‘*From Peat Spade to Tangle Trade*’

The Industrial Heritage of the North Isles Orkney

Research and Interpretation Project

Data Structure Report

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Project No: 996

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Contents

Figures

Plates

1 Introduction

ORCA Archaeology was commissioned by North Isles Landscape Partnership Scheme (NILPS) to undertake the 'Industrial Heritage of the North Isles' research and interpretation project focusing on the standing structures and physical remains of industrial activity across the North Isles of Orkney.

The 'North Isles' are defined here as all islands north of Mainland: Rousay, Egilsay, Wyre, Shapinsay, Westray, Papa Westray, Eday, Sanday, Stronsay and North Ronaldsay (**Figure 1**).

This document details the results of the project in accordance with the Method Statement prepared by ORCA Archaeology (Bell & Lee, 2023) as specified in the original tender submitted to Orkney Islands Council for 'The Provision of a Research and Interpretation Project – The Industrial Heritage of the North Isles' (OIC/PROC/1665).

1.1 Project Background

NILPS is funded by the Heritage Lottery Fund (HLF), Historic Environment Scotland, Orkney Island Council, Highlands and Islands Enterprise (HIE) and Scottish Natural Heritage (SNH). The aim of the scheme is to promote the North Isles natural, built and cultural heritage, through providing funding for a range of physical improvements, conservation and landscape projects, training, interpretation and educational projects.

Plate 1: *The mechanical stone crusher in Eday. The crusher stood in the compound of the former Council Depot on the island until 2023 when it was sold and exported from Orkney.*

The 'Industrial Heritage of the North Isles' project was identified as a potential programme for consideration for inclusion in the NILP scheme during an Historical Environment Study of the North Isles, commissioned by Orkney Islands Council. This aimed to identify key cultural assets and assess how they could effectively engage local communities with historic environment heritage projects (Barton *et al*., 2017).

2 Project Outline

The aim of the project was to deliver a series of engaging activities with key legacies for the industrial heritage of the North Isles of Orkney, linked by a number of key project questions, ideas and concepts. These are detailed in the project method statement (Bell & Lee, 2023) and are summarised below.

2.1 Project Scope

The industrial heritage of Orkney has not been well recognised, even though sites, monuments and documents dating from the last few hundred years form an important historical and archaeological resource with a variety of forms and types, including a number unique to the islands.

The 'Industrial Heritage of the North Isles' project was developed to promote and encourage the study of these sites, highlight their value as a heritage resource and to enable island residents and visitors understand the development of these industries in the landscape, their family histories and their personal connections at different local, regional and national scales. The project recognised that industries such as farming, fishing, kelp burning and quarrying can have a more prominent and more tangible presence in the contemporary landscape for islanders, than perhaps sites dating to the more distant past. Many island residents are aware of family links to particular sites and places and may also have personal memories associated with former places of industry.

This lack of attention paid to industrial heritage and archaeology is not confined to Orkney. The origin of the study of industrial heritage came from enthusiasts seeking to preserve particular sites and examples of machinery under threat of loss and destruction (**Plate 1**). As a result there was an emphasis on particular sites, structures and technologies or on examples regarded as noteworthy or unique, particularly those with added visual, emotive or leisure appeal. Rural industry often fell by the wayside with its processes, techniques and products seen as less worthy of preservation.

This is reflected in the early literature on 'industrial archaeology' which focused on visible sites and upstanding remains, usually in the form of gazetteers with generalised commentaries on technologies and industries. These were often discussed in isolation with little consideration of development in other industries or society. The description of sites and monuments contained little regarding the context of a place, their place in history, or the social/economic context (for example, see Hume, 1977). A reliance on historical sources to tell the story of industrial sites led to omissions of interpretation by failing to consider the evidence that archaeological investigation can bring.

Industrial heritage leaves tangible traces and remains in the landscape which, more often than not, resulted from large scale and rapid changes at the time in the wider socio-economic context. Increasingly, the recent study of industrial archaeology has been concerned with the social context and meaning of industrial sites to consider topics such as adaptation and resilience, class and status, social identity, paternalism and social control (Palmer & Orange, 2016: 78).

Industrial remains provide a number of opportunities for community training and engagement (**Plate 2**), using techniques such as surveying, standing building recording, geophysical survey, test-pitting / small-scale excavation and oral history collection (Palmer & Orange, 2016: 83-84). Industrial sites from the more recent past were often used within living memory,

providing an opportunity to combine memory, oral histories and archaeological methods (Orange, 2016). Industrial remains and ruins can also provide opportunities to discuss the processes of abandonment and decay, notions of waste and aesthetics, economics and profit, redevelopment and renewal, and memory and materiality in a rural island context (see Edensor, 2005 for industrial ruins in an urban context).

Plate 2: *ORCA staff and local volunteers undertaking the recording of tangle dykes at Grice Ness, Stronsay.*

2.2 Project Stages

Successful delivery of the project was undertaken in three stages. These are detailed in the project method statement (Bell & Lee, 2023) and are summarised below.

Stage 1: The planning and scoping of the project by the ORCA team, undertaking initial research and site scoping in preparation for island visits and drop-in days. Project launches on each island comprised a presentation describing the project, informal discussions with islanders, a drop-in session and site visits to investigate and assess condition and suitability for fieldwork (see **Section 3.2** below).

Stage 2: Fieldwork and activities designed to train and support islanders to undertake recording and original research about their industrial 'places', enhancing the record of industrial heritage for each island. Core engagement and community activities comprised recording and survey work (such as topographic and measured survey, walkover survey, photographic, building recording) at the selected sites.

Stage 3: Completion of project legacies comprising an online resource to host the corpus of data collected, new information about the sites and the landscape, promotion of the North Isles' industrial heritage, school learning packs, project reports and publications (web based and printed copies) and a poster-map. These provide interpretation for sites of historical industry where none has previously existed and will actively encourage islanders and tourists to visit industrial heritage assets.

3 Fieldwork Methodologies

3.1 Desk-based Assessments and Archive Research

A desk-based assessment and archive research for each island had been undertaken as part of the Historical Environment Study (Barton *et al*., 2017). Further research was undertaken as part of the preparation of the Method Statement (Bell & Lee, 2023) which also incorporated the results of other heritage-based projects, surveys and archaeological fieldwork undertaken in the interim, to provide a base line for all aspects of the project. This base line was used to inform fieldwork strategies and interpretations, enhance the research and engagement capacity of the programme of activities and feed into content and interpretation of the web based and reporting outcomes, including the production of a 'industrial heritage' map.

Volunteers and island community members were encouraged to undertake their research and literature reviews of project-relevant sites and themes which interested them. A number of potential topics were provided to members of the project email list, though it was highlighted that any relevant topic would be acceptable and supported. ORCA team members and local specialists were available to provide assistance regarding:

- Where to access information, research techniques and use of local archives;
- Addressing the project questions through research;
- Continuing research and investigations beyond the lifetime of the current project.

Sources consulted for the desk-based assessment and volunteer-led research included some or all of the following:

- The full sequence of Ordnance Survey maps
- British Geological Survey maps
- Historic maps of the area, including Estate maps and pre-Ordnance Survey maps.
- Statutory lists, registers and designated areas, including List of Scheduled Monuments, Listed Buildings, Designed Landscapes and local authority Conservation Areas.
- Aerial photographs, including those held by the local authority and SMR, the NMRS and the Cambridge University Collection.
- Slides
- Appropriate archaeological and historical journals, monographs and books, including the Old and New Statistical Accounts of Scotland.
- Other historical documents held in national and local archives, such as libraries, museums and record offices. This data was extensive and a selective, rather than full, survey of the material was considered appropriate.
- Relevant unpublished material by professional and amateur archaeologists and historians.

The results of volunteer-led research form part of the web-archive for the project.

3.2 Site Visits

The project launches undertaken for each island (see **Section 2.2** above) included a number of visits, and additional short site visits were often undertaken as part of the fieldwork programme (Stage 2) for each island.

The aim was to provide additional survey and recording opportunities for volunteers at smaller sites where more extensive survey was not required. The activities at each site comprised:

- Written records of any information provided by island residents;
- Examination of historic maps to inform site recording and interpretation;
- General photographic record;
- Sketch plan of the Site including features and/or structures.

3.3 Walkover Surveys

Walkover surveys was undertaken at a range of scales where appropriate during Stage 1 and 2. The aim was to record the sites and their setting using basic mapping, written and photographic records and provided an opportunity for participants to gain knowledge and understanding of recording structures and ground features.

Plate 3: *Head Dyke, Rousay. Looking southeast from Westside Road, a township head-dyke can be seen crossing the hilly terrain in the centre background. The dyke then continues running along the summit of the scrub grass-covered ridge to the left.*

The study area was walked over in a systematic manner, appropriate to the conditions and the site type/function. Each feature was given a feature number, and a written description completed on a pro-forma recording sheet. The information fully characterised the feature and included dimensions, condition/preservation, materials, form, use and interpretation. The location of each feature was recorded using a Leica GNSS (CS20/GS16). For smaller features, such as kelp pits, a centre point was considered sufficient, and for larger features, such as earthworks or dykes, the feature's edges were mapped. All GPS survey data was uploaded to a suitable GIS program. All features were photographed to create a visual record. In areas of extensive kelp burning features, however, only those features which were especially well-preserved or possessed significant or unique aspects were photographed.

All identified features were interpreted and assigned a level of importance, using criteria incorporating general guidelines used by statutory agencies such as Historic Environment Scotland. The results of the walkover surveys were also used to support other aspects of the project and fieldwork, including desk-based assessment, archive study, geophysics and excavation.

3.4 Building Recording

Sites of built industrial heritage will be visited and recorded during Stage 1 and 2. Where appropriate, exterior and interior elevations and features to the standards of CIfA and other professional bodies (CIfA 2014c). A building recording survey might be undertaken in combination with other activities such as a walkover of the surrounding area and measured survey.

These aims will be accomplished with:

- Training in observing and recording architectural features using the correct terms and nomenclature
- Training in observing and recording evidence for the modification, adaptation and repair of built structures
- Surveys at the selected sites.
- A photographic survey will be undertaken at all sites for inclusion in the web-based archive

4 Research Themes

4.1 Traditional Farming and Agricultural Improvement

Settlement and agriculture were centred around the run-rig system with scattered farmsteads and the use of common land for grazing and this remained essentially unchanged for centuries across the North Isles. The pattern of pre-Improvement land use and settlement can be traced through place-name evidence, often back to the Viking and medieval periods, and many of the existing patterns of land use and the layout of townships are likely to have their roots in the medieval period. Orkney retained much of its Norse farming traditions and systems of land tenure well into the nineteenth century though, by the early nineteenth century some of the resident gentlemen-farmers were coming under the influence of agricultural enthusiasm (Glendinning & Martins, 2008: 67; 133).

Other than the surviving areas of unimproved land, the physical evidence for the pre-Improvement landscape is visible as the remnant remains of the rig and furrow cultivation throughout the islands, along with the hill-dykes that defined townships or divided farm land from the moorland, called 'hill-land' in Orkney (**Plate 3**). It was fundamentally important in an unenclosed, agricultural landscape to keep stock away from crops, and the definition of townships in the landscape helped to re-enforce the bounding together of its inhabitants, both economically and socially (Thomson, 2008: 322; 329).

There is little surviving evidence for eighteenth-century Improvement survives, though it is clear there were some single tenancy farms by 1750 and resident gentleman-farmers were investing in agricultural improvements by 1790 with flax and turnips already being cultivated (Glendinning & Martins, 2008: 67). There were a number of factors which reduced the impetuous for Improvement across Orkney. The rig and furrow cultivation resulted in most land being in multiple occupation and the frequency of disputes concerning ownership, rights and access created a barrier to Improvement. The normal method of farming – the continual cropping of oats and bere – was only possible due to the large amounts of seaweed available for use as manure. This method meant that no animal fodder was produced and animals were left to graze the unenclosed common land (Glendinning & Martins, 2008: 67). As the 'Age of Improvement' gained momentum across Britain, Orkney landowners were making enormous profits from the kelp industry and so did not need to increase the productivity of their land, besides, under the feudal taxation system that was still in place in Orkney, corn output was taxed and this proved to be a significant disincentive increasing output (OA D14/5/12). There was also the issue of there being no reliable transport to carry agriculture produce to the mainland (Glendinning & Martins, 2008: 68).

Plate 4: *Scar House, Sanday. An example of a larger steading, the farm was originally established in the seventeenth century, but the earliest remaining buildings on the site date from the late eighteenth and early nineteenth century. These were altered and added to over the nineteenth and twentieth centuries.*

The terrain in Orkney is generally low-lying and the soils fertile, making islands highly suitable for more intensive agriculture (Glendinning & Martins, 2008: 135). Widespread land enclosure began in earnest in Orkney in the early 1800s with the division of the commons, and the introduction of agricultural improvements initiated by landowners resulting in a regular grid pattern that replaced the system of rig-and-furrow and the old dykes (Thomson, 2008: 387). The rate and spread of these improvements varied both between the island and across individual islands themselves (Card, 2002: 11). Improvement of the Graemeshall estate in Mainland had begun in 1828 but there were problems getting the tenants to abandon oats/bere pattern, leaving the landowner with no scope to introduce fodder crops or improved animal husbandry (Glendinning & Martins, 2008: 68; Ritchie, 1996: 66). Robert Scarth of Scar in Sanday, who was factor of many estates and is described as being 'more than any other individual, [the] architect of agricultural Improvement' in Orkney (Thomson, 1987: 223), abolished runrig on all the estates under his charge in 1831 (Pringle, 1874: 11; Glendinning & Martins, 2008: 67) yet, it appears, that the Scar estate itself was not enclosed until 1877 (Glendinning & Martins, 2008: 68) (**Plate 4**). Shapinsay is perhaps the most starkly enclosed landscape of the North Isles, with its planned village and rigid north- south field axis, implemented by the island's landowner, David Balfour of Balfour Castle, although large areas were still unimproved as late as 1880. The other isles were also gradually improved, although some islands had a more mixed approach. The piecemeal improvement of crofts being amalgamated into larger farms (Thomson 2000, 42) ran side-by-side with the introduction of model farms such as Greentoft on Eday and Stove on Sanday (Thomson 2008, 339).

In 1829 Lord Balfour wrote that he intended to make improvements and replace many of his existing tenancies with leases. He sought to give preference to existing tenants especially those he felt deserving of the opportunity but also expressed the need to bring in new individuals and families who would be more disposed and adaptable to change than those

who had worked their plots for generations (OA D2 Box 12, bundle 6). It was clear that the main incentive for landowners was to increase their rental income (Glendinning & Martins, 2008: 68). The collapse of the kelp industry (see **Section 4.3** below) accelerated the need for landowners to find alternative ways in which to make their land-holdings more productive. The end of the 'Great Kelp Boom' coincided with the introduction of the regular steamboat service in 1836 enabling produce to be exported and agricultural labour and experienced specialist to be imported. By the 1840s there were significant numbers of agricultural labourers from outwith Orkney looking to take up leases (Glendinning & Martins, 2008: 136). Some landlords had been impoverished by the collapse of kelp-making and could not afford to make improvements now they were needed, resulting in some estates being put up for sale and some gave financial assistance to tenants to fit up boats to bring in capital from fishing (Glendinning & Martins, 2008: 68).

Plate 5: *East Quarryhouse, Eday. This is an example of a farm with the buildings laid out in a linear plan. The buildings show a high quality of workmanship in the stonework than was usual and so it is highly likely that they were constructed by a quarry worker(s) from the nearby Fersness Quarry.*

Agricultural Improvement brought with it changes to the layout, design and function of farm buildings, and much of the 'Industrial Heritage of the North Isles' project fieldwork examining the 'Traditional Farming and Agricultural Improvement'-theme focused on the recording of farm and agricultural buildings. The ideas of Improvement considered that only those farms which measured over 81ha in size were justified in having the main buildings in a courtyard arrangement, and farms of this size are in a minority in the North Isles. Farms of 40ha tended to have buildings arranged in an L-shape with smaller farms having linear ranges in a single block (Glendinning & Martins, 2008: 135-6). In the 1820s all the farms in the North Isles still retained the traditional linear arrangement for farm buildings (**Plate 5**), with the larger farms having two- or three-additional buildings in parallel to the main range, and it is probable that this arrangement was the one most well-suited to wind-swept islands (Glendinning & Martins, 2008: 67). An 1828 map of Overbister in Sanday shows the arrangement of existing farms prior to the reallocation of land as part of enclosure and Improvement (OA SC 11/58/96). The

farms are all laid out as parallel, linear blocks, and the area currently remains one of small farms. The process of Improvement here, therefore, was not one undertaken by a large landowner but was the work of a smaller proprietor or a group of such individuals (Glendinning & Martins, 2008: 67).

Plate 6: *The mill stones inside Click Mill, Dounby concisely illustrate the basic milling process. Grain is placed in the hopper (top centre) and slowly decants through an aperture in the upper millstone of the pair below. These are turned by the water wheel (or mill wheel), with the power transferred by a series of mechanisms and gears. The grain is ground between the mill stones and the flour is expelled into the trough (centre bottom) via the chute protruding from stonework supporting the grindstones. This is the same process seen in the larger mills where the various components would be separated across multiple floor levels.*

The reforms carried out in the period between 1840 and 1875 saw livestock numbers doubled, the acreage of land cultivated increasing by 75% and 'left Orkney as perhaps most comprehensively Improved agricultural region of UK' (Glendinning & Martins, 2008: 136). Three hundred threshing machines were introduced to the archipelago between 1850 and 1874 (*ibid*). It was this expansion in machinery, animals and produce that created the necessity for landowners to rebuild their farms, and most of the farm buildings in the North Isles consequently date from the second-half of the nineteenth century (Glendinning & Martins, 2008: 67; 136). Both the larger farms and smaller steadings were rebuilt to accommodate Improvement and the introduction of sheep-farming, as well as opportunities for some diversification. Many small holders specialised in poultry as the exportation of eggs to the Scottish mainland expanded after 1870 (Glendinning & Martins, 2008: 136). Small holding farms had flagstones, approximately 1.5m above the floor, across one corner of a byre to provide nest sites, with roosts above cattle stores or over a pigsty (Rendall, 2002: 56; 62; Glendinning & Martins, 2008: 136). Some landowners gave financial assistance to their tenants to fit up boats to enable them to bring in capital from fishing (Glendinning & Martins, 2008: 68). The larger landowners, such as the Balfours in Shapinsay, also invested in both large and small farms to support a range of income though the link between farming and fishing was never as strong as that in Shetland (Glendinning & Martins, 2008: 135).

