	I44/441	Prune trees. Assess damage to stone walls. Add to second tranche of stone wall restoration, if land tenure is settled in favour of HHCT.
Edmund Ward's road	I44/450	None. Periodic inspection to monitor any damage/deterioration

Maintenance & Repairs

Cyclical maintenance plans should be in place for the timber buildings (Larnach's byre, Rogers' byre, Stewart's house), and the more significant stone ruins (the lime kiln, Allen's farmstead, Rutherford's farmstead) and stone walls (identified above).

Regular inspections of the main sites on the HHC block should be carried out, and a photographic record made at 5 yearly intervals. This will allow any slow deterioration over time to be identified.

Adaptation

Little or no adaptation work is required other than that already described and the provision of interpretation.

Site & Setting

The unspoiled rural hillcountry setting of the HHC block is critical, and is one of the reasons that the DCC purchased the land. No inappropriate development should be allowed any where in the vicinity.

Public Involvement & Interpretation

The preservation of the HHC block is primarily for public benefit as a significant heritage and landscape site. It should continue to be freely accessible by the public, within the obvious constraints of a rural site with foot/horse/bicycle access only (and with the requirements of lambing and stock management). Electric bikes, with their higher speeds, may pose an issue with stock, but this issue is outside the scope of the plan.

Interpretation panels should be supplied to explain the history and significance of sites, and any restoration work that has been carried out.

Interpretation panels should be kept relatively small, and should be located in easily accessible but inconspicuous places. Interpretation panels and other signs should not be placed in the middle of obvious photo views.

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13 Heritage Charters

ICOMOS New Zealand Charter

Nizhny Taghil Charter for the Industrial Heritage

ICOMOS New Zealand Charter

for the Conservation of Places of Cultural Heritage Value Revised 2010

Preamble

New Zealand retains a unique assemblage of **places** of **cultural heritage value** relating to its indigenous and more recent peoples. These areas, **cultural landscapes** and features, buildings and **structures**, gardens, archaeological sites, traditional sites, monuments, and sacred **places** are treasures of distinctive value that have accrued meanings over time. New Zealand shares a general responsibility with the rest of humanity to safeguard its cultural heritage **places** for present and future generations. More specifically, the people of New Zealand have particular ways of perceiving, relating to, and conserving their cultural heritage **places**.

Following the spirit of the International Charter for the Conservation and Restoration of Monuments and Sites (the Venice Charter - 1964), this charter sets out principles to guide the **conservation** of **places** of **cultural heritage value** in New Zealand. It is a statement of professional principles for members of ICOMOS New Zealand.

This charter is also intended to guide all those involved in the various aspects of **conservation** work, including owners, guardians, managers, developers, planners, architects, engineers, craftspeople and those in the construction trades, heritage practitioners and advisors, and local and central government authorities. It offers guidance for communities, organisations, and individuals involved with the **conservation** and management of cultural heritage **places**.

This charter should be made an integral part of statutory or regulatory heritage management policies or plans, and should provide support for decision makers in statutory or regulatory processes.
Each article of this charter must be read in the light of all the others. Words in bold in the text are defined in the definitions section of this charter.
This revised charter was adopted by the New Zealand National Committee of the International Council on Monuments and Sites at its meeting on 4 September 2010.

Purpose of conservation

1. The purpose of conservation

The purpose of **conservation** is to care for **places** of **cultural heritage value**.
In general, such places:

I. have lasting values and can be appreciated in their own right;
II. inform us about the past and the cultures of those who came before us;
III. provide tangible evidence of the continuity between past, present, and future;
IV. underpin and reinforce community identity and relationships to ancestors and the land;
V. and provide a measure against which the achievements of the present can be compared.

It is the purpose of **conservation** to retain and reveal such values, and to support the ongoing meanings and functions of **places** of **cultural heritage value,** in the interests of present and future generations.

Conservation principles

2. Understanding cultural heritage value

Conservation of a **place** should be based on an understanding and appreciation of all aspects of its **cultural heritage value**, both **tangible** and **intangible**. All available forms of knowledge and evidence provide the means of understanding a **place** and its **cultural heritage value** and cultural **heritage significance**. **Cultural heritage value** should be understood through consultation with **connected people**, systematic documentary and oral research, physical investigation and **recording** of the **place**, and other relevant methods.

All relevant **cultural heritage values** should be recognised, respected, and, where appropriate, revealed, including values which differ, conflict, or compete.