Plate 7: *A threshing machine at Quoyfaulds, Eday. These machines separated the grain seed from the stalks and husks. The first threshing machine was invented by Andrew Meikle c.1786 and 300 threshing machines were imported into Orkney between 1850 and 1874. It is probable that the larger farms built or had manufactured, their own bespoke machines. A number of examples survive across the North Isles though they are vulnerable to deterioration through age or neglect.*

Plate 8: *An example of a corn drying-kiln which formed an integral part of a farm building, usually a barn, which served a larger farm. This example is at Odin-ness, Stronsay and shows the typical bee-hive shape of the kiln's outer structure. The exterior access is unusual as the kiln floor and fire hole were more typically accessed via the interior of any attached building*

4.2 Mills and Milling

Mills are an essential part of the historical fabric of the built environment and were, essentially, engines designed to perform useful tasks, primarily the processing of foodstuffs (Watts, 2005: 5-6). Across the North Isles, examples of water-powered, wind-powered and animal-powered mills and milling machinery can be found. Later, motor-powered mills were introduced, perhaps the most notable example in the North Isles being Millhouse in North Ronaldsay (see **Section 5.3** below). Mills were used for grinding and threshing and it is believed that the use of windmills to power threshing machines is unique to Orkney. Examples may also have been used for additional tasks such as powering saw benches or straw chopping (Hutt, 2019: 2-3).

Plate 9: *The remains of a corn drying-kiln at Zoar, Eday. This is much smaller than the example at Odin-ness and is typical of the kilns attached to a steading comprising a single, or two, linear ranges occupied by a single family.*

The water wheel in a water-powered mill can rotate horizontally or vertically. Horizontal mills are generally seen as a 'primitive', less technologically-developed form (e.g. Cruden, 1949). However, most of the surviving examples are nineteenth-century examples, much larger than

Norse examples, and occasionally, as in the case of the Click Mill at Dounby (**Plate 6**), were constructed to replace a vertical-wheeled mill at the same location (Harris, 2019: 26-8). The horizontal mill is more prevalent in Shetland and Lewis than Orkney (Hutt, 2019: 2), and there are no examples listed in Canmore for the North Isles.

Plate 10: *The engine-powered mill at Millhouse, North Ronaldsay. The corn drying-kiln occupies the northeast end of the building, closest to the camera. The timber structure protruding through the roof is the kin vent which allows the escape of the hot air rising from the kiln. Others examples seen across the North Isles, such as Meikle Mill, possess more modest kiln vents.*

In a review of documentary and cartographic sources, Graeme Collie (2008: 53-66) identified nine vertical water-mills dating to the eighteenth or nineteenth centuries across the North Isles, in North Ronaldsay, Papa Westray, Rousay, Sanday, Stronsay and Westray (*ibid*: Table 1). He did not identify any earlier examples in the North Isles (*ibid*: Table 2). A noticeable absence from Collie's review is Eday. The mill situated inland from Mill Bay dates from 1682 and possessed a vertical wheel, with a water supply from Mill Pond 160m to the northwest, and a corn drying-kiln (Hebden, 2008: 150). There appears to have also been a mill at Greentoft at the south end of the island, and a mill was added to Carrick when the steading was expanded in 1858 (*ibid*:115; 116). It was common for many farms across the North Isles to have their own threshing machines (**Plate 7**), and a number of them would have possessed their own grinding mills. It was also common for farms to have their own corn drying-kilns to prepare the grain for grinding (**Plate 8** and **9**).

The larger mills, such as Meikle Mill in Stronsay and Millhouse in North Ronaldsay, would undertake grinding for a number of farms and possessed different grindstones for multiple grains and produce, such as corn, bere, meal. Often, landowners who have their own mills which their tenants were required to use, such as at Holland in Papa Westray. Both Meikle Mill and Millhouse, as well as Trenable Mill in Westray, are examples of mills with an integral corn drying-kiln. These occupy one end of the building and comprise the kiln oven at ground floor with the space above being open to the roof which incorporated a kiln vent (**Plate 10**). The kiln was usually fuelled by a bedding of choke over which grain husks and mill dust would

spread. The kiln floor would be at top floor level and these typically consisted of square metal plates resting on girders. The plates would be perforated to allow the hot air to pass through and there would be partitions to keep the grain from different farmers separated. Grain would be stored prior to drying when it would be spread out over the steel plates of the kiln floor. The hot air passing through the perforations would then dry the grain. At Meikle Meal Mill the dried grain was stored on the ground floor before being hoisted to the first floor for grinding. This mill had three pairs of grindstones. One pair were the shelling stones which separated the husk from the kernels and the mixture would pass through a hopper with a blower to collect the husks for storage and use as kiln fuel. The kernels would then be ground in another pair of stones, the distance between the stones determined whether the produce would be fine or course meal. The ground kernels would than flow down a chute to the ground floor fitted with a sieve to remove the very coarse inclusions before the flour flowed into bags. Each farmer would have his own bags and these would be weighed to determine the payment due. Flour bags were stored on the first floor so that the external doorway and hoist at that level would enable the bags to be lowered onto the farmers' carts.

Plate 11: *The windmill base at Millhouse, North Ronaldsay. This is an example of a turret post mill which would be topped by the timber-built main body of the windmill sitting on a timber post supported by the stone-built base. A drawing from c.1908 shows that this windmill had a long tail beam which allowed the main body to be revolved thus turning it into the wind.*

There are twenty-five windmills or wind-engines listed in Canmore across the North Isles. A high proportion of the entries categorised as 'wind-engine' are also associated with a threshing machine so this may be some attempt to differentiate between post- and tower-mills used for grinding corn with those windmills used to power threshing machines. No complete examples of a windmill survive in the North Isles, the physical remains being limited to a conical stone base (**Plate 11**), often with fragments of a central timber protruding from the top. This form of windmill, the turret post mill, is generally dated to the early eighteenth century (Donnachie & Stewart, 1967: 277-8; 280) but the North Isles' windmills recorded on Canmore are considered to be nineteenth-century examples. Donnachie & Stewart (1967: 280; 298) identify a type of windmill dating to the nineteenth and early twentieth centuries, and unique to Orkney for which

they use the, possibly derogative, term ‘amateur windmill’. These comprised four to six canvas sails attached to the side of a farm building to drive milling machinery or a threshing machine. During the site visits and fieldwork for the project a number of threshing barns were identified which were associated with what appeared to be a horse-mill or horse-gin (**Plate 12**). It is not currently known what factors determined the use of the ‘amateur windmill’ rather than horse-mills or to what extent their usage is contemporary. One possibly significant feature of the ‘amateur windmill’ is that they could be easily dismantled and re-erected at a new location (Donnachie & Stewart, 1967: 298).

Plate 12: *The horse-mill at Holland, Papa Westray. The building is circular in plan and the horse would circumambulate the interior to power the mill. This particular example provided the power for a large threshing machine house in the building to the left.*

4.3 The Kelp Industry

Kelp-making, which for this study includes both the burning of seaweed in pits and the drying of tangles on dykes, was an important industry in Orkney during the early modern period. It became, at times, a primary driver in the economic fortunes of the islands as a whole, at different levels across individual islands. As an industry which was important to the socio-economic history of the North Isles it was important that the project considered its development and its effect on inter-island commerce. The historical and economic study of kelp-making in Orkney has received special attention from a number of studies such as those by Fenton (1978) and Thomson (1983; 2008). Though these are well-known in the study of the island and these are incorporated in many general histories of Orkney and often form some part of exhibitions, information and heritage centres, the archaeology and the physical remains of the industry have not been well-served. The Historic Environment Scotland databases such as PastMap and Canmore include kelp-making sites in their inventories, but the information contain is usually limited to a centred NGR and a reference to the presence of kelp pits and/or

tangle dykes with little additional detail such as number, dimensions, or state-of-preservation. The current project presented an opportunity to address this knowledge gap as well as providing the community to participate in the required surveys and gain experience in techniques such as archaeological measurement, recording, photography, survey including the use of GPS survey systems in a heritage context. Also providing an opportunity for those with more of a historical or desk-based enthusiasm to undertake a more island-specific approach to studies of the kelp industry.

Plate 13: *A collapsed and eroded kelp pit on the beach at the Links of Noltland, Westray. The stones that originally lined the pit still remain form a ring in the centre of the mound.*

Kelp had been a long-standing important resource for the farmers of Orkney (Fenton, 1978: 274-5), but its collection and processing had initially been undertaken on a small-scale. The high nitrogen content was ideal for use as a fertiliser on Orcadian fields (Fenton, 1978: 58; Thomson, 1983: 16; 28-9) and local farmers would undertake kelp burning in order to spread the material on their fields. On those islands where peat was in short supply or absent, or where its use was controlled by landowners, dried seaweed was also used as a fuel source. This usage was essentially unregulated by landowners whilst their primary concern and source of income for their tenants was based on agricultural produce. The gathering and burning of kelp was seasonal, undertaken during a 'slack period' in the farming year when the supplies of seaweed washing up on the shores was plentiful and the need for agricultural labour was low.

From about 1720, kelp was exported from Orkney to the northeast of England for use as a source of sodium (soda) in both the glass-making and soap-making industries, as well as for making dyes (Thomson, 2008: 39; 363). Kelp-making still remained a low-key activity. The seas around Orkney produce high quantities of seaweed (Thomson, 1983: 14) and, by putting their farm labourers to work on the shores and collecting a surplus, the lairds were able to supplement their incomes for very little investment. With the onset of the French and Napoleonic Wars in the late eighteenth century, however, Britain was denied access to the kelp sources of the Mediterranean and, as a result, both the Western Isles and Northern Isles

became important centres of kelp produce. Even the smallest pools and skerries, such as Taing Skerry off Shapinsay, became sources of wealth (Thomson, 1983: 17) and, with the promise of large profits, the men and women of the farming communities were compelled by the lairds to spend more of the year collecting kelp, and actively harvesting material from the sea.

Plate 14: *A probable kiln identified near Latan, Stronsay. It is unlikely, however, that the kiln was used for kelp burning © Ian Cooper.*

Kelp would be gathered from the shore or cut from beds of seaweed using a serrated hook that ensured the plant would not be irreparably damaged and that growth continued. The kelp was burnt in pits located inland of the coastal section. These were circular in plan and lined with stone fragments to help retain the heat (**Plate 13**). The process reduced the kelp to a glutinous mass, referred to as ‘cake’, which hardened as it cooled and could then be broken into pieces. Twenty tons of wet seaweed yielded about a ton of kelp. The price paid for kelp was dependant on its quality, and the content and purity of the required chemicals. Kelp from the base of the pit brought a lower price as it was contaminated with ash and fragments from the fuel used in the burning process. The burning of kelp was unpleasant, dirty and potentially hazardous to health and the work often caused resentment among the islanders (Thomson, 1983: 75-6). As well as being unpleasant, the work was carried out to the detriment of agricultural tasks as landowners sought to maximise their profits whilst simultaneously compromising the subsistence and momentary thingies of their tenants and their ability to do so. The technology for burning the seaweed was fairly simple and remained so throughout the life of the industry in Orkney, despite the general poor quality of the kelp produced (Thomson, 1983: 37). A Captain Richan is noted as having erected a reverberatory furnace for kelp burning in Rothiesholm, Stronsay (*ibid*) in the early nineteenth century. The origin of this comes from a reference to such a furnace on 'the holm of Roufkholm' (Neil, 1806: 31). It is more likely that this is a reference to Captain Richan who owned the Rapness estate in

Westray at this time and the estate would have included the small island of Rusk Holm (Ian Cooper, *pers. comm.*). A probable kiln, however, is located near Latan in Rothiesholm[1] and this was visited by volunteers undertaking a walkover survey as part of the project (**Plate 14**). No advance kiln was accepted for use in the kelp industry. It was an industry founded on the principle of negligible investment for maximum profit and an improved kiln or furnace would burn kelp at such a rate that it would have soon exhausted the available supply in the immediate vicinity and require frequent dismantling, moving and re-erection (Thomson, 1983: 37-8).

Plate 15: *The high value of processed kelp meant that, prior to export, the commodity had to be stored in a secure place, and often close to the sea. This example of a kelp store stands close to the pier at Nouster, Papa Westray.*

From the 1780s to the 1830s, a period termed 'The Great Kelp Boom', the economy in Orkney was dominated by the production of kelp (Thomson, 1983: 15). Landowners were keen to protect the income from kelp and tightly controlled the industry, the restrictions on gathering kelp were a further source of resentment for islanders. In both Orkney and Shetland, tenants were often required to pay part of their rent in kelp and any excess had to be exported through the landowner or his agent. The islanders were prohibited from selling directly to kelp merchants often denying them an opportunity to receive a fair price. In 1830, the Marwick family were evicted from Scockness, Rousay for unauthorised kelping activities (https://rousayremembered.com/pow-faraclett-scockness/). Landowners brought in labour from outwith the North Isles to boost production, particularly when labour was short. In 1810, the Balfour estate brought in nineteen women from Caithness to make kelp at Huip, Stronsay (Thomson, 1983: 63). Such workers were often paid less than the tenants but when the

[1] The kiln identified by the survey is located at NGR HY 62797 21830. The Canmore record for the structure (Canmore ID 3394) places the kiln, however, at NGR HY 6312 2222 which is approximately 180m northeast of its actual position.

shortage of labour became more generalised and widespread, imported labour could demand increased wages.

Plate 16: *Remains of kelp pier at Bay of Greentoft, Eday. A kelp store stood close at the landward end of the pier, above the coastal edge.*

The production, storage and export of such a valuable commodity resulted in the construction of structures across the North Isles, such as kelp stores and piers specifically for the loading of ships coming to the islands specifically to transport the crop (**Plate 15** and **16**). Two kelp stores are listed on Canmore, at Noup Hill in Eday (Canmore ID 3168) and at Nouster in Papa Westray (Canmore ID 179664) and other examples are still extant, and put to other usage, in Westray (Pierowall), Sanday (Kettletoft), Stronsay (Whitehall) and North Ronaldsay (Orkney Ferries Terminal). The extant kelp stores are all stone rubble-built structures designed to protect their valuable contents. There is a local tradition that, in 1725, the pirate John Gow was locked in the Eday kelp store whilst awaiting the ship that would transport him to London for trial, illustrating that these were secure structures. The kelp pier in Eday sits in the Bay of Greentoft, at the southern end of the island, a considerable distance from the kelp store on Noup Hill. No building currently stands close to the pier, but a roofed structure is shown above to the landward end of the pier of both the First and Second Edition 25-inch Ordnance Survey maps (Orkney XCI.8, 1881; 1902). The building is not identified on these maps but the 1881 Census data show a ‘kelp store’ near to Maltbarn. This farmstead is located approximately 140m to the east of the pier.

The onset of peace following the Napoleonic Wars, opened up opportunities for cheaper alternatives to be gained elsewhere (Grieve & Gibson, 2005: 75). As a result, the industry in Orkney saw a massive contraction and eventual ‘bust’ as duties were lowered on imported kelp. The collapse of the kelp industry and the need of landowners to find an alternative source of profit was one of the factors which led to drive for agricultural improvement across the North Isles (see **Section 4.1** above). North Ronaldsay (**Plate 17**) was a community heavily impacted by the needs of kelp processing and the relatively rapid contraction of the industry (Thomson, 1983: 96). Imported labour had boosted the population beyond the island’s capacity and when

the 'The Great Kelp Boom' ended, agricultural work alone could not sustain such numbers. In 1836, the laird organised a large-scale emigration from the island. Thirty-two families were resettled on the under-developed west side of Eday (Thomson, 1983: 96). More North Ronaldsay families were resettled when Fersness Quarry in Eday started continuous operations in 1855. Being fully employed at the quarry, these families did not need a farmstead to support them (Hebden, 2008: 116-7).

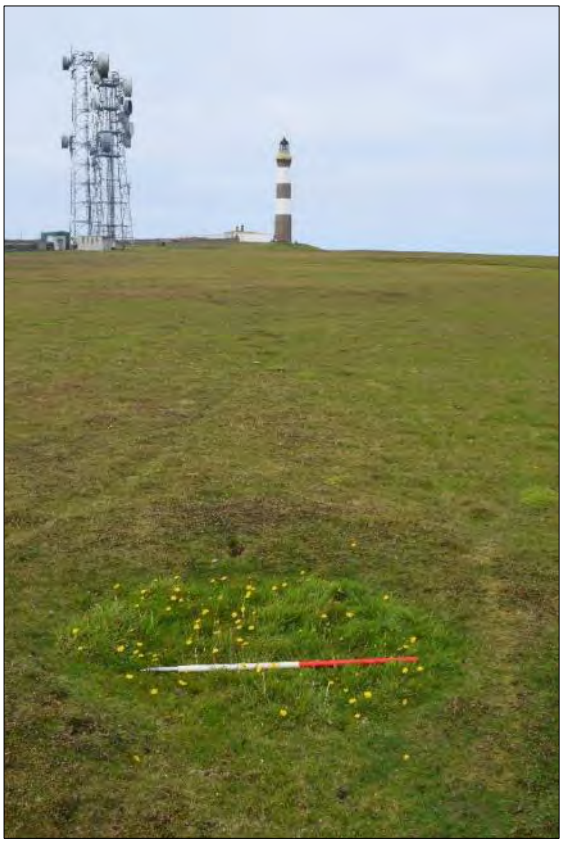

Plate 17: *The remains of a kelp pit at Dennis Head, North Ronaldsay with the lighthouse in the background.*

From the 1840s, kelp was used in the production of iodine which was in use as an anti-septic. First extracted from seaweed ashes in 1811, by the mid-nineteenth century its use in Victorian Britain was ubiquitous in the treatment of cuts and bruises. One of the main manufacturing centres was Glasgow, with twenty manufactories located in the city by 1846 (Thomson, 1983: 39). This was the main industrial use for Orcadian kelp in the later nineteenth century, but these were not 'boom' years or a source of great profit for landowners. There were no competing markets for kelp, even though some kelp was still exported on a very small-scale to glass, soap and dye manufactories, and the price of kelp suffered from there being near monopoly conditions. The trade from Orkney probably only made a profit as the sailing smacks were able to make the return journey loaded with coal rather than ballast (Thomson, 1983: 43). In 1978, Fenton wrote that, 'kelp burning still lies within the period of living memory', with one of the last occasions of kelp burning recorded in 1925 (Fenton, 1978: 64).

In the twentieth-century, 'tangles' (cast kelp) continued to be processed for use in the production of alginates. After the Second World War, when alginate fibres were used in fire-proof material such as camouflage, alginates were used to form gels for use in textile printing, processed foods, paper-making and pharmaceuticals (Thomson, 1983: 105-6).

The gathered tangles have to be dried and this is accomplished by laying the tangles on tangle dykes. These are built fairly low in height and approximately 1m in width (**Plate 18**). The majority of the surviving examples surveyed during the project fieldwork were orientated perpendicular to the coastal edges but a significant number running parallel to the coast were also seen. The length of tangle dykes, which are variously called 'steeves' or 'beeks' on the North Isles, averaged approximately 4m with some examples being 7m or 8m in length. The minimum length of the dykes when they were in use is difficult to determine. Those lying close to the coastal section have been subject to truncation through coastal erosion or have become partially submerged with the stones of storm beaches. There are also examples which have subsequently been robbed of stone or, in particularly sandy areas, become covered by wind-blown material. It takes about 5 tons of wet weed to produce 1 ton of dry tangles and, once dry, it has to be bundled up for transport.

Plate 18: *The tangle dykes at The Links, Westray. These examples run perpendicular to the coastal edge.*

The tangle trade continued into the 1970s and 1980s in some areas of the North Isles. The trade provided additional income to individuals, but it never employed the large numbers of labourers or the profits seen in the early nineteenth-century kelp trade of the nineteenth century (Thomson, 1983: 105-6). In Westray, one tangle operation began in 1966 at Grobust (NGR HY 42935 49387), north of Pierowall. Over subsequent years, the gathering of tangles moved eastwards along the shore, eventually as far as North Haven (NGR HY 44422 50407). In the heyday of the 1970s and 80s the yield of dried tangles was often 400-500 tons per year, but by the later 1990s this was down to 100tons. Production ceased in 1998, with the final season's work coincidentally being documented in German magazine (Tom Rendall, Westray *pers comm*.).

4.4 Herring Fishing

Until the development of rapid rail transport, the markets for fresh fish were exclusively local, though Scottish salt herring had been a major export since the later medieval period (Hume 1977: 33). The eighteen and nineteenth centuries saw a development of fishing with many

landowners and improvers seeing the industry as a means of improving the standard of living in the Highlands and Islands, and herring was seen as a key component of this (Hume 1977: 33). Heering fishing brought about the setting up of curing stations and other infrastructure at major ports in Scotland, and many smaller warehouses around the nation's coast were used as curing stations also (Hume 1977: 33; MacLean 1985: 101).

At beginning of the nineteenth century, Orkney lacked any real fishing tradition, with the number of boats engaged in fishing being minimal and providing only a very small additional income to farmers (Gray 1978: 124-5). One significant reason for this was the large supplementary incomes that could be gained from kelp burning, particularly in the North Isles (Gray 1978: 125; MacLean 1985: 102).

During nineteenth century, however, a fishing industry developed in Orkney which was mainly focused on herring (MacLean 1985: 94). This was a highly seasonal industry (Hume 1977: 33) and, though some of the larger centres in Scotland relied on the industry for year-round employment, there was a considerable itinerant workforce and by the late nineteenth century the herring season (July to September) would see up to 5000 fishermen, gutters and packers coming to the islands (Hume 1977: 33; MacLean 1985: 94). Part of the shift towards fishing as an alternative came from the decision, in 1832, by the British Government to remove the import duty on barilla, a cheap alternative to kelp, which led to the collapse of the domestic kelping industry (Gray 1978: 126; MacLean 1985: 102). In the 1830s and 1840s, Orkney had at least 724 boats used mostly for herring, with 710 working from Stronsay and Stromness (NSA, XV: 214; MacLean 1985: 94). Herring boats were present across many of the islands and these vessels were much larger than those used in the islands in the 1790s (Gray 1978: 126).

Plate 19: *The sea frontage at Whitehall, Stronsay*

Several villages grew up out of the 'herring boom', as the islands witnessed seasonal population expansions both from the itinerant workforce and part-time crews from across Orkney moved to central points such as Stronsay and fished continuously for the summer

season (Gray 1978: 126; Grieve & Gibson 2005, 77; Thomson 2008, 370). The village of Whitehall, Stronsay (**Plate 19**) grew up out of herring fishing, and during the late nineteenth and early twentieth centuries, Whitehall was the 'northern capital' of the industry (Card 2002, 11). A fishing station was established on Papa Stronsay solely to serve the needs of the herring industry, curing and gutting sheds were built in Whitehall, with fish being landed by the fishermen and sold directly to the curers, and a fish offal factory was built to the south of the village (Card 2002, 11; Gray 1978: 126; MacLean 1985: 101). The rapid growth of the industry also saw the construction of purpose-built fisherman's accommodation. Once these were no longer needed, they were quickly vacated and became neglected. Some of these survive today and the need to examine and record these structures has been highlighted (The Heritage Place 2016c; 2016d; 2016e).

The herring industry in Orkney was, however, built on an insubstantial base. The local fishermen failed to produce an income that justified the initial outlay of income to purchase the vessels and equipment, and certainly not enough to invest in improvement as the technology developed. Orkney's fishermen remained essentially farmers and so only fished in local waters, depleting the easily accessible stocks. This was due to the pace of agricultural improvement in the islands (see **Section 4.1** above) which increased opportunities for full-time farmers and labourers. Agriculture became the main source of spare capital and the natural choice for further investment (Gray 1978: 126). The number of herring boats in the islands began to decline and debts to the curers became a serious problem. By 1914, there were very commercial fishermen resident in the islands left, and none of them undertook fishing in winter (Gray 1978: 126-7). In the first quarter of the twentieth century, the fishing industry returned to being one of vessels, and most of the crews, originating outwith Orkney and spending very little time in the waters around the islands, instead pursing larger catches in more northern waters (Gray 1978: 126-7; 171).

5 Building Surveys

5.1 Eday, Redhouse (Reidscastle)

Redhouse (Canmore ID 298162) is located at NGR HY 55756 38475 in the northwest of Eday. The farmstead stands to the east of Papleyhouse and Park, is 425m northwest of Vinquoy chambered cairn, and overlooks Cusbay (**Plate 20**).

Plate 20: *General view of Redhouse looking west towards the Sound of Faray. The view shows the three ranges comprising the main farmstead complex along with remains of enclosure walls (foreground)*

The site was visited as part of the project launch in Eday during February 2024. Recording of the site was undertaken by the ORCA team and local volunteers in September 2024. A comprehensive photographic record was created and general observations about the upstanding structures were recorded, covering a total of seventeen buildings and structures.

5.1.1 Historical Background

The First Edition 25-inch Ordnance Survey map (Orkney LXXX.15 (Eday) 1881) identifies the farmstead as ‘Reidscastle’ and shows three, east-west ranges. The centre and south ranges are shown as single, rectangular structures, with the north range depicted as comprising four buildings of varying widths and a small outbuilding to the west. The Ordnance Survey Name Book (1880) describes Reidscastle as:

> This name applies to a small farm house situated about a half mile west of Carrick House and in the district of Cousbay. It is one storey, slated and in good repair, offices attached and the same good repair.

The Second Edition 25-inch Ordnance Survey map (Orkney LXXX.15 1901) shows an almost identical layout with the addition of a single, roofed structure approximately 50m north of the main farmstead ranges. The building, a water-powered threshing mill, stands against the south edge of an east-west drain, which was not depicted on the First Edition map, running from a pond at its east end. This pond matches the location of a quarry on the First edition map.

The Census data show that the property, listed variously as Reid House; Red-hall; Reid Hall; Reid's Castle; and Redhouse, was occupied by the Reid family throughout the period from 1841 to 1921. The 18412 Census lists Margaret Reid, 42 years old, and her four children. She is still resident in 1851, along with her husband James Reid, 45 years old, who is described as a mason. The couple still live at the property in 1861, along with all their children, and James is noted to be a 'Builder & Crofter'. The eldest daughter, Jane or Jannet (29 years old), is listed as a widow (she was unmarried at the time of the 1851 Census) with a son, James Miller (3 years old). She works as a knitter, whilst her younger brother, James, is a boot and shoemaker, and her younger sister, Margaret, is a seamstress. The youngest sibling, Robert (18 years old), has no occupation listed.

The 1871 Census has three entries for Reid Hall. James Reid, now a widower, is once again listed as a mason, and this entry also lists his youngest child, Robert, who still has no occupation listed. The second entry is headed by Jane Miller (née Reid), still listed as a widow and living with her son, James, and a daughter, Johane Allan (5 years old). The third entry is headed by James Reid's oldest son, James, who is again listed as a shoemaker and is now married to Janet, who is recorded as being born in Faray.

Plate 21: *North range of Redhouse, looking southwest.*

The 1881 Census has two entries for Reid's Castle. The first is still headed by James Reid, now 75 years old and listed as a 'Crofter & Mason'. He is listed along with his eldest daughter, Jane Miller. Her son is not listed but her daughter Johan(e) is still resident and described as a knitter. The second entry comprises James Reid who is recorded as now being a 'Shoemaker master' and his wife from Faray, Janet.

James and Janet head the single entry for the property in the 1891 Census data. He is still recorded as a shoemaker, and his elder sister, Jane Miller, is listed as a general servant, as is her daughter, Johan(e). Also present is James' uncle, William Cragie, 88 years old and a widower. James Reid is the only member of the family still resident in 1901. Now 65 years old

and a widower, he is listed as a farmer and shoemaker. Living with him are a farm servant, James Miller from Orphir, and a domestic servant, Mary J Paterson from Westray.

Plate 22: *Detail of dividing wall (east elevation) viewed from Building 2 showing construction scar which appears to demarcate the original line of the gable roof line with the lumb rising from it.*

Plate 23: *East end of north elevation, Building 1 (North Range) showing former exterior doorway blocked up to form a small window.*

James Reid is still resident at Redhouse in 1911 and 1921, with the latter census recording that he is now retired. The 1911 Census data show that in 1906 he re-married and his wife, Mary A., was born in St Ola parish and was twenty years younger than James. The 1921 Census has two entries for Red House with he second entry being headed by Robert Reid, 78 years old. It is probable that this is James's younger brother who hadn't appeared in the data for the property since 1871. Along with Robert are his wife, Janet who was born in Glasgow and their children Mary Ann, 47 years old, and James, 41 years old.

5.1.2 Building Description

North Range

The north range is a stone rubble, single storey structure which appears to have three distinct sections (**Plate 21**). The range is divided into four on the early Ordnance Survey maps but is divided into five by the current mapping.

Plate 24: *Building 2, east elevation with central fireplace flanked by integral cupboards.*

The west section comprises two buildings (Building1 to the west and Building 2 to the east) with fireplaces and chimneys in each of the crow-stepped gable ends and the dividing wall. There is a clear construction break in the north-facing elevation showing the two rooms were built in different phases, and it seems likely that Building 2 represents the earlier structure with Building 1 added later. The construction break is not visible in the south-facing elevation due to the presence of render of the exterior wall face. The interior elevations both clearly show that these walls butt against the west end of Building 2. The wall between the two rooms would, therefore, have been the original west gable of Building 2 and it is likely that this gable was also originally crow-stepped to match the east gable. A construction scar in the interior elevation of the original west gable (**Plate 22**) shows that the wall's upper courses were re-built and the gable heightened. This was presumably undertaken when Building 1 was constructed as the presence of a small window at first floor level in the west gable of Building 1 and of floor beam-sockets in the north and south elevations indicates that this later building

had an upper floor. The fireplace in the dividing wall has also been moved to the east elevation of Building 1's east gable, where it is positioned centrally with an interior doorway to the right (south), connecting Building 1 and Building 2. To the left (north) of the fireplace is a small, blocked up window. There is also a centrally-placed fireplace in the west gable, with a large window with timber frame to the left (south) and a large, rectangular recess to the right (north). The scar of the roofline is clearly visible in the west gable. In the north elevation is a former exterior doorway which has been partially blocked to create a small window. The timber frame is still present even though the window is now also blocked up using a single piece of red sandstone (**Plate 23**). In the south elevation is an exterior doorway, left of centre, blocked to form a large window. A large rectangular recess is located to the left (east) of the doorway and is bisected by a shelf comprising a single flagstone slab. Building 1 is currently roofless though the form of the gable ends and the wall scarring on the interior gable elevations show that the roof was double-pitched.

Plate 25: *South-facing elevation of Building 3 (left of centre) with collapsed roof and bowing wall butting against the gable end of Building 2, and Building 4 (right), looking northwest.*

Exterior access to Building 2 is provided by a doorway positioned left (west) of centre in the south-facing elevation. This has a timber frame with a three-fan light above the door, a feature not seen on any other external doorway in the north range. There is a large window to the right (east) of the centre-line with the frame intact. This has two panes, divided horizontally. There are two windows in the north-facing elevation both slightly larger than that in the south though the window towards the west end has been partially blocked. The timber frame divides the window into four panes. Internally, Building 2 has a fireplace in the east elevation. The fireplace has a large stone lintel, a timber surround and mantle, flanked by two cupboards integral to the wall fabric and which extend from the floor level to the height lintel stone top (**Plate 24**). Both recesses have two flagstone shelves in the upper half. A similar cupboard is also present in the south elevation between the east wall edge and the window. The west elevation is obscured by the debris and demolished fittings. A number of the timber roof

trusses have collapsed and a small number of flagstone roof slabs have fallen but the majority of the roof is still *in-situ*, though further, extensive loss of the roof is likely.

Plate 26: *Detail of north-facing elevation showing construction break (extreme left) between Building 3 (centre and right) and Building 4.*

The centre section also comprises two stone rubble buildings, Building 3 to the west and Building 4 to the east (**Plate 25**). The two buildings are shown as a single structure on the early Ordnance Survey mapping. Building 3 butts against the east gable of Building 2 though it is slightly narrower on the south side, and on the north side it extends slightly further than Building 2. In the north-facing elevation, Building 3 has an external doorway close to the west end, with a pitched flagstone roof separate from the double pitched roof of the structure. There appears to be a construction break at the east end that would indicate a partial re-build of Building 4 when Building 3 was erected. The break is marked by a change in the size of the stone constituents and the line of the break is irregular (**Plate 26**). The flagstone roof is continuous across the construction break, its style and build matching that of Building 3. The construction break is not clearly visible in the south-facing elevation which has partially collapsed, bows out considerably, and is held upright by timber props. The construction break appears to immediately to the left (west) of the external doorway of Building 4. There is an external doorway in the south-facing elevation of Building 3, almost directly opposite the one in the opposite elevation.

The north elevation of Building 3 comprises a series of three storage bays. Each is marked by a full-height stone rubble wall with the lintel of the centre and east bays being the timber roof purlins. Rubble stone forms the lintel of both the external doorway and the west bay, and this butts against the face of the west gable. The centre bay is the widest, and the west bay is significantly narrower than the other two. The external doorway is located between the west and centre bays, and the location of the construction break in the north-facing elevation indicates that the east storage bay, including the dividing wall, was originally part of Building 4. The west elevation comprises the exterior face of Building 2's east gable and has no additional features. The south elevation features only the external doorway which has a single

flagstone slab as a fairly thin lintel. This noticeably slopes downwards to the east and this is matched by the internal feature indicating that the crookedness is not a symptom of the partial collapse and subsiding nature of the south wall. The east elevation is the west wall of Building 4 (see below) with no additional features. Much of the flagstone roof has collapsed into the interior of Building 3 with only a small portion n the southeast corner and a larger segment across the storage bays and north doorway remaining.

Plate 27: *North-facing elevation of north range showing Building 4 comprising a square-plan corn drying-kiln (centre left), looking southwest.*

Building 4 is the shortest of the buildings in the north range and comprises a corn drying-kiln, square in plan (**Plate 27**). Access to Building 4 is provided by an external doorway in the south elevation. The kiln body itself forms the northern-half of Building 4 and scrub vegetation fills the interior of the kiln, obscuring much of the interior detail. A flight of stone steps provide access to the kiln floor, where the grain would be spread out for drying, and the fire hole is located to the right (east) of the steps (**Plate 28**). The area between the exterior doorway and the kiln steps is an open, working area with a flagstone floor set slightly lower than the external ground surface. Access to Building 3 is provided by an internal doorway in the west elevation of Building 4. It is likely that Building 3 acted as a storage area for the corn-drying kiln. There is a small, rectangular aperture in the west-facing elevation of building 4 to the left(north) of the internal doorway and set below the level of the kiln floor. It is possible that this is part of the flue for the kiln. The flagstone roof outwith the kiln is complete.

The east section comprised two structures. Building 5 and 6 are shown as divided from each other by an internal wall on both the historic and the current Ordnance Survey mapping. This dividing wall continues the line of a north-south enclosure wall, extending northwards from the north elevation of the north range, which is still present though it is fairly dilapidated (**Plate 29**). The First Edition Ordnance Survey map shows the west building (Building 5) as being much narrower than the remaining buildings in the range. Subsequent mapping shows Building 3, 4, 5 and 6 to be of the same, consistent width. The current structure comprises

both Building 5 (west) and Building 6 (east) with a single, internal space and a continuous roof comprising corrugated cement sheets.

Plate 28: *Corn drying-kiln, Building 4, looking north, showing the steps leading to the kiln floor and the fire hole (bottom right).*

The west gable of Building 5 butts against the east end of Building 4. The gable is crow-stepped though the upper half is missing the crow steps. The east elevation contains a fireplace and the absence of the crow-stepping may be a result of removing the lumb above the roof line. The north-facing elevation contains a single, centrally-placed window with a stone lintel and a timber frame comprising four panes. The south-facing elevation also contains a centrally-placed widow. This is much larger than the window in the opposite elevation and the presence of a single sandstone lintel and flagstone sill indicate that this was the original size of the window. Internally the only feature is the fireplace with an integral cupboard on the right (north) side. This has a timber frame and lining. Much of the interior elevations are covered by a mortar render.