The policy for managing all aspects of a **place**, including its **conservation** and its **use**, and the implementation of

the policy, must be based on an understanding of its **cultural heritage value**.

3. Indigenous cultural heritage

The indigenous cultural heritage of **tangata whenua** relates to **whanau**, **hapu**, and **iwi** groups. It shapes identity and enhances well-being, and it has particular cultural meanings and values for the present, and associations with those who have gone before. Indigenous cultural heritage brings with it responsibilities of guardianship and the practical application and passing on of associated knowledge, traditional skills, and practices.

The Treaty of Waitangi is the founding document of our nation. Article 2 of the Treaty recognises and guarantees the protection of **tino rangatiratanga**, and so empowers **kaitiakitanga** as customary trusteeship to be exercised by **tangata whenua**. This customary trusteeship is exercised over their **taonga**, such as sacred and traditional **places**, built heritage, traditional practices, and other cultural heritage resources. This obligation extends beyond current legal ownership wherever such cultural heritage exists.

Particular **matauranga**, or knowledge of cultural heritage meaning, value, and practice, is associated with **places**. **Matauranga** is sustained and transmitted through oral, written, and physical forms determined by **tangata whenua**. The **conservation** of such **places** is therefore conditional on decisions made in associated **tangata whenua** communities, and should proceed only in this context. In particular, protocols of access, authority, ritual, and practice are determined at a local level and should be respected.

4. Planning for conservation

Conservation should be subject to prior documented assessment and planning.

All **conservation** work should be based on a **conservation plan** which identifies the **cultural heritage value** and **cultural heritage significance** of the **place**, the **conservation** policies, and the extent of the recommended works.

The **conservation plan** should give the highest priority to the **authenticity** and **integrity** of the **place**.
Other guiding documents such as, but not limited to, management plans, cyclical **maintenance** plans, specifications for **conservation** work, interpretation plans, risk mitigation plans, or emergency plans should be guided by a **conservation plan**.

5. Respect for surviving evidence and knowledge

Conservation maintains and reveals the **authenticity** and **integrity** of a **place**, and involves the least possible loss of **fabric** or evidence of **cultural heritage value**. Respect for all forms of knowledge and existing evidence, of both **tangible** and **intangible values,** is essential to the **authenticity** and **integrity** of the **place**.

Conservation recognises the evidence of time and the contributions of all periods. The **conservation** of a **place** should identify and respect all aspects of its **cultural heritage value** without unwarranted emphasis on any one value at the expense of others.

The removal or obscuring of any physical evidence of any period or activity should be minimised, and should be explicitly justified where it does occur. The **fabric** of a particular period or activity may be obscured or removed if assessment shows that its removal would not diminish the **cultural heritage value** of the **place.**

In **conservation**, evidence of the functions and intangible meanings of **places** of **cultural heritage value** should be respected.

6. Minimum intervention

Work undertaken at a **place** of **cultural heritage value** should involve the least degree of **intervention** consistent with **conservation** and the principles of this charter.

Intervention should be the minimum necessary to ensure the retention of **tangible** and **intangible values** and the continuation of **uses** integral to those values. The removal of **fabric** or the alteration of features and spaces that have **cultural heritage value** should be avoided.

7. Physical investigation

Physical investigation of a **place** provides primary evidence that cannot be gained from any other source. Physical investigation should be carried out according to currently accepted professional standards, and should be documented through systematic **recording**.

Invasive investigation of **fabric** of any period should be carried out only where knowledge may be significantly extended, or where it is necessary to establish the existence of **fabric** of **cultural heritage value**, or where it is necessary for **conservation** work, or where such **fabric** is about to be damaged or destroyed or made inaccessible. The extent of invasive investigation should minimise the disturbance of significant **fabric**.

8. Use

The **conservation** of a **place** of **cultural heritage value** is usually facilitated by the **place** serving a useful purpose.

Where the **use** of a **place** is integral to its **cultural heritage value**, that **use** should be retained.

Where a change of **use** is proposed, the new **use** should be compatible with the **cultural heritage value** of the **place**, and should have little or no adverse effect on the **cultural heritage value**.

9. Setting

Where the **setting** of a **place** is integral to its **cultural heritage value**, that **setting** should be conserved with the **place** itself. If the **setting** no longer contributes to the **cultural heritage value** of the **place**, and if **reconstruction** of the **setting** can be justified, any **reconstruction** of the **setting** should be based on an understanding of all aspects of the **cultural heritage value** of the **place**.

10. Relocation

The on-going association of a **structure** or feature of **cultural heritage value** with its location, site, curtilage, and **setting** is essential to its **authenticity** and **integrity**. Therefore, a **structure** or feature of **cultural heritage value** should remain on its original site.

Relocation of a **structure** or feature of **cultural heritage value**, where its removal is required in order to clear its site for a different purpose or construction, or where its removal is required to enable its **use** on a different site, is not a desirable outcome and is not a **conservation** process.

In exceptional circumstances, a **structure** of **cultural heritage value** may be relocated if its current site is in imminent danger, and if all other means of retaining the **structure** in its current location have been exhausted. In this event, the new location should provide a **setting** compatible with the **cultural heritage value** of the **structure**.

11. Documentation and archiving

The **cultural heritage value** and **cultural heritage significance** of a **place**, and all aspects of its **conservation**, should be fully documented to ensure that this information is available to present and future generations.

Documentation includes information about all changes to the **place** and any decisions made during the **conservation** process.

Documentation should be carried out to archival standards to maximise the longevity of the record, and should be placed in an appropriate archival repository.

Documentation should be made available to **connected people** and other interested parties. Where reasons for confidentiality exist, such as security, privacy, or cultural appropriateness, some information may not always be publicly accessible.

12. Recording

Evidence provided by the **fabric** of a **place** should be identified and understood through systematic research, **recording**, and analysis.

Recording is an essential part of the physical investigation of a **place**. It informs and guides the **conservation** process and its planning. Systematic **recording** should occur prior to, during, and following any **intervention**. It should include the **recording** of new evidence revealed, and any **fabric** obscured or removed.

Recording of the changes to a **place** should continue throughout its life.

13. Fixtures, fittings, and contents

Fixtures, fittings, and **contents** that are integral to the **cultural heritage value** of a **place** should be retained and

conserved with the **place**. Such fixtures, fittings, and **contents** may include carving, painting, weaving, stained glass, wallpaper, surface decoration, works of art, equipment and machinery, furniture, and personal belongings.

Conservation of any such material should involve specialist **conservation** expertise appropriate to the material. Where it is necessary to remove any such material, it should be recorded, retained, and protected, until such time as it can be reinstated**.**

Conservation processes and practice

14. Conservation plans

A **conservation plan**, based on the principles of this charter, should:
(i) be based on a comprehensive understanding of the **cultural heritage value** of the **place** and assessment of its **cultural heritage significance**;
(ii) include an assessment of the **fabric** of the **place**, and its condition;
(iii) give the highest priority to the **authenticity** and **integrity** of the **place**;
(iv) include the entirety of the **place**, including the **setting**;
(v) be prepared by objective professionals in appropriate disciplines;
(vi) consider the needs, abilities, and resources of **connected people**;
(vii) not be influenced by prior expectations of change or development;
(viii) specify **conservation** policies to guide decision making and to guide any work to be undertaken;
(ix) make recommendations for the **conservation** of the **place;** and
(x) be regularly revised and kept up to date.

15. Conservation projects

Conservation projects should include the following:
(i) consultation with interested parties and **connected people**, continuing throughout the project;
(ii) opportunities for interested parties and **connected people** to contribute to and participate in the project;
(iii) research into documentary and oral history, using all relevant sources and repositories of knowledge;
(iv) physical investigation of the **place** as appropriate;
(v) use of all appropriate methods of **recording**, such as written, drawn, and photographic;
(vi) the preparation of a **conservation plan** which meets the principles of this charter;
(vii) guidance on appropriate **use** of the **place**;
(viii) the implementation of any planned **conservation** work;
(ix) the **documentation** of the **conservation** work as it proceeds; and
(x) where appropriate, the deposit of all records in an archival repository.

A **conservation** project must not be commenced until any required statutory authorisation has been granted.

16. Professional, trade, and craft skills

All aspects of **conservation** work should be planned, directed, supervised, and undertaken by people with appropriate **conservation** training and experience directly relevant to the project.

All **conservation** disciplines, arts, crafts, trades, and traditional skills and practices that are relevant to the project should be applied and promoted.

17. Degrees of intervention for conservation purposes

Following research, **recording**, assessment, and planning, **intervention** for **conservation** purposes may include, in increasing degrees of **intervention**:
(i) **preservation**, through **stabilisation, maintenance**, or **repair**;
(ii) **restoration**, through **reassembly**, **reinstatement**, or removal;
(iii) **reconstruction**; and
(iv) **adaptation**.