The former division between Building 5 and 6 is evidenced by wall scarring on both internal and external wall surfaces. In the north-facing elevation the wall scarring resembles a blocked doorway (**Plate 30**). No lintel was identified, however, above the scar and the location and width of the scar matched that of the enclosure wall which once extended as far as the elevation according to the map evidence. At the base of the scar is a relict stump of the enclosure wall which is keyed into the north-facing elevation. A similar scar is present in the south-facing elevation forming the west side of a current exterior doorway. This scar is also visible in the south elevation both as butting stone work and a break in the surface render. This has a slight rise curve along the edge of the break probably indicating that the render originally continued on to the, now absent, Building 5 east elevation. This was interpreted as

evidence that the dividing wall between Building 5 and 6, and the enclosure wall was originally a single structure. The original smaller size of Building 5 means that it is more likely that the dividing wall was properly the west gable of Building 6 rather than a dividing wall with a single-build structure divided into two 'rooms'. Building 5 was re-built between 1879 and 1900, on the basis of the map evidence, and it appears that it butted against Building 6 and may not have had its own, integral east gable. It is probable that the original Building 5 also butted against Building 6. The removal of the Building 6 west gable and the truncation of the enclosure at its south end at some point after 1900 necessitated extensive modification to the north and south elevation of the buildings in order to remove any relict wall stumps in the internal elevations. The floor of Building 5 comprised a concrete skim.

Plate 29: *General view of Redhouse looking southwest from close to Building 17 showing Building 1-6, 15 and 16, and the enclosure wall which originally extended up to the north wall of Building 5 and 6.*

The north-facing elevation of Building 6 contains a single, small window close to the west end, with a timber frame comprising a single pane. The east-facing gable contains a single, large external doorway with a timber lintel. Its width comprises over half the length of the elevation at ground level. It appears that the gable has been heavily modified. Unlike the other buildings in the north range, this gable is not crow-stepped and it likely that this is the result of the installation of the cement sheet roofing. There is mortar render above the lintel, and there are thick mortar deposits between the stonework and the roof. The edges of the visible stonework below the line of the door lintel, resemble a crow-step shape which may be indicative of the original form. Also, unlike the west gable of Building 5, there is no stone abutment of the form which acted as flashing between the original roof material and the raised stonework of the gable. The stonework forming the edges of the doorway has no large quoins similar to the corner quoins. The use of quoins along the vertical edges of external doorways is a feature of the other original doorways in the north range. The south-facing elevation contains a large window, blocked by a single red sandstone slab, close to the east end. The timber frame is still *in-situ* behind the blocking slab and comprises four panes. An external doorway is centrally-placed in the south-facing elevation. This blocked using stone constituents which are generally smaller in size than those seen in the walls of the building. To the left (west) of this is the current external doorway. It is unclear if this doorway formed part of the original build of

Building 6 or is a modification undertaken as part of the removal of the west gable. The interior elevations are rendered and no additional features were identified. It was noted that the build quality of the doorway blocking was poorer than that of the external elevation. Also, both windows were seen to be set in sloping apertures resulting in their being much wider in the internal elevations that the external. This may indicate that Building 6 was originally a domestic structure. A large amount of dilapidated farm machinery and building furniture and fittings are stored within Building 6 obscuring much of the interior surfaces but it was noted that there was a flagstone floor throughout Building 6.

Plate 30: *North-facing elevation showing the wall scarring which marks the former division between Building 5 and 6. The remains of the former enclosure wall at the base are keyed into the elevation.*

Centre Range

The centre range is depicted as a single, undivided structure on the First and Second Edition 25-inch Ordnance Survey maps. The current mapping shows the rage divided into four unequal parts with only the east division being roofed. This matched the form and state of the buildings during the current scheme of recording.

Building 7 forms the east end of the centre range and is a stone rubble-bult structure with a single external doorway close to the west end of the north-facing elevation. The east-facing gable contains a small, square aperture close to the south end. The west-facing gable butts against the face of Building 8 east-facing gable, and the west end of the south-facing overlaps a slight extension of the south wall of Building 8. This was considered to be indicative of Building 7 being a later addition to the east end of the centre range. There is an oddle hole at the base of the south-facing elevation close to the west end. Extensive mortar deposits on the surface of the wall above it may indicate that the oddle hole may have been reduced in height. The double-pitched roof comprises sandstone flags with red sandstone predominating. Internally, many of the fixtures and fittings remain intact. There is a wooden trough in the southeast corner and timber divider forms an animal stall in the southwest corner (**Plate 31**). The oddle hole runs from this stall. A tethering ring is affixed to the wall in the northeast corner. Flagstone slabs the whole of the floor.

Plate 31: *Stall for livestock in the southwest corner of Building 7.*

Plate 32: *East elevation of Room 8 with the west-facing gable of Building 7 behind showing possible blocked doorway to the right (south) of the fireplace.*

The remainder of the centre range is a single structure divided into three parts recorded, from east to west, as Room 8, 9 and 10 to preserve the on-site numbering sequence. All three

rooms are roofless but the shape of the gable ends and dividing walls show that the roof was double pitched. The east-facing gable of Room 8 butts against the west end of Building 7 and the east elevation contains a fireplace (**Plate 32**). There is no lumb visible above the gable roof line and this may have been dismantled when Building 7 was constructed. There is a deep recess to the right (south) of the fireplace and chimney breast with a single flagstone lintel. The rear of the recess appears to be blocking stonework in two discrete phases and could possibly form part of the west gable of Building 7. The recess may, therefore, have originally been a doorway. The south-facing elevation contains a small widow close to the west end and the north-facing elevation contains an external doorway right (west) of centre. There is no evidence for either the doorway or the window having a timber frame. The internal space between the exterior doorway and the west elevation is occupied by the remains of a forge with the main hearth structure being located in the northwest corner of Room 8 (**Plate 33**). This is bult of stone rubble and stands almost as high as the preserved height of the west elevation. The constituents of the hearth are not keyed into the walls. The fire hole is clearly visible at the base of the hearth but much of the interior is obscured by vegetation.

Plate 33: *West end of Room 8 with a smith's hearth in the northwest corner.*

Room 9 is a narrow space. Access is provided by an external doorway in the north-facing elevation. The room itself is only slightly wider than this doorway and there are no other features were visible in the external or interior elevations. There is a curvi-linear stone platform in the northeast corner of Room 9 (**Plate 34**).

Room 10 formed the west end of the centre range and is a stone rubble-bult with a single external doorway in the north-facing elevation and a square aperture to the east of the doorway. No other features were identified in the external or interior elevations of Room 10.

South Range

The south range consists of a single, roofed structure (Building 11) which is present on the First Edition Ordnance Survey map and is shown consistently up to the current mapping.

Building 11 is stone rubble-built with crow-stepped gables at the east and west ends. The roof is double pitched with red sandstone slab constituents. There are two skylights in the south pitch and a single skylight in the north.

Plate 34: *View of the interior of Room 9 from the external doorway in the north-facing elevation showing the narrowness of the internal space and the platform in the northeast corner (left)*

Plate 35: *Crow-stepped, west-facing gable of Building 11 with small, narrow window and the oddle hole below.*

No features were identified in the east-facing gale or the south-facing elevation. There is a narrow window close to the north edge of the west-facing gable with an oddle hole below the right corner at the base of the gable (**Plate 35**). The oddle hole has a timber frame and covering. There is a centrally-placed external doorway in the north-facing elevation with a large window to the east.

Plate 36: *Interior of Building 17 showing the extant byre fixtures. The second divider is timber-built with the two flanking dividers being predominately red sandstone slabs held in position by timber supports.*

Internally, the east elevation and the east ends of the north and south elevations have a lime mortar wash across their full height. Three animal stalls remain *in-situ* against the south elevation with three dividers completely intact (**Plate 36**). One of these is entirely timber-built with the other comprising a single large sandstone slab held in position by timber supports affixed to a vertical post descending from the roof trusses. The space between these posts and the wall face is blocked by sub-rectangular sandstone slabs stacked vertically, on-end. There are tethering posts in both the southeast and southwest corners.

The floor of Building 11 comprises flagstone flags. There is a drain with a raised stone kerb in the surface of the floor in the northwest corner (**Plate 37**). This is orientated east west and slopes down to the oddle hole in the west elevation. A timber cover has been placed over the oddle hole.

Additional Buildings and Structures

Structure 12 stands approximately 15m southwest of Building 11. It is first depicted on the Second Edition Ordnance Survey map and is shown on late twentieth-century mapping as a roofless structure. Structure 12 is a ruinous, stone rubble-built rectangular structure (measuring approximately 3m by 1.5m in plan) with an external doorway in the east-facing elevation and a stone-blocked external doorway in the west-facing elevation. This west doorway provides access to a small enclosure. The form of the west-facing elevation possibly indicates that the structure had a single pitched roof sloping downwards to the south. Structure 12 was interpreted as a former sty.

Plate 37: *The northwest corner of Building 11 with the floor surface drain flowing into the oodle hole at the base of the west elevation.*

Plate 38: *General view, looking northeast, of Structure 13 (right) and Structure 14 (left) with the west-facing gable of Building 1 in the background (upper right)*

Structure 13 and 14 form a single building located approximately 2m directly west of the north range (**Plate 38**). Both are depicted as roofed structures on the Ordnance Survey mapping with an unroofed closure butting against the west elevation. The west structure, Structure 14, appears to the earlier of the two. There are quoins at the northwest, southwest and northeast

corners, and in the north-facing elevation, Structure 13 clearly butts against the east side of Structure 14. Structure 14 has a single-pitched roof of sandstone slabs and an external doorway in the east corner of the south-facing elevation. The south-facing elevation has been rendered. Structure 13 is also built of stone rubble and appears to have been a flat-roofed structure. There is a small, narrow window in the south-facing elevation which has been blocked with a single slab of red sandstone. The south-facing elevation does not extend the full length required to butt against Structure 14 in order to form an external doorway in the elevation (see **Plate 38**). The east of the doorway comprises large sandstone quoins with the remains of a timber door frame adhering to the west-facing surfaces. This elevation has also been rendered to match Structure 14.

Plate 39: *General view of Building 17, looking northwest, showing external doorway and modified opening in the south-facing elevation.*

Structure 15 butts against an enclosure wall, approximately 12m northwest of Building1. Structure 15 is a small, roofed building with a single external doorway in the south-facing elevation. It is stone rubble-built with a single pitched flagstone roof, and was interpreted as a former sty.

Building 16 stands north of the centre of the farm enclosure, approximately 20m north of Building 20. Neither Structure 15 nor Building 16 are depicted on the First or Second Edition Ordnance Survey map, both first appear on the 1971 1:2500 (Revised) map (Sheet HY5538 – A). Building 16, a former hen house, is a stone rubble-built structure with a double pitched flagstone roof. The roof has single skylights in both the north and south sides. There is an external doorway in the south-facing elevation, close to the west end, and a centrally-placed window which has been partially blacked by a slab of red sandstone. Both the doorway and the window have timber frames, and the timber door remains intact. There are oddle holes in both the north-facing elevation and the west-facing gable, though the latter has been blocked by sandstone constituents matching the build of the elevation. No additional features were noted in the east-facing gable. There are minimal internal fittings but these appear to be completely intact and comprise timber beam perches.

Plate 40: *General view of Building 17, looking south, showing the mill-wheel and the modified external doorway.*

Plate 41: *North elevation of Building 17, looking northwest, showing the remains of the mechanism driven by the water wheel. The shaft in the centre of the larger, lower wheel runs through the wall and the centre of the water wheel.*

Building 17 stands at the north edge of the larger farm enclosure (**Plate 39**) and is first shown on the Second Edition Ordnance Survey map (see Historical Background above). It is a stone

rubble-built structure with a sandstone slab roof. The roof is double-pitched with two skylights in the south side and a single skylight in the north side.

The south-facing elevation contains an external doorway with a stone lintel and a timber frame. Centrally-placed in the elevation is a tall, rectangular aperture with a stone lintel and sill. The bottom half has been blocked up with flagstone fragments and a timber lintel has been inserted above the blocking stones. This required the removal of some of the wall constituents (see **Plate 39**). There is a small, rectangular aperture close to the base of the east-facing gable which has been covered by a single sandstone fragment. No additional features were identified in the west-facing gable. The north-facing elevation runs adjacent to the mill race and contains the water wheel (**Plate 40**). The under-shot wheel is centrally-place in the elevation and is timber-built except for a cast iron central drive shaft which passes through the stonework of the mill building with he other end running into a bracket of the upper surface of a stone rubble-built plinth which forms the north side of the wheel pit. To the right (west) of the water wheel, there is an external doorway with a stone lintel directly below the roof line. The doorway has been reduced in size by blocking stones along the west side and the upper third of the doorway (see **Plate 40**). A single slab of flagstone has also been added to the east side of the doorway and the sill raised slightly with the addition of a further flagstone slab. The interior of the reduced doorway has a timber frame around the interior edge. This was used to secure a timber cover which now lies on the floor inside the building.

Plate 42: *General view of the water-powered mill (Building 17), looking southwest, showing the canalised head race (left) and the ditch forming the tail race beyond the water wheel.*

The interior elevations of Building 17 have been covered with a lime wash. To the east of the external doorway in the north elevation, part of the mechanism driven by the water wheel remains *in-situ*. This comprises a large, cast iron wheel with a toothed rim connected to the drive shaft from the water wheel (**Plate 41**). Above this is a much smaller cog, the teeth of which mesh with the large wheel below, from which the remains of a further shaft and bracket extend internally. These are held in place by an upright timber which is seated in the floor and is fixed to the rafters above. Both the west and east elevations had been lime washed to height

of the eaves leaving the stonework above uncovered. The aperture identified in the east-facing gable was also seen in the east elevation, situated approximately 0.25m above the interior floor. The interior edges of the top and sides of the aperture had a timber frame attached. The blocking stones within the centrally-placed window in the south elevation were seen to be a single skin thick and did not extend into he interior of the window aperture. The external doorway in this elevation has a stone threshold that is slightly above the interior floor. The floor of Building 17 comprised flagstone slabs throughout. The roof space is open and eleven roof trusses were visible.

The mill race runs along the north side of Building 17 with the water being supplied from a flooded, former quarry pit approximately 170m to the east. For much of its length the mill race is an open-cut ditch with the tail race currently being the most clearly visible. The west end of the head race sits in a slightly raised embankment and has been canalised with flagstone slabs lining the base and sides (**Plate 42**). The flagstones lining the sides are held upright by single, cast iron rods placed at approximately mid-height of the slabs. The mill race is marked as a 'Drain' on the Ordnance Survey mapping and continues as far west as a north-south drain to the east of Papley House. The line of this in currently visible in the ground surface.

5.2 North Ronaldsay, Hooking Corn Mill

Hooking Corn Mill is located at NGR HY 76645 53384 on the west side of Hooking Road, close to the shoreline at Haskie Taking on the southwest edge of Linklet Bay. The mill race runs southwest-northeast immediately to the north of the mill building. This links the Loch of Hooking with Mill Bay. The mill forms part of Hooking farm and is designated as a Category C Listed Building (LB 6192).

The site was visited by the ORCA team and local volunteers in September 2024. A comprehensive photographic record was created along with a basic description of the building components.

Plate 43: *General view of Hooking Mill, looking east northeast (June 2016).*

5.2.1 Building Description

The mill building is a single-storey building, stone rubble-built with crow-stepped gables at the northwest and southeast end, and a restored flagstone roof (**Plate 43**).

Plate 44: *Detail of the northeast-facing elevation showing the centrally-placed round-arch doorway.*

The northeast-facing elevation has a large external doorway, centrally-place, with a dressed round-arch and a timber double-door (**Plate 44**). There is a small, rectangular aperture at about waist-height towards the north end of the elevation and the wall has been heavily repointed at this end. The southwest-facing elevation also has a similar round-arch doorway though this is place slightly towards the south end. The doorway contains a modern door with two large glass panels and is partially blocked by the north wall of a later, lean-to structure, also of stone rubble-build (**Plate 45**).

The southeast gable has a doorway, close to the west edge, with a large, stone lintel and is boarded up. The northwest gable has two, centrally-placed, rectangular apertures. The lower aperture is much larger and both were considered to be features associated with the operation of the water wheel. The water wheel is no longer *in-situ*, though timber fragments from the wheel were identified in a nearby field. The wheel would have been an undershot wheel and was powered by water from Hooking Loch, 80m to the southwest of the mill. The mill race is a well-constructed, flagstone-lined channel, with flagstone capping at the north end of the head race as a crossing point (**Plate 46**). Below this, just above the water level, were the remains of a cast iron mechanism, probably associated with the sluice. The area to the west of the mill is noted as being 'Liable to Floods' on the First Edition 25-inch Ordnance Survey map (Orkney LXXII.12 (North Ronaldsay) 1881), and the remains of a linear earthwork were observed running to the southeast from the head race (**Plate 47**). This would have served the dual purpose of preventing flood waters inundating the mill and the farm buildings, as well as retaining excess water for use in powering the mill.

Plate 45: *Southwest-facing elevation of Hooking Mill showing the later lean-to structure.*

Plate 46: *General view, looking southwest, showing the stone-lined mill race at the south end of the wheel pit.*

The original machinery within the mill building had been removed during the twentieth century. Much of the interior wall and floor surfaces were obscured by materials stored within. It was not possible, therefore, to identify any remaining original fittings within the interior of the mill building.

Plate 47: *View along the linear embankment running southeast from the head race between the buildings and Hooking Loch.*

5.3 North Ronaldsay, Millhouse Corn & Meal Mills

Millhouse Corn and Meal Mills are located at NGR HY 76295 52851 to the southwest of Peckhole farm, on the north side of Nesstoun Road. The site comprises two mill buildings. An earlier windmill, and a later engine-driven mill which superseded the windmill. The windmill (LB 44589) and the engine-driven mill (LB LB46398) are designated as Category B Listed Buildings. Both mills are named 'Peckhole' in the HES and HER data but map evidence appears to show that Peckhole and Millhouse were distinct properties.

The site was visited by the ORCA team and local volunteers in September 2024. A comprehensive photographic record was created along with a basic description of the building components. A total of five buildings were recorded.

5.3.1 Historical Background

The windmill dates for the later eighteenth century (Burgher 1991: 101; Collie 2008: 54), and was a turret post mill with a tapered, stone rubble base (**Plate 48**). A jettied, timber-built revolving sail house with four sails topped this base. This featured a long tail-beam which allowed the sail house to be turned into the wind. The Second Edition 25-inch Ordnance Survey map (Orkney LXXII.12 1901) shows the windmill to the south of a group comprising four buildings. The largest, at the north edge, is marked 'Millhouse', with a smaller, dog-legged building to the southeast of it identified as a 'Smithy'.

Use of the windmill ended circa 1908 with the construction of an engine-powered mill, immediately adjacent to the west. The engine was provided by the Laird, Mr Traill. The mill ground grain for meal for use in the production of porridge, oatcakes, etc. and for animal feed. The mill ceased production in the late 1950s.