In many **conservation** projects a range of processes may be utilised. Where appropriate, **conservation** processes may be applied to individual parts or components of a **place** of **cultural heritage value**.

The extent of any **intervention** for **conservation** purposes should be guided by the **cultural heritage value** of a **place** and the policies for its management as identified in a **conservation plan**. Any **intervention** which would reduce or compromise **cultural heritage value** is undesirable and should not occur.
Preference should be given to the least degree of **intervention**, consistent with this charter.

Re-creation, meaning the conjectural **reconstruction** of a **structure** or **place**; replication, meaning to make a copy of an existing or former **structure** or **place**; or the construction of generalised representations of typical features or **structures**, are not **conservation** processes and are outside the scope of this charter.

18. Preservation

Preservation of a **place** involves as little **intervention** as possible, to ensure its long-term survival and the continuation of its **cultural heritage value**.

Preservation processes should not obscure or remove the patina of age, particularly where it contributes to the **authenticity** and **integrity** of the **place,** or where it contributes to the structural stability of materials.

i. Stabilisation
Processes of decay should be slowed by providing treatment or support.

ii. Maintenance
A **place** of **cultural heritage value** should be maintained regularly. **Maintenance** should be carried out according to a plan or work programme.

iii. Repair
Repair of a **place** of **cultural heritage value** should utilise matching or similar materials. Where it is necessary to employ new materials, they should be distinguishable by experts, and should be documented.

Traditional methods and materials should be given preference in **conservation** work.

Repair of a technically higher standard than that achieved with the existing materials or construction practices may be justified only where the stability or life expectancy of the site or material is increased, where the new material is compatible with the old, and where the **cultural heritage value** is not diminished.

19. Restoration

The process of **restoration** typically involves **reassembly** and **reinstatement,** and may involve the removal of accretions that detract from the **cultural heritage value** of a **place**.

Restoration is based on respect for existing **fabric,** and on the identification and analysis of all available evidence, so that the **cultural heritage value** of a **place** is recovered or revealed. **Restoration** should be carried out only if the **cultural heritage value** of the **place** is recovered or revealed by the process.
Restoration does not involve conjecture.

i. Reassembly and reinstatement

Reassembly uses existing material and, through the process of **reinstatement**, returns it to its former position. **Reassembly** is more likely to involve work on part of a **place** rather than the whole **place**.

ii. Removal

Occasionally, existing **fabric** may need to be permanently removed from a **place**. This may be for reasons of advanced decay, or loss of structural **integrity**, or because particular **fabric** has been identified in a **conservation plan** as detracting from the **cultural heritage value** of the **place**.

The **fabric** removed should be systematically **recorded** before and during its removal. In some cases it may be appropriate to store, on a long-term basis, material of evidential value that has been removed.

20. Reconstruction

Reconstruction is distinguished from **restoration** by the introduction of new material to replace material that has been lost.

Reconstruction is appropriate if it is essential to the function, **integrity**, **intangible value**, or understanding of a **place**, if sufficient physical and documentary evidence exists to minimise conjecture, and if surviving **cultural heritage value** is preserved.

Reconstructed elements should not usually constitute the majority of a **place** or **structure**.

21. Adaptation

The **conservation** of a **place** of **cultural heritage value** is usually facilitated by the **place** serving a useful purpose. Proposals for **adaptation** of a **place** may arise from maintaining its continuing **use**, or from a proposed change of **use**.

Alterations and additions may be acceptable where they are necessary for a **compatible use** of the **place**. Any change should be the minimum necessary, should be substantially reversible, and should have little or no adverse effect on the **cultural heritage value** of the **place**.

Any alterations or additions should be compatible with the original form and **fabric** of the **place,** and should avoid inappropriate or incompatible contrasts of form, scale, mass, colour, and material. **Adaptation** should not dominate or substantially obscure the original form and **fabric**, and should not adversely affect the **setting** of a **place** of **cultural heritage value**. New work should complement the original form and **fabric**.

22. Non-intervention

In some circumstances, assessment of the **cultural heritage value** of a **place** may show that it is not desirable to undertake any **conservation intervention** at that time. This approach may be appropriate where undisturbed constancy of **intangible values,** such as the spiritual associations of a sacred **place,** may be more important than its physical attributes.

23. Interpretation

Interpretation actively enhances public understanding of all aspects of **places** of **cultural heritage value** and their **conservation**. Relevant cultural protocols are integral to that understanding, and should be identified and observed.

Where appropriate, interpretation should assist the understanding of **tangible** and **intangible values** of a **place** which may not be readily perceived, such as the sequence of construction and change, and the meanings and associations of the **place** for **connected people**.

Any interpretation should respect the **cultural heritage value** of a **place**. Interpretation methods should be appropriate to the **place**. Physical **interventions** for interpretation purposes should not detract from the experience of the **place,** and should not have an adverse effect on its **tangible** or **intangible values**.

24. Risk mitigation

Places of **cultural heritage value** may be vulnerable to natural disasters such as flood, storm, or earthquake; or to humanly induced threats and risks such as those arising from earthworks, subdivision and development, buildings works, or wilful damage or neglect. In order to safeguard **cultural heritage value**, planning for risk mitigation and emergency management is necessary.

Potential risks to any **place** of **cultural heritage value** should be assessed. Where appropriate, a risk mitigation plan, an emergency plan, and/or a protection plan should be prepared, and implemented as far as possible, with reference to a conservation plan.

Definitions

For the purposes of this charter:

Adaptation means the process(es) of modifying a **place** for a **compatible use** while retaining its **cultural heritage value. Adaptation** processes include alteration and addition.

Authenticity means the credibility or truthfulness of the surviving evidence and knowledge of the **cultural heritage value** of a **place.** Relevant evidence includes form and design, substance and **fabric**, technology and craftsmanship, location and surroundings, context and **setting**, **use** and function, traditions, spiritual essence, and sense of place, and includes **tangible** and **intangible values.** Assessment of **authenticity** is based on identification and analysis of relevant evidence and knowledge, and respect for its cultural context.

Compatible use means a **use** which is consistent with the **cultural heritage value** of a **place,** and which has little or no adverse impact on its **authenticity** and **integrity.**

Connected people means any groups, organisations, or individuals having a sense of association with or responsibility for a **place** of **cultural heritage value.**

Conservation means all the processes of understanding and caring for a **place** so as to safeguard its **cultural heritage value**. **Conservation** is based on respect for the existing **fabric**, associations, meanings, and **use** of the **place**. It requires a cautious approach of doing as much work as necessary but as little as possible, and retaining **authenticity** and **integrity**, to ensure that the **place** and its values are passed on to future generations.

Conservation plan means an objective report which documents the history, **fabric,** and **cultural heritage value** of a **place**, assesses its **cultural heritage significance,** describes the condition of the **place**, outlines **conservation** policies for managing the **place**, and makes recommendations for the **conservation** of the **place**.

Contents means moveable objects, collections, chattels, documents, works of art, and ephemera that are not fixed or fitted to a **place,** and which have been assessed as being integral to its **cultural heritage value**.

Cultural heritage significance means the **cultural heritage value** of a **place** relative to other similar or comparable **places**, recognising the particular cultural context of the **place**.

Cultural heritage value/s means possessing aesthetic, archaeological, architectural, commemorative, functional, historical, landscape, monumental, scientific, social, spiritual, symbolic, technological, traditional, or other **tangible** or **intangible values,** associated with human activity.

Cultural landscapes means an area possessing **cultural heritage value** arising from the relationships between people and the environment. **Cultural landscapes** may have been designed, such as gardens, or may have evolved from human settlement and land use over time, resulting in a diversity of distinctive landscapes in different areas. Associative **cultural landscapes**, such as sacred mountains, may lack **tangible** cultural elements but may have strong **intangible** cultural or spiritual associations.

Documentation means collecting, **recording**, keeping, and managing information about a **place** and its **cultural heritage value**, including information about its history, **fabric,** and meaning; information about decisions taken; and information about physical changes and **interventions** made to the **place**.
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Fabric means all the physical material of a **place**, including subsurface material, **structures**, and interior and exterior surfaces including the patina of age; and including fixtures and fittings, and gardens and plantings.

Hapu means a section of a large tribe of the **tangata whenua**.

Intangible value means the abstract **cultural heritage value** of the meanings or associations of a **place**, including commemorative, historical, social, spiritual, symbolic, or traditional values.

Integrity means the wholeness or intactness of a **place**, including its meaning and sense of **place**, and all the **tangible** and **intangible** attributes and elements necessary to express its **cultural heritage value**.
Intervention means any activity that causes disturbance of or alteration to a **place** or its **fabric**. **Intervention** includes archaeological excavation, invasive investigation of built **structures,** and any **intervention** for **conservation** purposes.