Plate 48: *Windmill base at Millhouse, North Ronaldsay, looking west with later mill in background.*

Plate 49: *General view of the engine-powered mill, looking southwest, showing lean-to (right) and the large kiln vent in the roof towards the northeast end of the building.*

5.3.2 Building Description

The mill building is a two-storey building, stone rubble-built with stone ridges and a slate roof (**Plate 49**). The corn drying-kiln is located at the northeast end of the building, as indicated by the presence of a large, timber kiln vent in the roof. A number of individual timbers are missing from the vent, exposing the mechanism for altering the airflow. The threshing mill forms the southwest end of the building and is recorded as comprising three bays with much of the internal timber fixtures and fittings remaining *in-situ* (Peckhole Threshing Mill | Buildings at Risk Register). A single storey lean-to structure with a pitched roof stands against the northwest-facing elevation, housing the mill engine. The constituents of the main mill building and the lean-to are bonded across the two structures only occasionally, at approximately one metre intervals (**Plate 50**). This may be a reflection of the different build characteristics of the two structures. The main mill exterior walls are probably fairly thick due to need to support an upper storey with heavy equipment operating above the ground floor, in contrast to the requirement for the lean-to to simply provide a housing structure for the mill's power unit. It is likely, therefore, that the two structures comprise exterior walls of significantly different thickness and this is reflected in the exterior appearance of their build characteristics.

Plate 50: *Southwest-facing elevation of the later mill showing the lean-to structure housing the engine (left).*

To the east of the later mill were the remains of a sub-rectangular structure which equated with the location of a roofed building depicted on both the First (Orkney LXXII.12 (North Ronaldsay) 1881) and Second Edition 25-inch Ordnance Survey maps. The stone rubble structure is ruinous with only three walls surviving, though a fragment of the flagstone roof remains *in-situ* at the northeast corner (**Plate 51**). This fragment and the surviving north gable show that the building was single-storeyed and had a pitched roof.

Plate 51: *Northeast corner of building to east of the later mill, looking northwest, showing the surviving fragment of a flagstone roof.*

Plate 52: *West-facing elevation of the former smithy showing annex with intact roof and containing bellows for the forge.*

Plate 53: *Interior north gable of former smithy showing scar of forge chimney breast in the stonework.*

Plate 54: *Forge bellows within annex of former smithy, looking northwest.*

Plate 55: *General view of Millhouse, looking northwest, showing east gable of main building and the south-facing elevation of the later annex. To the east (right) is the south end of a contemporary outbuilding.*

The former Smithy survives as a roofless structure, though it appears that only the southern, L-shaped half of the building is still present. Fragments of the pitched, flagstone roof remain in the northwest, northeast and southeast corners. The exterior entrance is centrally placed in the east-facing elevation, flanked by two small windows. The south gable has a larger single window, and there is a single, small window right-of-centre in the west-facing elevation. An annex stands at the north end of the west-facing elevation, fully bonded into the main structure, and with a single pitched, flagstone roof which remains *in-situ* (**Plate 52**). The north gable is intact with the remains of the lumb clearly visible. Numerous flagstone roof tiles and collapsed roof beams fill the interior of the building. The outline of the forge chimney is visible in the north elevation (**Plate 53**) with the bellows in the annex remaining *in-situ* (**Plate 54**).

Millhouse is a ruinous structure with only the east end of the main building and the northeast annex surviving. The main building is stone rubble-built with the east gable surviving to full height. The east-facing gable has a partially blocked window right-of-centre which has been modified to incorporate a later doorway and lintel (**Plate 55**). The interior of the gable appears to have a chimney present but the lower portion is obscured by a build-up of soil and vegetation, and a fireplace/hearth could not be identified. The north-facing elevation contains a blocked, exterior doorway with the northeast annex at the west end. The construction break between the two structures further shows that the annex is a later addition to the main building (**Plate 56**). The annex is largely intact with parts of the flagstone roof missing and some wall collapse at the west end. The exterior doorway is in the south-facing elevation directly adjacent to the east gable of the main building. The lintel of the doorway is incorporated into the north side of the window in the east gable showing extensive modification of the northeast corner of the main building during construction of the annex. These is a blocked, rectangular aperture (approx. 0.3m x 0.3m) in the north elevation. As with the smithy, much of the interior is littered with broken flagstone roof tiles, roof timbers and detritus. The remains of a possible turning lathe stands against the east elevation.

To the east of Millhouse are the remains of a long, rectangular outbuilding depicted on the First and Second Edition 25-inch Ordnance Survey maps. Only the south end remains upstanding, to a height of approximately 1.0m (see **Plate 55**). The structure is stone rubble-built with a width of approximately 2.5m.

Plate 56: *North-facing elevation of Millhouse, looking southeast, showing blocked doorway (centre) and the largely intact northeast annex.*

5.4 Papa Westray, Hookin Mill

Hookin Mill (Canmore ID 3246) is located at NGR HY 50057 51228 on the east coast of Papa Westray, standing between the Loch of St Treadwell and the waters of South Wick bay.

Recording of the site was undertaken by the ORCA team and local volunteers in October 2024. A comprehensive photographic record was created along with a basic description of the building components.

5.4.1 Historical Background

The First Edition 25-inch Ordnance Survey map (Orkney LXXI.13 (Westray). 1881) shows the mill and the wheel pit. To the south, a linear watercourse running northeast-southwest from the Loch of St Treadwell is marked as ‘Mill Lade’. The map also indicates that the sluice controlling the flow of water into the wheel pit was located at the north end of the mill race just before the watercourse is culverted to pass under a trackway. The site layout is identical on the Second Edition map (Orkney LXXI.13. 1901).

5.4.2 Building Description

The mill is a stone rubble-built structure, rectangular in plan, with large corner quoins. The south-facing elevation measures 11.05m in length and is preserved to a height of 1.8m (**Plate 57**). The elevation bows outwards noticeably. The elevation has an external doorway, with a

stone lintel and threshold, centrally-placed in the west-half. There is an aperture measuring 0.26m by 0.28m at the base of the elevation close to the east end.

Plate 57: *South-facing elevation of Hookin Mill, Papa Westray (June 2016).*

Plate 58: *East-facing gable of Hookin Mill (June 2016) with the spokes of the mill-wheel protruding from the pebbled stones filling the wheel pit.*

The east-facing gable measures 5.96m in length and is preserved to a maximum height of 2.5m (**Plate 58**). The wheel pit butts against the base of the elevation. Much of the detail, however, of the pit is obscured by infilling from pebbled beach stones, and the north end of the pit has been replaced by a modern culvert to allow water to continue to overflow from the loch and into the sea. Two pairs of the water wheel's spokes are visible above the infilling pebbled stones. These are of cast iron and indicate that the wheel's axle lies below both the current ground level and the visible base of each of the four elevations.

The north-facing elevation measures 10.88m in length and is preserved to a height of 2.2m (**Plate 59**). The elevation has an external doorway, with a stone lintel and threshold, centrally-placed in the west-half, directly opposite the doorway in the south-facing elevation.

Plate 59: *North-facing elevation of Hookin Mill (June 2016) with the vertical flagstones forming the sea wall in the foreground.*

The west-facing gable measures 5.92m in length and is preserved to a maximum height of 2.18m (**Plate 60**). This elevation has collapsed to the greatest degree with the centre of the elevation being reduced almost to the current ground level.

The interior of the mill is littered with stone rubble and parts of mill machinery, all covered by scrub vegetation.

The east elevation has a ledge running across its full length, approximately 0.6m above the current interior ground level. This feature is probably associated with the grinding machinery that would have operated at this end of the building.

The small aperture identified externally at ground level is clearly visible in the south elevation (**Plate 61**) and is wider (0.58m), with a timber lintel internally. There is a second aperture, possibly a window, at the top of the south elevation slightly left (east) of the centre line. This has a stone sill, is 0.38m wide and has a height of 0.43m though the top of the aperture is clearly truncated. This feature was not visible in the external elevation.

Plate 60: *West-facing gable of Hookin Mill with a grindstone visible in the interior of the building.*

Plate 61: *South elevation of Hookin Mill with one aperture at the base of the wall, a possible window (top right) and two beam slots (centre and centre left).*

Both the north and south elevations contain a pair of features, directly opposing each other, which resemble slots for floor beams. The height of these slots, approximately 1m above the current interior ground level, would put any first floor at a level halfway the height of the doorways at the west end of the building. As the pairs of slots are at the east end of the building it would appear more likely that these were beam slots associated with the grinding machinery, possibly supporting and anchoring the shafts and gears which turned the grindstones.

Photographs dating from the 1980s, however, show the east gable intact and it is clear that the gable ends were quite high. It is possible that there was a first floor at the east end of the building particularly as the presence of the wheel pit means the east elevation will be substantially deeper than the west elevation and the presumed height of the water wheel axle may indicate that the internal ground floor level may be split to accommodate the mill machinery; the east end floor being lower.

Plate 62: *Mill machinery at Hookin Mill. The wheel appears to be in-situ within the demolition rubble and is probably connect to the external mill wheel by a shaft passing through the centre of both.*

Fragments of mill machinery remain visible within the scrub vegetation at the east end of the building. These include a cast iron wheel with square holes through the rim (**Plate 62**). This would probably have been utilised to turn a horizontal wheel with pegs or lugs around its circumference that fit into the square holes. The wheel had a diameter of at least 1.8m and this may be connected directly to the axle of the water wheel. Beside this was a gritstone, 1.36m in diameter. No features or grooves were noted in the exposed surfaces. A second grindstone was partially visible with the stone rubble and was also entirely earth-fast so could not be extensively examined.

5.5 Papa Westray, Holland Farm

Holland Farm (Canmore ID 2868) is located at NGR HY 48835 51537, close to the centre of Papa Westray, standing at the junction of Central Road and School Road (**Plate 63** and **Plate 64**).

The site was visited as part of the project launch in Papa Westray during February 2024. Recording of the site was undertaken by the ORCA team and local volunteers in October 2024.

5.5.1 Historical Background

Holland stands in the centre of the island. Name derived from ON hoy ‘high-land’. Original Holland House stood about 400m from the present house (1814), on “Knowe of Old Holland”.

Plate 63: *General view of Holland Farm looking southwest from close to the War Memorial on Central Road (June 2016).*

Plate 64: *View of Holland Farm looking east from the footpath to the Knap of Howar (June 2016).*

The sixth laird, George (d.1840), was the first to make agricultural improvements following the collapse of kelp prices in the 1820s following the end of the Napoleonic Wars and the removal of duties on foreign imports. His son, Thomas, made many improvements making Holland and Brough model farms but he was declared bankrupt (through high living) in 1886 and the estate taken over by the creditors' Trustees.

Plate 65: *View looking west at the rear of the buildings on the corner of Central Road and School Road. The largest is Holland House (left and centre) with the south-facing elevations of Building 2 (centre right) and Building 1 (right) visible.*

Plate 66: *The west end of the south-facing elevation, Building 1 showing the ground floor window and the first floor wall dormer. The stairs butting the west gable (left) provide access to the first floor of Building 2.*

5.5.2 Building Description

The site of Holland Farm is divided into two parts by Central Road which runs north-south. The photographic survey focused on the original agricultural structures rather than the later twentieth-century buildings, and also Holland House which is no longer occupied as the main residence at the farm. The modern byres and barns were not part of the current survey, nor were the Grieve's House, currently the main occupied residence, and the diary. A total of seventeen structures were surveyed.

The buildings to the east of Central Road (Buildings 1 to 3) comprised the main farmhouse, Holland House, built in 1814 to replace the original Holland House located on the 'Knowe of Old Holland', 400m away, and two ranges of agricultural structures. Buildings 1, 2, 3.2 and 3.3, located immediately north of Holland House, all pre-date the 1814-house and show different build characteristics (**Plate 65**).

The surveyed buildings to the west of the road, Buildings 4 to 17, were all agricultural in usage, and formed a distinct cluster edged by a boundary wall (see **Plate 64**).

Building 1

Building 1 is a stone rubble-built, two-storey structure with a double-pitched stone slate roof. There is a chimney at the west end of the building with a red clay pot above the stack.

Plate 67: *East-facing gable of Building 1 showing first floor external doorway and window with, below, a doorway providing access to the storage space under the stone stairs.*

This building is identified as a house on the 1844 plan. On the 1920 plan it is identified as a diary with a meal loft and store. Presumably this indicates split functions across the ground

and first floors. Building 1 is designated, along with Building 2, a Grade B Listed Building (LB 48095).

The south-facing elevation of Building 1 illustrates its initial use as a domestic structure. There are two ground floor-windows and a single first floor, wall dormer window, all with stone lintels and sills, and internal timber frames. The frames are divided into between six and twelve panes (**Plate 66**). There are two external doorways, one in each half of the elevation and centrally-placed. Both have stone lintels and thresholds and internal timber frames. Only the west doorway has a door remaining *in-situ*.

Plate 68: *Cart body and wheels stored in Building 1.*

Both gables are crow-stepped. A staircase providing access to the first floor of Building 1 and 2 butts against the west gable. An external doorway is centrally-placed in the left- (north-) half of the west gable, its location reflecting the presence of a chimney and fireplace(s). There is also a stone-built staircase butting against the east gable providing access to the first floor of Building 1 *via* an external doorway (**Plate 67**). This is left of the gable's centre line, has a stone lintel and threshold, and an internal timber frame. Right of centre line is a window of similar size to those in the south-facing elevation. The window has a stone lintel and sill, and an internal timber frame. The staircase has a doorway, with a stone lintel, providing access to the space under the stairs.

The north-facing elevation has a centrally-placed external doorway with a stone lintel, internal timber frame and an intact timber door. There are remnants of lime render across much of this elevation though the wall quoins, however, are more clearly visible in this elevation than they are in the south-facing elevation. In the roof above the north-facing elevation, close to the west end, is a rectangular aperture with a timber frame sealed by flashing, probably lead, and blocked by a timber shutter.

The first floor of Building 1 is currently used for the storage of cart bodies and wheels (**Plate 68**).

Building 2

Building 2 is a stone rubble-built, two-storey structure with a double-pitched stone slate roof. There is a chimney at each of the two gable ends of the building, both with a red clay pot above the stack.

This building is identified as a bothy on the 1844 plan, and as a tattie store on the 1920 plan. Building 2 is designated, along with Building 1, a Grade B Listed Building (LB 48095).

The south-facing elevation of Building 2 features a single external doorway with a stone threshold. There is no door frame but the sides are dog-legged in profile, the internal opening

being slightly wider than the external, and this may have accommodated a door frame which butted against the angle of the dog-leg. The wall face is extensively covered by a lime render, obscuring much of the detail and any evidence for re-build or modification.

Both gables are crow-stepped. A staircase providing access to the first floor of Building 2 butts against the east gable. An external doorway is centrally-placed in the right- (north-) half of the east gable, located to avoid the interior features associated with the chimney. The stone rubble-built staircase clearly butts against the gables of Building 1and 2, perhaps indicative of it being a later addition. It is unclear why the external staircase would not be an integral part of the stonework of at least one of the buildings, particularly as neither first-floor doorway appears to be a later modification. It is possible that Building 1 and Building 2 were not erected contemporaneously.

Plate 69: *View of Holland House looking northeast from Central Road.*

The west gable has a single, rectangular aperture close to the left- (north-) edge, at first-floor level. This has a stone lintel and threshold and is blocked by a timber plank shutter. The feature was interpreted as a first-floor access to allow the transference of items and produce. The gable is partially rendered in lime mortar and it is likely that the whole elevation was once rendered.

The north-facing elevation has an external doorway centrally-placed in the left- (east-) half. This has a stone threshold, with much of the surrounding stone work obscured by render. This is of a slightly different colour with a more cement-like appearance than the patches of render present on this, and the other elevations. The slightly more modern quality of this render may indicate that the external doorway is a later modification and not part of the original building's form. There is also a small window, centrally-placed in the right- (west-) half which is blocked by well-dressed stone constituents. These have been covered in a thin skim of render similar to that seen around the doorway. The render around the window, however, is of the lime mortar type.

Building 3, Holland House

Building 3 is a group formed of three structures and boundary walls standing at the southeast corner of Central Road and School Road (**Plate 69**). On both the 1844 and 1920 plans it is simply annotated as 'Holland House'. It is designated as a Grade B listed Building (LB 18600).

Building 3.1 is the main domestic block with two stories and an attic. It is L-shaped in plan, comprising a south wing and an east wing, with a service wing butting the west end of the south wing and a lean-to butting against the north end of the east wing. The building has a stone slate roof and the exterior walls are harled throughout.

Plate 70: *The east-facing gable of the south wing, Holland House showing the ground and first floor windows, and the smaller attic window. These are all positioned towards the left of the space that, internally, would contain the fireplaces and flues associated with the chimney at the top of the gable end.*

The main entrance is centrally-placed in the south-facing elevation and has a flat-roofed porch. This is a later addition with windows in the south- and west-facing elevations with the timber panelled door in the east elevation. The main entrance is flanked by windows with three further windows at the first floor level. All five windows are twelve-pane timber sash and case type. There are four small skylights visible in the roof. These consist of a single pane of glass replacing one or two stone slates. To the west is the single-storey service wing. This has two windows of an identical style to those of the main block. In the roof, there are three, even-spaced skylights identical in form to those of the south wing.

The east-facing elevation comprises the east gable of the south wing and the east-facing elevation of the east wing, with the gable projecting slightly. The east-facing gable is crow-stepped with a central chimney crowned with three pots. There are three windows to the left (south) of the chimney at ground floor, first floor and attic level (**Plate 70**). Again, these are all twelve-pane timber sash and case type, with the attic level window being significantly smaller in size.

Plate 71: *General view of the east-facing elevation of Holland House (Building 3.1) showing a number of architectural features common throughout the building. The lean-to can be seen on the right, butting against the north elevation of the house and shows the contrasting finishes of the domestic and agricultural structures.*

Plate 72: *The courtyard at Holland House looking southwest through the partially blocked courtyard entrance. The north-facing elevations of the south wing and the service wing with a lean-to structure obscuring the ground floor level are in the right and centre background. On the right is the earlier structure, Building 3.2, with the roofless remains of another lean-to structure butting against its east-facing elevation.*

The east-facing elevation of the east wing has a total of five sash and case type windows. Three are at ground floor level, evenly spaced, and two are at first floor level above the two end windows. There is no evidence of scarring in the harling, or that a partial reapplication has taken place, which would indicate that a middle, first floor window had been present. There are two skylights visible from ground level in the roof, both towards the south end. One is identical to those seen in the south-facing elevation, but the second is larger with two panes set within a frame. There is also a chimney stack visible in the roof line at the junction between the south edge of the east wing and the north edge of the south wing.