Iwi means a tribe of the **tangata whenua**.

Kaitiakitanga means the duty of customary trusteeship, stewardship, guardianship, and protection of land, resources, or **taonga.**

Maintenance means regular and on-going protective care of a **place** to prevent deterioration and to retain its **cultural heritage value**.

Matauranga means traditional or cultural knowledge of the **tangata whenua**.

Non-intervention means to choose not to undertake any activity that causes disturbance of or alteration to a **place** or its **fabric**.

Place means any land having **cultural heritage value** in New Zealand, including areas; **cultural landscapes**; buildings, **structures,** and monuments; groups of buildings, **structures,** or monuments; gardens and plantings; archaeological sites and features; traditional sites; sacred **places**; townscapes and streetscapes; and settlements. **Place** may also include land covered by water, and any body of water. **Place** includes the **setting** of any such **place**.

Preservation means to maintain a **place** with as little change as possible.

Reassembly means to put existing but disarticulated parts of a **structure** back together.

Reconstruction means to build again as closely as possible to a documented earlier form, using new materials.

Recording means the process of capturing information and creating an archival record of the **fabric** and **setting** of a **place**, including its configuration, condition, **use**, and change over time.

Reinstatement means to put material components of a **place**, including the products of **reassembly**, back in position.

Repair means to make good decayed or damaged **fabric** using identical, closely similar, or otherwise appropriate material.

Restoration means to return a **place** to a known earlier form, by **reassembly** and **reinstatement**, and/or by removal of elements that detract from its **cultural heritage value**.

Setting means the area around and/or adjacent to a **place** of **cultural heritage value** that is integral to its function, meaning, and relationships. **Setting** includes the **structures**, outbuildings, features, gardens, curtilage, airspace, and accessways forming the spatial context of the **place** or used in association with the **place**. **Setting** also includes **cultural landscapes**, townscapes, and streetscapes; perspectives, views, and viewshafts to and from a **place**; and relationships with other **places** which contribute to the **cultural heritage value** of the **place**. **Setting** may extend beyond the area defined by legal title, and may include a buffer zone necessary for the long- term protection of the **cultural heritage value** of the **place**.

Stabilisation means the arrest or slowing of the processes of decay.

Structure means any building, standing remains, equipment, device, or other facility made by people and which is fixed to the land.

Tangata whenua means generally the original indigenous inhabitants of the land; and means specifically the people exercising **kaitiakitanga** over particular land, resources, or **taonga**.

Tangible value means the physically observable **cultural heritage value** of a **place**, including archaeological, architectural, landscape, monumental, scientific, or technological values.

Taonga means anything highly prized for its cultural, economic, historical, spiritual, or traditional value, including land and natural and cultural resources.

Tino rangatiratanga means the exercise of full chieftainship, authority, and responsibility. **Use** means the functions of a **place**, and the activities and practices that may occur at the **place**. The functions, activities, and practices may in themselves be of **cultural heritage value**.

Whanau means an extended family which is part of a **hapu** or **iwi**.

English language text first published 1993 Bilingual text first published 1995

This revised text replaces the 1993 and 1995 versions and should be referenced as the *ICOMOS New Zealand Charter for the Conservation of Places of Cultural Heritage Value* (ICOMOS New Zealand Charter 2010).
This revision incorporates changes in conservation philosophy and best practice since 1993 and is the only version of the ICOMOS New Zealand Charter approved by ICOMOS New Zealand (Inc.) for use.

THE NIZHNY TAGIL CHARTER FOR THE INDUSTRIAL HERITAGE

July 2003

TICCIH is the world organisation representing industrial heritage and is special adviser to ICOMOS on industrial heritage. This charter was originated by TICCIH and will be presented to ICOMOS for ratification and for eventual approval by UNESCO.

Preamble

The earliest periods of human history are defined by the archaeological evidence for fundamental changes in the ways in which people made objects, and the importance of conserving and studying the evidence of these changes is universally accepted.

From the Middle Ages, innovations in Europe in the use of energy and in trade and commerce led to a change towards the end of the 18 th century just as profound as that between the Neolithic and Bronze Ages, with developments in the social, technical and economic circumstances of manufacturing sufficiently rapid and profound to be called a revolution. The Industrial Revolution was the beginning of a historical phenomenon that has affected an ever-greater part of the human population, as well as all the other forms of life on our planet, and that continues to the present day.

The material evidence of these profound changes is of universal human value, and the importance of the study and conservation of this evidence must be recognised.

The delegates assembled for the 2003 TICCIH Congress in Russia wish therefore to assert that the buildings and structures built for industrial activities, the processes and tools used within them and the towns and landscapes in which they are located, along with all their other tangible and intangible manifestations, are of fundamental importance. They should be studied, their history should be taught, their meaning and significance should be probed and made clear for everyone, and the most significant and characteristic examples should be identified, protected and maintained, in accordance with the spirit of the Venice Charter [1], for the use and benefit of today and of the future.

1. Definition of industrial heritage

Industrial heritage consists of the remains of industrial culture which are of historical, technological, social, architectural or scientific value. These remains consist of buildings and machinery, workshops, mills and factories, mines and sites for processing and refining, warehouses and stores, places where energy is generated, transmitted and used, transport and all its infrastructure, as well as places used for social activities related to industry such as housing, religious worship or education.

Industrial archaeology is an interdisciplinary method of studying all the evidence, material and immaterial, of documents, artefacts, stratigraphy and structures, human settlements and natural and urban landscapes [2], created for or by industrial processes. It makes use of those methods of investigation that are most suitable to increase understanding of the industrial past and present.

The historical period of principal interest extends forward from the beginning of the Industrial Revolution in the second half of the eighteenth century up to and including the present day, while also examining its earlier pre-industrial and proto-industrial roots. In addition it draws on the study of work and working techniques encompassed by the history of technology.

2. Values of industrial heritage

I. The industrial heritage is the evidence of activities which had and continue to have profound historical consequences. The motives for protecting the industrial heritage are based on the universal value of this evidence, rather than on the singularity of unique sites.

II. The industrial heritage is of social value as part of the record of the lives of ordinary men and women, and as such it provides an important sense of identity. It is of technological and scientific value in the history of manufacturing, engineering, construction, and it may have considerable

aesthetic value for the quality of its architecture, design or planning.

III. These values are intrinsic to the site itself, its fabric, components, machinery and setting, in the industrial landscape, in written documentation, and also in the intangible records of industry contained in human memories and customs.

IV. Rarity, in terms of the survival of particular processes, site typologies or landscapes, adds particular value and should be carefully assessed. Early or pioneering examples are of especial value.

3. The importance of identification, recording and research

I. Every territory should identify, record and protect the industrial remains that it wants to preserve for future generations.

II. Surveys of areas and of different industrial typologies should identify the extent of the industrial heritage. Using this information, inventories should be created of all the sites that have been identified. They should be devised to be easily searchable and should be freely accessible to the public. Computerisation and on-line access are valuable objectives.

III. Recording is a fundamental part of the study of industrial heritage. A full record of the physical features and condition of a site should be made and placed in a public archive before any interventions are made. Much information can be gained if recording is carried out before a process or site has ceased operation. Records should include descriptions, drawings, photographs and video film of moving objects, with references to supporting documentation. Peoples' memories are a unique and irreplaceable resource which should also be recorded when they are available.

IV. Archaeological investigation of historic industrial sites is a fundamental technique for their study. It should be carried out to the same high standards as that of sites from other historical or cultural periods.

V. Programmes of historical research are needed to support policies for the protection of the industrial heritage. Because of the interdependency of many industrial activities, international studies can help identify sites and types of sites of world importance.

VI. The criteria for assessing industrial buildings should be defined and published so as to achieve general public acceptance of rational and consistent standards. On the basis of appropriate research, these criteria should be used to identify the most important surviving landscapes, settlements, sites, typologies, buildings, structures, machines and processes.

VII. Those sites and structures that are identified as important should be protected by legal measures that are sufficiently strong to ensure the conservation of their significance. The World Heritage List of UNESCO should give due recognition to the tremendous impact that industrialisation has had on human culture.

VIII. The value of significant sites should be defined and guidelines for future interventions established. Any legal, administrative and financial measures that are necessary to maintain their value should be put in place.

IX. Sites that are at risk should be identified so that appropriate measures can be taken to reduce that risk and facilitate suitable schemes for repairing or re-using them.

X. International co-operation is a particularly appropriate approach to the conservation of the industrial heritage through co-ordinated initiatives and sharing resources. Compatible criteria should be developed to compile international inventories and databases.