At the north end is a single storey lean-to structure. Its east-facing elevation contains a single sash and case type window at ground floor level. This is slightly smaller than those of the east wing. The remainder of the lean-to projects beyond the east elevation of the east wing and extends across the north gable of the east wing (**Plate 71**). The portion of the lean-to standing north of the boundary wall is not harled, though it is rendered with a lime mortar. It is entered through a doorway in its north-facing elevation, close to the east edge. To the left (east) of the doorway, at ground level, is an oddle hole. The north gable of the east wing is crow-stepped with a centrally-placed chimney. There is an attic window towards the left edge which, unlike the windows in the south- and east-facing elevations, does not have the pinkish-grey stone surround.

Plate 73: *General view of Building 3.2 looking northeast from Central Road. The construction scar below the left ground-floor window is clearly visible, as is the construction break between this structure and the lean-to (Building 3.3) at the north end. The lean-to structure on the right with the modern door butts against the south wing and service wing of Holland House (Building 3.1)*

The west-facing elevation comprises the west gable of the south wing and the west gable of the service wing (see **Plate 69**). The south wing gable is crow-stepped with a centrally-placed chimney stack crowned with three pots. At attic level the line of the chimney is flanked by two sash and case windows similar in size to the attic window seen in the east gable. The roof line of the service wing's west gable lies below these two attic windows. This gable is also crow-stepped with a centrally-placed chimney. The chimney is significantly taller than any of the other examples at Holland House Its form clearly indicates that it was originally similar in height

to the other examples but has been subsequently heightened. Increasing the height of a chimney is usually undertaken to improve the draw of air through the system. In this instance, however, it is possible that the chimney has been heightened to avoid the smoke being expelled at the same height as the attic windows in the south wing gable. The service wing gable itself is blank.

Plate 74: *Detail of the west-facing elevation, Building 3.2 showing the former external doorway partially blocked to form a ground-floor window.*

A later lean-to is attached to the rear of the service wing, on the left side. The main entrance is in the west-facing elevation of the lean-to, set to the left (north) of the centre line, and has a stone lintel and threshold. There is a narrow, three-pane window to the right with a stone lintel. There is a thin skim of render across the elevation. The lean-to extends across much of the north-facing elevation of the south wing. This was only observed through the partially blocked entranceway in the north courtyard wall and was seen to be a single storey, stone rubble-built structure with a corrugated asbestos roof (**Plate 72**). There is a window in the north-facing elevation of the south wing, set back from the lean-to. The window is narrow, extending across both ground and first floor levels.

Building 3.2 stands at the northwest corner of the courtyard and is a stone rubble-built structure with a double-pitched stone slate roof (**Plate 73**). The current structure is rectangular in plan but the First and Second Edition Ordnance Survey maps depicted a slightly more complex plan comprising a longer north edge to create a more L-shaped style with a shorter extension to the plan in the angle of the 'L'.

The south gable is crow-stepped with a centrally-placed chimney. There is a small, first floor window towards the right (east) edge of the gable and below it butts the lean-to structure which, consequently, fills the gap between Building 3.2 and the service wing of Building 3.1. Much of the south gable is covered in a render of lime mortar.

Plate 75: *The north-facing elevation of Building 3.2 viewed from School Road showing how the wall extends beyond the gable end reflecting the original plan of the structure. Much of the elevation is obscured by a lean-to structure (Building 3.3).*

Centrally-placed in the west-facing elevation is a window with an internal timber frame, divided into eight panes, and is a fairly modern design. The window was formerly an external doorway as shown by the wall scars directly below the stone sill (**Plate 74**). Mid-way between the doorway and the left (north) edge of the elevation, is a small, ground floor window with an internal timber frame divided into six panes. This window originally extended further downwards as shown by the wall scars below (see **Plate 73**). Slightly below the level of the eaves are two smaller windows blocked by timber panels.

The north gable is also crow-stepped with a centrally-placed chimney and much of the visible wall face covered by a lime mortar render. The gable below the level of the roof pitch is obscured by a lean-to structure, Building 3.3 (see below). The north wall of Building 3.2 extends beyond the east edge of the gable reflecting the original form of the structure (**Plate 75** and **Plate 76**). Much of this is also obscured by Building 3.3 and the exposed stonework is covered by render. The doorway leading into the courtyard is set back from, and butts against the east edge of, the north-facing elevation of Building 3.2.

The east-facing elevation of Building 3.2 was only observed through the partially blocked entranceway in the north courtyard wall. The extension in the angle of the building's original L-shape was seen to be a separate lean-to structure. This is stone rubble-built and is now roofless (see **Plate 72**). There are two small skylights in the roof above the east-facing elevation. Again, these are in the form of a single pane of glass replacing one or two stone slates.

Building 3.3 is a lean-to structure butting against the north-facing elevation of Building 3.2. The First and Second Edition Ordnance Survey maps show the structure as only partially roofed with the east-third being roofless. The current structure has a flagstone roof throughout (see **Plate 75**) with stone rubble-built walls.

The west-facing elevation shows a clear construction break with Building 3.2 (see **Plate 73**). There is an external doorway in this elevation with a stone lintel and threshold. It has an internal timber frame with a timber plank door. There are some patches of render which is particularly heavy around the butting join with Building 3.2 and the join with the roof stones.

The north-facing elevation has no architectural features but there is one clear, and one probable, wall scar (see **Plate 75**). These are positioned quite close together and correspond roughly to the position of the boundary between the roofed and unroofed sections shown on the historic maps. The clear break shows a distinct change in the build quality of the wall with the constituents being less uniform, slightly smaller and a heavier use of mortar render. The probable break appears as a slight widening of the gap between constituents which is frequent, but not continuous, along a vertical plane. Neither of the scars is continued in the roof. These probably reflect partial rebuilding of the structure, possibly as part of modifications to extend the roof.

Plate 76: *Detail of the east end of the north-facing elevation (Building 3.3) and the short north wall of the courtyard with the courtyard entrance.*

The east-facing elevation contains an external doorway with a stone lintel and threshold, and an internal timber frame with a plank door (see **Plate 76**). To the left (south) is a window with a stone lintel and an external plank shutter which opens horizontally to the left. The right side of the doorway is built of brick-sized cement blocks and the whole of the elevation between the doorway, the window and the left edge of the elevation is rendered in cement mortar up to the line of the doorway top, with the stonework above this line and the butt end of the north elevation stands slightly proud of the cement render. This may indicate that the east elevation of the building originally had a much wider external doorway that included the area of both the current doorway and the window.

Building 4

Building 4 is a stone rubble-built, single-storey structure divided into two rooms: Structure 4.1, south, and Structure 4.2, north. Building 4 has a double-pitched stone slate roof with that of Structure 4.1 set slightly taller. The dividing wall between 4.1 and 4.2 breaks the roof line of

the east pitch and is clearly visible in exterior views of the building (**Plate 77**). There are chimney stacks in the gable ends of Building 4 and one in the centre above the dividing wall.

Plate 77: *General view of Building 4 looking northwest from Central Road.*

This building is identified as being houses on the 1844 plan. On the 1920 plan it is identified as a smithy, joiner's workshop and iron house. On the First Edition 25-inch Ordnance Survey maps (Orkney LXXI.13 (Westray), 1881), Building 4 is shown as a range comprising three structures. The third structure, Structure 4.3, is interpreted as being the ruinous lean-to structure present at the north end of the range. Building 4 also forms part of the general listing (LB 18600, Smithy & Joiners' Workshop) for the site area to the west of Central Road, and is designated as Category B.

The west-facing elevation of **Building 4.1** contains a single window with a stone lintel and sill and an internal timber frame divided into four panes. There is a clear construction break between Building 4.2 and Building 4.2 which is seen as a vertical seam that is bridged by two stone constituents (**Plate 78**). The roof overseamers of Building 4.2 partially overlap the north elevation of Building 4.1, with the seam between the two walls being in line with the north edge of the centre dividing wall and chimney. This indicates that the dividing wall and chimney are part of the build of Building 4.1. There are two skylights in the west roof pitch of Building 4.1, both with metal frames.

The south-facing gable end of Building 4.1 is crudely crow-stepped and has a large window on the right (east) side with a stone lintel and sill. This has been blocked by a single stone slab placed on end (see **Plate 77**).

The east-facing elevation of Building 4.1 contains a single, slightly narrower window with a stone lintel and sill and an internal timber frame divided into four panes, on the right (north); a centrally-placed external doorway with internal timber frame and plank door; and a larger external doorway on the left. The larger doorway has a sliding, plank door within a metal frame fitted to the exterior elevation. The construction break with Building 4.2 is less visible in this elevation, though it is still evident, with the six uppermost courses being fully interpolated. Two

stone constituents further down also bridge the seam. There are two skylights in the east roof pitch of Building 4.1, both smaller than those in the west pitch, and comprising a single, inserted pane of glass.

The west-facing elevation of **Building 4.2** contains a single window with a stone lintel and sill and an internal timber frame divided into four panes, on the left. The south end of the roof partially overlaps the north elevation of Building 4.1, and this is marked a line of mortar-bonded sandstone overseamers (see **Plate 78**). There are two skylights in the west roof pitch of Building 4.2, both comprising a single, pane of glass inserted into the roof fabric and without frames.

The north-facing gable end of Building 4.2 is partially obscured by the remains of the lean-to structure. The north elevation is plain with the exception of a line of protruding, thin stone fragments marking the roof line of the lean-to. There are heavy deposits of mortar along the gable but it does not appear to have been crow-stepped.

Plate 78: *The west-facing elevation of Building 4 showing the construction break between Building 4.1 (right) and Building 4.2 (left). The view also shows how the wall of Building 4.1 aligns with the chimney and the overlapping roof of Building 4.2.*

The east-facing elevation of Building 4.2 contains a single, window with a stone lintel and sill and an internal timber frame divided into four panes, on the right (north); and a large external doorway on the left (see **Plate 77**). The doorway has a sliding, timber door within a metal runner fitted to the exterior elevation, below the eaves. Both this doorway, and the sliding doorway in Building 4.1, were considered to be later modifications. There is a single skylight in the east roof pitch of Building 4.2 comprising two panes of glass within a metal frame.

Building 4.3 is a ruinous lean-to structure at the north end of the range. The structure is now roofless but historic map evidence and the remains of roof flagstones along the top of the north elevation show that the structure was originally roofed (**Plate 79**). The west-facing elevation shows that the structure butts against the north end of Building 4.2 with no interlocking of the stone constituents across the construction break. Both the west- and north-facing elevations are plain. The east-facing elevation contains the access doorway to the structure. The south

edge of the doorway is formed by the northeast corner of Building 4.2. The stone lintel of the doorway has been inserted into the stonework of Building 4.2. Only one fragment of Building 4.3's stonework survives *in-situ* above the lintel and this appears to confirm that the lean-to structure as a whole butts against Building 4.2's north gable and is probably, therefore, a later addition.

Plate 79: *The northwest corner of Building 4.3 looking south, showing the remnants of the flagged roof and the north elevation of Building 4.2 with the line of mortar indicating the former roof line of Building 4.3.*

Building 5

Building 5 is a stone rubble-built, structure with a double-pitched flagstone roof (**Plate 80**). The coursing of the stonework is noticeably more irregular than most of the other buildings at Holland Farm. The presence of floor joist holes along the interior elevations indicate that the attic space originally formed a separate storey. This building is not labelled on the 1844 plan but it is identified as a staigy (stallion) house on the 1920 plan. The building is shown on the First Edition 25-inch Ordnance Survey map but there is no additional detail. Building 5 also forms part of the general listing (LB 18600) for the site area to the west of Central Road, and is designated as Category B.

The only doorway is located in the west-facing elevation. This is centrally-placed, with a timber lintel and an internal timber frame. On the interior side of the frame, the doorway is similar to cant bay in plan and the threshold is formed of earth-fast cobbles (**Plate 81**). There is a small window to the left (north), just below the level of the eaves, with a stone lintel though no discrete sill. It has an internal timber frame, probably of four panes but the lower half of the internal components is missing. The elevation has no identifiable quoins.

The south-facing gable end has a window at the level of the eaves on the left, though it is possible that this may be an exterior doorway for the movement of materials/produce to and from the first floor. There is a blocked doorway at ground level on the right with a stone lintel.

Plate 80: *General view of Building 5, looking northeast, with Building 6 on the left and Building 8 on the right.*

Plate 81: *Plan view of the cobbled surface at the west entrance of Building 5.*

This is a fairly low doorway and may have originally be for the movement of livestock and then blocked with stone rubble when the building became a staigy house.

The north-facing gable end has a centrally-placed, outstanding chimney lumb which is truncated below the level of the gable top (**Plate 82**). Cement mortar deposits to the left (east) of the chimney and on the chimney stonework indicate that a flat-roofed structure had

previously butted against the north gable. An upright timber in the angle of the join between the chimney and the gable wall is probably a remnant of this structure. The horizontal line of mortar on the gable end also shows that the structure had a corrugated roof.

Plate 82: *North-facing elevation of Building 5 showing the outstanding chimney lumb and the mortar deposits indicating the former presence of a lean-to with a roof of corrugated material.*

The east-facing elevation has two blocked apertures on the right, one directly above the other. Both have stone sills and the lower has a thick stone lintel. The upper opening has a thinner lintel due to its positioning directly below the eaves. Much of the elevation has been repointed with lime mortar with a small area of cement mortar on the left.

Building 6

Building 6 is a building range comprising three structures to the west of Building 5. All three are stone rubble-built with double-pitched roofs with a loft or attic forming the first floor level. Building 7 butts against the north elevation of Building 6 (**Plate 83**).

The range is labelled as 'New Barns' on the 1844 plan, with the east end identified as a stable, and having grain lofts throughout the range. Both the First Edition and Second Edition 25-inch Ordnance Survey map show the range divided into two parts, the centre and east end structures being shown as a single section. The 1920 plan labels the range, from left to right as Threshing Mill, Hay and Stable. 'Grain Lofts' seems now to be only referring to the centre and east sections.

Building 6 also forms part of the general listing (LB 18600, Threshing Barn Range) for the site area to the west of Central Road, and is designated as Category B.

Building 6.1 forms the east end of Building 6 (**Plate 84**) and is described as a stable with a grain loft above. The south-facing elevation has four ground floor windows each with a stone lintel. No discrete sills were identified though a three of the windows have been heavily repointed with cement mortar, obscuring the constituents. The east window has an internal timber frame divided into four panes. The remaining windows also have internal timber frames though have their lower halves by a timber board. The upper halves are divided into two or six

panes. The four windows each flank external doorways. Both doorways have external sliding doors with the east door comprising timber planking and the west door being a single piece of timber. At first floor level are four attic openings each with stone lintels and sills, and an internal timber frame with plank shutters.

Plate 83: *North-facing elevation of Building 6, with the stable (Building 6.1) nearest. The circular horse mill structure (Building 7) can be seen butting against the threshing mill (Building 6.3).*

Plate 84: *The south-facing elevation of Building 6.1, looking east, with the doorway providing access to the first floor grain loft visible in the top right corner.*

The east-facing gable is crow-stepped and has a centrally-placed external doorway at first floor level. This has a stone lintel and threshold though much of the original threshold is obscured by a later cement threshold with an inclined upper surface. The doorway has an internal timber with a plank door. The ground floor level of the gable elevation is obscured by a large stone rubble-built structure, rectangular in plan, providing access to the external doorway. The upper surface of this structure is formed by a cover of cement concrete. A timber-built flight of steps at the north end enables access to the top of the structure (**Plate 85** and see **Plate 83**).

Plate 85: *A detail view of the timber staircase which provides access to the platform at the east end of Building 6.*

The north-facing elevation has four attic openings, evenly spaced, with stone lintels and sills (see **Plate 83**). Each has an internal timber frame with louvre shutters. Each of the openings has been sealed with planks on the interior. Much of the elevation has a thin render of lime mortar.

The roof comprises stone slates, mortar bonded. The roof appears to be continuous across Building 6. 1 and Building 6.2 with the division between the two structures marked by cement overseamers.

Building 6.2 forms the centre section of the range (**Plate 86**). The south-facing elevation has a large external doorway to the right of centre. This has a stone segmental arch and a flagged threshold continuous with the exterior surface. The sliding door comprises two large timber boards and opens along the interior wall face. The doorway is flanked by windows. The window on the right (east) is identical to those of Building 6.1 with the lower half boarded. The left (west) window is of the same overall size but the internal frame is divided into four panes, all glazed with no boarding. A further, identical window is present to the left. Both have stone lintels which appear to be larger than those of Building 6.1. At the far left is another external doorway with a sliding door identical to the east sliding door of Building 6.1. There are five

attic windows all centred to the ground floor openings. Each has a stone lintel and sill with an internal timber frame divided into four panes.

Plate 86: *General view of the south facing elevation of Building 6.2 (nearest the camera) and Building 6.3.*

Plate 87: *Detail of the north facing elevation, Building 6.2, showing the small window and the external doorway (left) with the grain loft window above.*

***Plate 88**: General view of the south-facing elevation of the threshing mill (Building 6.3) showing the first floor external doorways. The sliding door on the right provides access to Building 6.2.*

***Plate 89:** West gable of the threshing mill (Building 6.3) showing the blocked doorways (left) and window (right) with an opening below.*

The north-facing elevation has four attic windows identical in form to those in the south-facing elevation and are, therefore, larger than the openings in this elevation of Building 6.1. At ground level, left of the centre line, is an external doorway with a large stone lintel. The doorway has been blocked with stone rubble constituents. To the right (west) is a similar external doorway with an internal timber frame and plank blocking (**Plate 87**). On the far right is a small window with a large stone lintel and a thin stone sill. This has an internal timber frame and planks with a central aperture that has subsequently been blocked with a timber board.

The roof comprises stone slates, mortar bonded. The divisions with the two flanking structures are marked by cement overseamers.

Building 6.3 forms the west section of the range (**Plate 88**). There are two ground floor windows, one centrally placed, the other to the right (east), with stone lintels and sills, and internal timber frames divided into four panes. There are two external doorways at first floor level with timber lintels and stone thresholds. Both have internal timber frames running along the top and both sides, and planked doors. Much of this elevation, particularly at first floor level and at the west end, has a lime mortar render.

Plate 90: *Detail of the west gable of the threshing mill showing the opening cut into the wall below the window.*

The west-facing gable is crow-stepped and has two external doorways on the left at ground and attic level (**Plate 89**). Both have stone lintels and have been blocked using stone rubble constituents. To the right is a ground floor window, similar in size to those of Building 6.2, with a stone lintel and sill. This has been blocked by a corrugated metal sheet. Below this is a smaller opening, centred on the window, with a stone lintel. Much of the surrounding stonework is covered by a cement mortar, particularly the sides and interior of the aperture. The opening resembles an oddle hole, possibly related to the original use of the structure but the form of the opening in the interior elevation, with its appearance of being cut into the

window bay and the positioning of machinery in the ground floor room would seem to indicate that this opening is a later modification as part of the use of the structure as a powered threshing mill (**Plate 90**).

Much of the north-facing elevation is obscured by the horse mill structure, Building 7 (see **Plate 83**). There is a ground floor window to the right (west), of similar size to those in the south- and west-facing elevations. This has a stone lintel and sill with an internal timber frame divided into twelve panes. The window has been blocked by a corrugated metal sheet. To the left is a smaller ground floor window with stone lintel and sill. It has an internal timber frame with the lower third having a louvre shutter and the upper two-thirds divided into four panes. Much of the stonework around this window is covered by a lime mortar render. The stone work above the join with Building 17 is harled.

The roof comprises large corrugated sheets with a metal ridge line.

Plate 91: *General view, looking northeast, showing the horse mill, Building 7 (left) alongside the threshing mill.*

Building 7, Horse Mill

Building 7 is a single storey structure, circular in plan, which butts against the north elevation of the threshing mill, Building 6.3 (**Plate 91**). The structure is stone rubble-built, with lime mortar bonding, and a stone slate, conical roof. It has six external doorways with timber lintels. Four of these have been completely blocked using stone rubble constituents without mortar bonding. The doorway on the east side, closest to the threshing mill, has been partially blocked using pieces of timber and a crude timber frame with netting. The west-facing doorway provides the current access to the building and has been modified to accommodate a double sliding door on the exterior including the addition of a concrete lintel.

Building 7 also forms part of the general listing (LB 18600, Threshing Barn Range) for the site area to the west of Central Road, and is designated as Category B.

Building 8

Building 8 is a long, single storey structure running northwest-southeast, perpendicular to the southeast corner of Building 6 (**Plate 92**). It is stone rubble-built with a double-pitched, slate roof.

Plate 92: *East-facing elevation of the cattle byre, Building 8, looking southeast.*

Plate 93: *Detail of the east-facing elevation, Building 8, with examples of external doorways, windows and skylights.*

The building is not present on the First Edition 25-inch Ordnance Survey map (Orkney LXXI.13 (Westray), 1881) but is shown on the Second Edition map (Orkney LXXI.13, 1901). The 1920 plan identifies the structure as 'Calfie Byre' at the north end, and 'Kye's Byre' (cattle byre) in the centre.

Building 8 also forms part of the general listing (LB 18600, Cow Byre) for the site area to the west of Central Road, and is designated as Category B.

The west-facing elevation has four external doorways, each with a flanking window to the left. There is also an additional window at the right (south) end of the elevation. All the doors and windows have stone lintels which form part of the uppermost course in the elevation (**Plate 93**). The two doors towards the left (north) end have internal timber frames with timber doors. The remaining two doors have been blocked with stone rubble constituents, mortar bonded. All the windows have internal timber frames divided horizontally into two halves. The upper-half is divided into six, glazed panes, and the lower-half has timber ventilation slats. Flagstones cover the ground surface at the base of the elevation and these can be seen to continue across the threshold of the two unblocked doorways.

The north-facing gable end is plain. The south-facing gable has a large external doorway with a pair of external, timber, sliding doors. The area above the doorway is covered by roof slates. All these elements in the south gable appear to be later additions and modifications.

The east-facing elevation is plain with an attached shed (Building 9) forming much of the right (north) end of the elevation.

There are seven skylights in the west pitch of the roof, all evenly spaced, and three in the east pitch, all to the north of Building 9. All the skylights are of the same size and design (see **Plate 93**), each having a metal frame divided vertically into two glazed panes. One of the skylights in the west pitch has an additional external, timber shutter.

Plate 94: *South facing elevation of the turnip shed, Building 9, with the segmented arch above the doorway visible behind the sliding doors.*

Building 9

Building 9 is a single storey structure the west wall of which forms part of the east wall of Building 8. It is stone rubble-built with a double-pitched, slate roof. A low, rectangular structure butts against the north-facing elevation.

The building is not present on the First Edition 25-inch Ordnance Survey map (Orkney LXXI.13 (Westray), 1881) but is shown on the Second Edition map (Orkney LXXI.13, 1901). The 1920 plan identifies the building as a turnip shed.

Building 9 also forms part of the general listing (LB 18600, Cow Byre) for the site area to the west of Central Road, and is designated as Category B.

The east-facing elevation is plain but it was noted that the wall had been heavily repointed. The south-facing gable has a large external doorway with a segmented arch (**Plate 94**). The doorway has a pair of timber sliding doors fitted to the exterior. These were considered to be a later addition. The north-facing gable is plain with a rectangular structure butting against it (**Plate 95**). The walls of this annex stand to the same height as the east wall of Building 9 and have a heavy, cement mortar render.

Plate 95: *The northeast corner of the turnip shed (Building 9) showing the annex structure butting against the north elevation.*

The slate roof has cement overseamers at each gable end, and there are two skylights in the east pitch. These are rectangular and comprise a pane of glass replacing a small number of slate constituents. It was not possible to examine the west pitch due to the presence of Building 8.

Building 10, West Barn

Building 10 stands at the northwest corner of the Holland Farm buildings. It is a single storey structure, with a loft, and stone rubble-built. Rectangular in plan with a circular corn drying-kiln attached to the north end (**Plate 96**). The double pitched roof comprises large, corrugated sheets, probably of asbestos.

Plate 96: *General view of the corn drying-kiln at the north end of the old threshing barn (Building 10), and linked by a short, roofed passage.*

Plate 97: *South gable of the old threshing barn (Building 10) with doorway at loft height and window below. The blocking between Building 10 and Building 11.1 can be seen on the extreme left of the photograph.*

The building is identified as 'Old Threshing Barn' on the 1844 plan, with the corn drying-kiln also noted. There is a rectangular annex attached to the west side of the main building. The West Barn was used for the hand threshing of corn prior to the construction of the horse mill and the installation of the threshing machine in the New Barns (Building 7 and Building 6.3). The building is present on both the First Edition 25-inch Ordnance Survey map (Orkney LXX.16 (Westray), 1881) and the Second Edition map (Orkney LXX.16, 1901). On the earlier map the west annex is no longer present and two rectangular buildings (Building 11 and Building 12) run perpendicular to the west side of the barn, within an enclosure. On the later map these two structures have been extended slightly eastwards and these are now continuous with the west side of the barn. The West Barn is not labelled on the 1920 plan but the barn, kiln and buildings to the west are clearly visible. Building 10 currently has a modern barn butting perpendicular to its east side.

Plate 98: *Detail of the west-facing elevation of the old threshing barn showing two blocked doorways. The wall butting against the elevation next to the left doorway is the south elevation of Building 12.1.*

Building 10 also forms part of the general listing (LB 18600, Kiln and West Barn) for the site area to the west of Central Road, and is designated as Category B.

The east-facing elevation contains a large, external doorway with a pair of external, timber, sliding doors. These are immediately left (south) of the adjacent modern barn and considered to be a later modification. Only the left side of the doorway was clearly visible and this was heavily covered in cement mortar.

The south-facing gable end is crow-stepped with an external doorway at loft height (**Plate 97**). This has a stone lintel and threshold, with the threshold having an additional thin flagstone which extends slightly outwards from the elevation. The doorway is blocked by a sheet of corrugated metal. Centred on this, and directly below, is a small window which opens onto the ground floor. The stone lintel is also the threshold of the window above. The small window also has a stone sill and is blocked by a sheet of corrugated metal.

There are three external doorways in the east-facing elevation. One doorway is located in the centre of the elevation, has a stone lintel and has been blocked using stone rubble

constituents, bonded by lime mortar. Another doorway is located on the left (north), just within the line of the interior of Building 12. This doorway is slightly taller than the centre but is otherwise identical and is also blocked (**Plate 98**). The third doorway is located to the right (south) just to the left of Building 11's north wall. This doorway is still open but it was not possible to examine it as it had been covered by a decrepit timber door which had been pinned in place. A number of walls associated with Building 11 and 12 extend from this elevation (see below).

Plate 99: *Detail of the corn drying-kiln (Building 10) showing the short linking passage with flagged roof and the outstanding stones forming a staircase leading to the top of the kiln.*

The north-facing gable end is crow-stepped. Much of the lower left quarter of the elevation is occupied by the short passage which links the barn with the kiln (see **Plate 96**). The passage has a flat roof of stone flags. There are also some remaining flagstones on the roof of the kiln. The kiln is circular in plan with a slight beehive profile. A series of stone constituents outstanding from the south side appear to form a rough line of step to the top of the kiln (**Plate 99**).

Building 11 and Building 12

Buildings 11 and 12 and a pair of parallel structures running perpendicular to Building 10. Both structures are stone rubble-built, roofless and ruinous (**Plate 100**).

The buildings are shown on the First Edition 25-inch Ordnance Survey map (Orkney LXX.16 (Westray), 1881) as roofed structures detached from the West Barn though Building 12 is linked to the barn by the north enclosure wall. The two buildings are linked to each other at their west ends by the west wall of the enclosure, and the southeast corner of Building 11 is linked to an early byre (Structure 17) to the east. The Second Edition map (Orkney LXX.16, 1901) shows that both buildings have had a roofed section added to their east ends, connecting the buildings to the west side of the barn. The two structures are identified as 'Sheepie Houses' on the 1920 plan and it is likely they functioned as sheep shed throughout their life. The buildings are roofless by the 1970s (Ordnance Survey 1:2500 series HY4851-HY4951 – AA, 1973).

Plate 100: *General view of the sheep sheds, Buildings 11 and 12, looking northwest from the southwest corner of the old threshing barn.*

Plate 101: *The east end of the south-facing elevation, Building 11, showing the upstanding east gable and the construction break with the annex (Building 11.1).*

Butting against the east end of Building 11 are walls associated with its later extension, **Building 11.1**, as shown on the Second Edition Ordnance Survey map. There is a clear construction break in both the north- and south-facing elevations (**Plate 101**), and the build characteristics of the north elevation are noticeably different. The OS map depicts both walls

of Building 11.1 extending up to the west elevation of Building 10, with a roof covering the extension. There was no evidence identified during the current survey, however, to confirm this. The south elevation of Building 11.1 terminates at the junction with the enclosure wall running to the south, and the remaining gap between the wall terminus and the southwest corner of Building 10 is blocked by a later dry-stone wall. The north wall of Building 11.1 also terminates along a similar line and there are no wall scars or traces of mortar to indicate that either wall was bonded to Building 10. Similarly, there is no evidence for modifications to the gable of Building 11, or to the east wall/roof of Building 10, to accommodate an additional roof.

Plate 102: *The east-facing gable of Building 12 with the south wall of Building 12.1 (left) butting against it. Behind the gable, to the left, is the enclosure wall between Building 12 and Building 11 and, on the extreme left, is the northwest corner of Building11.*

Building 12 is the northern building of the pair and its size and form are identical to that of Building 11. The south elevation is poorly preserved. There is a c.2.5m long section surviving to full height at the southeast corner, and a c.3m long section, six courses high, at the southwest corner. The section at the west end preserves the west, lower side of an external doorway, the position of which matches the west doorway in the north elevation of Building 11. The east-facing gable end is partially preserved (**Plate 102**) and it appears to be identical to that of Building 11. The west gable and the north elevation exist as linear spreads of stone rubble with occasional earth-fast constituents remaining *in-situ*.

The walls forming the extension, **Building 12.1**, are preserved to a greater extent (**Plate 103**). Almost the full length of the south elevation is preserved with only some constituents missing around the east side of an external doorway. The wall butts against the west elevation of Building 10 with mortar or other bonding material visible at the join. The south elevation appears to have originally stood to the same height as that of Building 12 itself. The north elevation is preserved to approximately half of its original height with most of the north-facing elevation obscured by wall collapse. Again, the elevation butts against the west elevation of Building 10 with no evidence for mortar bonding. There is a window in the north elevation directly opposite the external doorway in the south elevation. There was no visible evidence identified for a roof on Building 12.1.

Plate 103: *The annex to Building 12, looking north. The doorway is visible to the right of the upright scale and the left side window in the wall beyond is also discernible. The walls of the annex can clearly be seen to butt against both Building 10 (right) and Building 12.*

Plate 104: *The east-facing (interior) elevation of the enclosure wall between Building 11 and Building 12 showing the short return at the south end (left).*

An enclosure wall linking Building 11 and Building 12 is upstanding at the west end of these structures (**Plate 104**). This is stone rubble-built, preserved to a height of approximately 2.5m which is higher than the north and south elevations of Buildings 11 and 12, and similar to the

full height of the gables. The north end of the enclosure west wall has been truncated and the nature of the building join with Building 12 could not be determined, though at the base of the west-facing section there are a number of constituents that may butt against the southwest corner of Building 12. The wall had a short, east return at the north end, creating the north side of an opening/entrance with the northwest corner of Building 11 (see **Plate 102**). This opening is not shown in any of the historic Ordnance Survey maps. The south end of the west-facing elevation contains much larger stone constituents which may be indicative of this end of the wall, and hence the return, being re-bult or modified (**Plate 105**).

Plate 105: *The west-facing (exterior) elevation of the enclosure wall between Building 11 and Building 12 showing the possible re-build at the south end (right). Also visible at the base of the north end are the four course of stonework which appear to butt against the southwest corner of Building 12.*

Building 13

Building 13 is a single storey, two room structure to the northwest of the horse mill (Building 7). It is stone rubble-built and is currently roofless.

The building is identified as the Miller's house on the 1844 plan. The building is present on both the First Edition 25-inch Ordnance Survey map (Orkney LXX.16 (Westray), 1881) and the Second Edition map (Orkney LXX.16, 1901) as a roofed structure. On the 1920 plan the building is now identified as a byre for sick cattle.

Building 13 also forms part of the general listing (LB 18600, Miller's House) for the site area to the west of Central Road, and is designated as Category B.

The south-facing elevation has two external doorways and a window. One doorway is located close to the wet end of the elevation with some of the surrounding constituents, including the lintel, missing (**Plate 106**). The threshold is obscured by scrub grass vegetation. This is flanked to the right by a window which has a stone lintel and is blocked by stone rubble constituents rendered by lime mortar. The presence of a slightly outstanding flagstone, which may be a former sill, and a vertical wall scar above it and within the blocking stonework may indicate that the window originally extended much further down towards ground level before being

partially blocked to raise the level of the sill. The window was subsequently narrowed before being blocked completely.

Plate 106: *South-facing elevation of Building 13 showing the external doorway with the blocked window to the right.*

Plate 107: *West-facing gable end of Building 13 illustrating the slightly convex nature of the gable. The blocked small window is visible towards the north end (left).*

The second doorway is located towards the east end of the elevation and provides access to the smaller room at this end. The stone lintel is still *in-situ* and shows that the doorways in this elevation spanned the full height of the wall.

The west-facing gable end has a slightly convex nature (**Plate 107**). This is a small window on the left (north) side with a relatively thick lintel. There is no discrete sill and the window has been blocked with stone rubble constituents. There are the remains of a chimney stack at the apex of the gable and a lumb is visible on the interior elevation. The east-facing gable is completely obscured by vegetation though a chimney lumb is visible within the interior elevation.

The north-facing elevation has an external doorway on the right (west) side, opposite the blocked window in the south elevation. The doorway has a long, stone lintel set approximately three courses below the top of the wall. This has been blocked using stone rubble constituents bonded by lime mortar. No threshold was visible.

Though the building is now roofless, fragments of flagstone roofing material were still present along the top of the north elevation, at the southeast corner and around the remains of the chimney stack in the west gable. These show that the roof was comprised of large stone flags.

Plate 108: *General view of the east-facing elevation of Building 14, looking southwest.*

Building 14

Building 14 is a detached, single storey structure running northwest-southeast and located close to the southwest corner of Kye's Byre (Building 8) (**Plate 108**). It is stone rubble-built with a double-pitched, stone flag roof.

The building is not shown on the 1844 plan but it is present on both the First Edition 25-inch Ordnance Survey map (Orkney LXXI.13 (Westray), 1881) and Second Edition map (Orkney LXXI.13, 1901). The 1920 plan identifies the structure as a servants' bothy.

Building 14 also forms part of the general listing (LB 18600, Bothy) for the site area to the west of Central Road, and is designated as Category B.

The east-facing elevation has a centrally-placed external doorway with a stone lintel and threshold, and internal timber frame with plank door. This is flanked by windows left and right. Both windows have stone lintels and sills, and an internal timber frame divided into four panes. The left (south) window is set one stonework course lower than the right window.

The south-facing gable is plain with a large spread of lime mortar as render. It is topped with a large chimney stack with a single clay pot. The north gable end is plain and has no chimney.

The west-facing elevation has an external doorway on the left (north) with a stone lintel. The doorway has been blocked with stone rubble constituents bonded by lime mortar. The elevation has multiple patches of lime mortar render throughout.

The stone flagged roof has a stone ridge line and stone rubble overseamers at each end. There are three skylights in the west pitch. The two in the lower third are larger, situated left and right, and the third skylight is much smaller and positioned against the ridge line stones on the right. All three comprise a single pane of glass mortared in position.

Building 15

Building 15 stands immediately north of Building 14. It is flagstone rubble-built structure, single storey with a loft section at the east end. The building is partially cut into a bank at the east end (**Plate 109**). The double pitched roof comprises stone slates with skylights in each pitch.

Plate 109: *General view of Building 15, looking southeast, showing the differing ground surface levels at the west (foreground) and east ends (background).*

The building is the southernmost of two similar, parallel buildings on the 1844 plan, and these may be farm servants' houses (Rendall 2002: 52). The First Edition 25-inch Ordnance Survey map (Orkney LXXI.13 (Westray), 1881) shows Building 15 at the south end of a group of five buildings immediately north of Building 14. By the time of the Second Edition map (Orkney LXXI.13, 1901), Building 15 and the annex at its northwest corner are the only remaining structures of the group to the north of Building 14, with Building 8 to the east. The 1920 plan shows Building 15 without the annex and identifies it as 'Oxy Byre'.