4. Legal protection

I. The industrial heritage should be seen as an integral part of the cultural heritage in general. Nevertheless, its legal protection should take into account the special nature of the industrial

heritage.It should be capable of protecting plant and machinery, below-ground elements, standing structures, complexes and ensembles of buildings, and industrial landscapes. Areas of industrial waste should be considered for their potential archaeological as well as ecological value.

II. Programmes for the conservation of the industrial heritage should be integrated into policies for economic development and into regional and national planning.

III. The most important sites should be fully protected and no interventions allowed that compromise their historical integrity or the authenticity of their fabric. Sympathetic adaptation and re-use may be an appropriate and a cost-effective way of ensuring the survival of industrial buildings, and should be encouraged by appropriate legal controls, technical advice, tax incentives and grants.

IV. Industrial communities which are threatened by rapid structural change should be supported by central and local government authorities. Potential threats to the industrial heritage from such changes should be anticipated and plans prepared to avoid the need for emergency actions.

V. Procedures should be established for responding quickly to the closure of important industrial sites to prevent the removal or destruction of significant elements. The competent authorities should have statutory powers to intervene when necessary to protect important threatened sites.

VI. Government should have specialist advisory bodies that can give independent advice on questions relating to the protection and conservation of industrial heritage, and their opinions should be sought on all important cases.

VII. Every effort should be made to ensure the consultation and participation of local communities in the protection and conservation of their local industrial heritage.

VIII. Associations and societies of volunteers have an important role in identifying sites, promoting public participation in industrial conservation and disseminating information and research, and as such are indispensable actors in the theatre of industrial heritage.

5. Maintenance and conservation

I. Conservation of the industrial heritage depends on preserving functional integrity, and interventions to an industrial site should therefore aim to maintain this as far as possible. The value and authenticity of an industrial site may be greatly reduced if machinery or components are removed, or if subsidiary elements which form part of a whole site are destroyed.

II. The conservation of industrial sites requires a thorough knowledge of the purpose or purposes to which they were put, and of the various industrial processes which may have taken place there. These may have changed over time, but all former uses should be examined and assessed.

III. Preservation in situ should always be given priority consideration. Dismantling and relocating a building or structure are only acceptable when the destruction of the site is required by overwhelming economic or social needs.

IV. The adaptation of an industrial site to a new use to ensure its conservation is usually acceptable except in the case of sites of especial historical significance. New uses should respect the significant material and maintain original patterns of circulation and activity, and should be compatible as much as possible with the original or principal use. An area that interprets the former use is recommended.

V. Continuing to adapt and use industrial buildings avoids wasting energy and contributes to sustainable development. Industrial heritage can have an important role in the economic regeneration of decayed or declining areas. The continuity that re-use implies may provide psychological stability for communities facing the sudden end a long-standing sources of employment.

VI. Interventions should be reversible and have a minimal impact. Any unavoidable changes should be documented and significant elements that are removed should be recorded and stored safely. Many industrial processes confer a patina that is integral to the integrity and interest of the site.

VII. Reconstruction, or returning to a previous known state, should be considered an exceptional intervention and one which is only appropriate if it benefits the integrity of the whole site, or in the case of the destruction of a major site by violence.

VIII. The human skills involved in many old or obsolete industrial processes are a critically important resource whose loss may be irreplaceable. They need to be carefully recorded and transmitted to younger generations.

IX. Preservation of documentary records, company archives, building plans, as well as sample specimens of industrial products should be encouraged.

6. Education and training

I. Specialist professional training in the methodological, theoretical and historical aspects of industrial heritage should be taught at technical and university levels.

II. Specific educational material about the industrial past and its heritage should be produced by and for students at primary and secondary level.

7. Presentation and interpretation

I. Public interest and affection for the industrial heritage and appreciation of its values are the surest ways to conserve it. Public authorities should actively explain the meaning and value of industrial sites through publications, exhibitions, television, the Internet and other media, by providing sustainable access to important sites and by promoting tourism in industrial areas.

II. Specialist industrial and technical museums and conserved industrial sites are both important means of protecting and interpreting the industrial heritage.

III. Regional and international routes of industrial heritage can highlight the continual transfer of industrial technology and the large-scale movement of people that can be caused by it.

[1] The ICOMOS ‘Venice Charter for the Conservation and Restoration of Monuments and Sites', 1964 [2] For convenience, 'sites' will be taken to mean landscapes, complexes, buildings, structures and machines unless these terms are used in a more specific way.