Building 15 also forms part of the general listing (LB 18600, Byre) for the site area to the west of Central Road, and is designated as Category B.

The south-facing elevation is partially obscured by Building 14. There is an external doorway on the left (west). This has been blocked with lime mortar-bonded flagstone rubble constituents and the lintel has been completely covered by mortar rendering. The stonework above the lintel has no mortar bonding an appears to be set looser than the constituents across the remainder of the wall. This may indicate a partial rebuild of this section of wall.

The west-facing gable end has stepped wall tops and a large external doorway. The doorway sides have been rendered with a cement mortar. The exterior of the doorway is covered by a pair of timber sliding doors and the overhead track for these is housed in a concrete structure which extends beyond the roof line and to the edge of the wall tops (see **Plate 109**). The gable above the track housing is harled. Centred to the doorway is a window at roof space level. The lintel and interior sides are also covered in the same harling material. At the back edge of the window opening is a plank shutter.

The north-facing elevation is plain with the stonework being heavily repointed and with large areas of mortar rendering.

The east-facing gable end is cut into a bank with only the upper-half on the elevation being visible above the ground surface. The wall has stepped tops and the large external doorway ahs a pair of sliding doors identical to the those in the west-facing gable. The window above the doorway is lower in height than that in the east gable, and the gable is covered in the same render.

The roof has flagstone overseamers at each end. There are six, evenly spaced skylights in each roof pitch. These comprise a single pane of glass replacing a small number of stone slates and mortared in position.

Plate 110: *Length of upstanding wall (Building 17) incorporated into a modern agricultural shed, looking southwest. It is possible that this was originally part of a byre shown on the 1844 plan. A blocked doorway or window is visible at the south (left) end.*

Plate 111: *General view of the stackyard, looking south.*

Plate 112: *An example of a stone platform (steethe) in the stackyard.*

Additional Structures

A length of stone rubble walling, **Building 17**, was identified in the exterior wall of the modern byres west of Building 14 and Building 15 (**Plate 110**). This was interpreted as a remnant of an earlier structure which has been incorporated into a more recent structure and, on the basis of historic map evidence, the walling was considered to have been part of a byre which ran

northwest-southeast and was located close to the southwest corner of the Threshing Barn Range. This building is recorded as a byre on the 1844 plan and is shown on the First Edition 25-inch Ordnance Survey map (Orkney LXX.16 (Westray), 1881) and the Second Edition map (Orkney LXX.16, 1901). Structure 17 measures approximately 4.3m in length and has been capped with shuttered concrete along its whole length. Only the east-facing elevation is visible and this contains a doorway with a stone lintel which has been blocked by stone rubble constituents. The south edge of the doorway is obscured by the concrete wall of the modern byre.

The enclosure to the southwest of the Holland farm buildings is the stackyard (**Plate 111**). Circular dry stone-built platforms (steethes) are used to raise cornstacks off the ground. A total of seventeen platforms were identified during the fieldwork and these were surveyed using a Lecia (**Figure 12**). These were circular in plan with a conical or beehive profile (**Plate 112**) having an average height of 1.2m and diameter of 1.4m. A short section of enclosure walling, **Structure 16**, located to the west of the modern byres and north of the modern silage tank, was considered to be an upstanding remnant of the former east wall of the stackyard. The stackyard also forms part of the general listing (LB 18600, Stackyard) for the site area to the west of Central Road, and is designated as Category B.

5.6 Rousay, Saviskaill Farm

Saviskaill is located at NGR HY 40030 33502 in the northwest of Rousay and stands between the Loch of Wasbister and the beach at Saviskaill Bay. The site comprises a series of ruinous structures, unoccupied domestic buildings, and farm buildings which are still in use (**Figure 13**; **Plate 113**).

Plate 113: *Aerial view of Saviskaill Farm, looking southwest, showing Saviskaill Bay (left) and Loch of Wasbister (right). The ruinous, and partially eroded, structures are in the foreground with the unoccupied domestic buildings behind. On the far side of the roadway are the nineteenth-century agricultural and mill buildings with a modern agricultural shed furthest away (© Robert Friel).*

The site was visited as part of the project launch in Rousay during March 2024. Recording of the site was undertaken by the ORCA team and local volunteers in May 2024. It was not

possible to enter any of the buildings during the survey. A comprehensive photographic record was created along with a basic description of the building components. A total of twelve buildings were recorded.

5.6.1 Historical Background

The earliest mention of the farm comes from a rental document of 1503. Later rental documents and census data tell us that in the late eighteenth and early nineteenth century, the Inkster family were the tenants at Saviskaill, with the Seatter family from Evie taking over the running of the farm some time before 1851. By the beginning of the twentieth century Saviskaill was occupied by Walter Muir, from Lady in Sanday, and his family. By 1911, however, they had moved to nearby Breckan farm and Saviskaill was occupied by the Moar family.

Plate 114: *View from FB 2 of FB, looking northeast, showing loss of the east wall (right) and the upstanding remains of a corn drying-kiln (background centre and right).*

5.6.2 Building Description

Farm Building (FB) 1, 2, 3 and 4

The buildings (Farm Building (FB) 1, 2, 3 and 4) at the north end of the site are shown on the First Edition 25-inch Ordnance Survey map (Orkney LXXXV.9 (Rousay) 1880) as a group of roofed structures with the exception of FB 1, which is shown as being partially unroofed. A fifth structure is also shown, at the centre of the group, but this was not identified during the fieldwork.

FB 1 stands at the northeast corner of the site and is ruinous with the upstanding walls varying in height from approximately 0.2m to 1.75m. Due to its proximity to the vertical coastal edge direct access to parts of the structure was not practical. FB 1 comprises a 2-room, rectangular building with a large, square annex at the northwest corner. Much of the east elevation of the northeast room (FB 1.1) has been lost to coastal erosion (**Plate 114**). An external doorway is located at the south end of the west elevation in FB 1.1 and another at the east end of the

south elevation in FB 1.2. The north annex has a raised, stone-built floor standing approximately 0.3m above the interior ground surface. The east elevation of the annex, and the connecting east ends of the north and south elevations, are preserved to a height of approximately 1.75m. These show that the interior elevations were concave and that the interior space of the annex was very probably circular in plan (**Plate 115**). There is a rectangular aperture in the remaining fragment of the annex's south elevation. The annex was interpreted as the remains of a corn drying-kiln.

Plate 115: *View of the annex at the north corner of FB 1, looking southwest, showing the concave shape of the interior elevation and the aperture in the south elevation. The second annex is visible to the west (right) of FB 1 and FB 3 is visible southwest of FB 1 (right background).*

A short wall extending from the west elevation divides FB 1.1 from FB 1.2. The original width of this internal doorway could not be determined due to the loss of the east elevation but no earth-fast stones were identified on the ground surface which would signify a similar short wall extending from the east elevation (see **Plate 114**). A length of dry-stone walling (FB 2) extended from the southwest corner of FB 1. The constituents butted against the south-facing elevation and its build quality was noticeably poorer than that of FB 1.

A second annex extended from the external doorway in the west-facing elevation. This is not shown on the early Ordnance Survey mapping but is shown on late twentieth-century mapping (1:2500 (Revised) series HY4033 1976) as a roofed structure. It is probably, therefore, a later addition. A stone-lined sunken passage extends northwestwards from the external doorway to a rectangular structure which is also sunken. The interior of both the passageway and the structure are overgrown with scrub vegetation and no internal features were discernible. The floor of these structures appeared to be approximately 0.3m below the current ground surface.

FB 3 is a rectangular structure located to the southwest of FB 1 (see **Plate 113**). It is stone rubble-built with a double pitched roof and divided into two, equal-sized rooms (FB 3.1, west; FB 3.2, east). There is a blocked, full-height external doorway in the northeast-facing elevation of FB 3.1, close to the east end, and there is a blocked oddle hole close to the west end. The northwest-facing gable has largely collapsed above the height of the eaves, though a portion

of the roof has survived in the northwest corner of FB 3.1 showing the roof comprised flagstone slabs. There is an external doorway with a stone lintel in the southwest-facing elevation, directly opposite the doorway in the north elevation. There is a large external doorway with a timber lintel in the southwest-facing elevation of FB 3.2. No other features were identified in the external elevations. The floor of FB 3.2 comprised stone flags and the structure is roofed. Originally FB 3.2 probably had a flagstone roof similar to that of FB 3.1 but this has been replaced with one comprising corrugated cement sheets (see **Plate 115**).

Plate 116: *General view of FB 4, looking west from the beach at Saviskaill Bay.*

FB 4 is a former domestic structure, now ruinous, located south of FB 3 (**Plate 116**). Most of the walls survive to the height of the eaves, including the southeast-facing gable, though the northeast-facing gable survives to full height. There is a centrally-placed external doorway, with a stone lintel, in the southeast-facing elevation and a window, with stone lintel and sill, to its right (north). In the corresponding position to the left (south) of the doorway is a vertical construction break which may be indicative of a window originally being present in the elevation. There is, however, no construction break marking the other side of the window aperture, and no lintel of sill could be identified. The southwest-facing gable has collapsed above the level of the eaves and no features were identified in the elevation. The northwest-facing elevation stands to the same height and, again, no features were identified in the elevation. The northeast-facing gable is almost complete with the chimney stack showing minimal signs of collapse though is leans considerably towards the interior of the building. A small section of roof survives in the north corner with three or four large flagstone slabs remaining *in-situ*. The interior of FB 4 is filled with dumped spoil and timber window frames, and collapsed roof materials, all covered by scrub vegetation. The interior of the building was inaccessible and unsafe but the northeast and southeast were examined from an external position. The fireplace, with a large stone lintel, was clearly visible in the northeast elevation (**Plate 117**). To the left (west) was an integral storage cupboard divided by a stone shelf. No additional features were identified in the southeast elevation though it was noted that the construction break seen in the exterior elevation was also visible internally.

Farm Building (FB) 5, 6, 7 and 8

Buildings FB 5, 6 and 7 form a single range in the centre of the site, with walled enclosures to the north and south (**Plate 118**). The First Edition map shows the range divided into three structures but subsequent Ordnance Survey mapping does not differentiate these, showing the range as a single structure. The early map shows the range as being slightly shorter than the current range.

Plate 117: *Northeast elevation of FB 4 showing fireplace, lumb, integral cupboard and remains of the flagstone roof.*

Plate 118: *Aerial view of Saviskaill Farm, looking northwest, showing the domestic range (FB 5, 6, 7) and the single dwelling (FB 8) to the east of the road (right). To the west of the road are the free-standing byre (FB 9) and the complex containing the water-powered mill (FB 10) and the attached byres (FB 11, 12) (© Robert Friel).*

FB 5 stands at the east end of the range and is a two storey structure covered in a thick render. The external doorway is centrally-placed in the south-facing elevation with flanking windows at ground floor and first floor levels. The door is a modern uPVC type and the timber window frames are also modern examples. There is a line of render above the doorway at mid-first floor level. It is sub-rectangular in cross-section and may cover a line of thin, stone constituents. Its purpose is unknown but may indicate the former presence of a window or windows. There is a single window with a modern frame in the east-facing elevation at first floor level, mid-way between the centre line and the south edge. There are two centrally-placed windows in the north-facing elevation at ground and first floor levels. These windows are noticeably smaller than those in the south- and east-facing elevations. The roof comprises modern roofing tiles with plastic guttering along the north and south edges, and there is a small skylight in the south side.

Plate 119: *South-facing elevation of FB 5 (right centre) and FB 6. The chimney stack in FB 6 probably marks the division between the centre and west (left) structure shown on the First Edition 25-inch OS map.*

FB 6, a single storey structure, stands against the west-facing gable of FB 5 and comprises the two structures (FB 6.1, centre; FB 6.2, west) shown on the First edition map forming the centre and west parts of the range. The location of this internal division is probably marked externally by the chimney stack (**Plate 119**). Both the north- and south-facing elevations of FB 6.1 were covered in the same thick render as FB 5. This is seen to be continuous in the north-facing elevation. The external doorway is placed right (east) of the centre line in the south-facing elevation but this is obscured by a modern porch structure comprising a timber frame with corrugated concrete sheets forming the sides and roof. There is a window to the left (west) of the doorway with a modern frame in the same style as those in FB 5. There is a similar window at the east end of the north-facing elevation. Much of the remainder of this elevation is obscured by a large, concrete structure standing as tall as the elevation and supporting a modern, plastic oil tank. The roof comprises modern roofing tiles with plastic guttering along the north and south edges, and there are modern roof windows in both sides.

FB 6.2 is only partially rendered with the elevations mainly comprising the exposed stone rubble constituents bonded by lime mortar. The roof is composed of two styles. The east two-thirds, the roof is a continuation of the modern tiled roof also covering FB 6.1. There is a modern roof window in the north side. The remainder comprises corrugated, cement sheets which are continuous with FB 7 to the west. There are two skylights in the north side. The use of two roofing materials may reflect a revised internal division within FB 6.2. There is a centrally-placed window in the south-facing elevation which matches the size and form of those of FB 5 and FB 6.1. The render on the south-facing elevation extends just to the left of this window. To the right (east) is an external doorway with a modern door. Approximately opposite to these is a small window in the north-facing elevation with a timber frame. A second window is located in this elevation, close to the west edge of the FB 6.2. This has a modern frame and appears to have originally matched the window to the east but has been made taller to accommodate a modern frame. The render in this elevation extends to just east of the modified window and so is less extensive than the render in the south-facing elevation.

FB 7 is the extension to the range which was erected, on the basis of historic mapping, sometime after 1902 and prior to the 1970s. This is of stone rubble construction and there is a clear construction break in the north-facing elevation. This was not evident in the south-facing elevation due to extensive re-pointing of the stonework and the positioning of an external doorway in the position where the construction break was likely to be present. The west-facing gable contained a centrally-placed, large external doorway with sliding timber doors. The stonework around the doorway could not be examined so it was not possible to determine if this doorway was a later addition. One interesting feature was the presence of a shoe-last inserted into the north-facing elevation between the stonework (**Plate 120**).

Plate 120: *Shoe-least inserted into the stonework of FB 7, north-facing elevation.*

FB 8 is a free-standing domestic structure located to the west of FB 7 (see **Plate 118**) and is present on the First Edition Ordnance Survey map. The exterior of FB 8 is covered in the same render as FB 5 though there are areas around the south end of the building where the stone rubble constituents have become exposed. The external doorway is centrally-placed in the east-facing elevation, with an internal timber frame. There are no other features in this elevation. The south-facing gable has a narrow window close to the east edge, with a timber frame and a stone sill. There is a similar, slightly wider window close to the east edge of the north-facing gable. Both gables are crowned with a chimney stack and single chimney pot. There are three, evenly-spaced windows in the west-facing elevation. These have a more squared shape than those in the gable ends. The timber frames in all the windows appear to be original or, at least, not replaced after the mid-twentieth century. The square roofing tiles have been placed in a diagonal pattern and a number of these have been lost, exposing the timbers beneath.

Plate 121: *General view from the southwest corner of the quadrangle looking north towards FB 12 (left) and the lean-to structures built against the west-facing elevation of FB 9.*

Farm Building (FB) 9

FB 9 is located to the southwest of Wasbister Road and forms the east edge of a quadrangle along with FB 10, 11 and 12. Unlike these three other structures, however, FB 9 is free-standing and does not form part of a range of buildings (**Plate 121**). All four of these buildings are shown on the First Edition map.

FB 9 is a stone rubble-built structure with larger stones as quoins and a double-pitched roof comprising small flagstone constituents. There are three, equally-spaced windows in the east-facing elevation with the centre and left (south) windows blocked with stone rubble constituents. The right (north) window has a timber, internal shutter. The south-facing gable has an external doorway close to the west edge, with a sone lintel and threshold. A stone cobble-built incline butts against the exterior face of the threshold. A further external doorway is centrally-paced at first floor level, with a stone lintel and threshold. This has been blocked

with stone rubble constituents and a small aperture above may indicate the former presence of a beam for a hoist. The north-facing gable has been heavily modified to incorporate a large doorway. The modifications include the insertion of a concrete lintel, which extends outwith the gable, to which a rail for a pair of sliding doors was fitted. There is extensive re-pointing with cement mortar around the doorway and concrete beam.

Much of the west-facing elevation is obscured by two lean-to structures. These flank a centrally-placed external doorway, with a timber frame and door, in the main structure. The north lean-to (FB 9.1) extends from this external doorway and along the west-facing elevation to a point approximately 1m short of the northwest corner of FB 9. There are external doorways against the FB 9 elevation in both the north- and south-facing elevations of FB 9.1. There is also a vertical construction break close to the west side in both these elevations which indicate that the lean-to may have originally been open-sided (**Plate 122**). There is a blocked external doorway in the west-facing elevation with the blocking material also containing an aperture, similar to an oddle hole, which was later itself blocked. FB 9.1 has a roof comprising the original flagstone roof patched with corrugated metal sheeting. The south lean-to (FB 9.2) extends from the FB 9 doorway and along the west-facing elevation to a point approximately 1m short of the southwest corner of FB 9. The north-facing elevation contains the same construction break seen in FB 9.1, but this is absent from the south-facing elevation of FB 9.2. This elevation is continuous and butts against the west-facing elevation of FB 9. The line of coping stones below the upper edge incline of the elevation indicates the lean-to roof is a later addition. There is an external doorway in the west-facing elevation of FB 9.2. the re is a construction break close to the south end of this elevation and this may indicate that the south elevation was an earlier construction and the lean-to structure was added to it at a later date. Some constituents of the flagstone roof remain *in-situ* along the west edge of FB 9.2.

Plate 122: *North-facing elevation of lean-to structure FB 9.1 showing external doorway and construction break which may indicate the structure was originally open-sided.*

Plate 123: *North-facing elevation of FB 10, with FB 9 (left) and FB 11 (right), showing the two exterior doorways and first-floor windows in FB 10.3 (centre and right), and the widow in FB 10.2 (left end). The lean-to structure FB 10.1 is obscured by FB 10.1.*

Plate 124: *East-facing elevation of Building FB10 showing lean-to FB 10.1, the east gable of FB 10.2 immediately behind and the east gable of FB 10.3, the largest of the three structures. The mill-wheel is visible in the south elevation of FB 10.3 (left).*

Farm Building (FB) 10, 11 and 12

FB 10, 11 and 12 form a U-shaped range and comprise the south, west and north sides respectively of the quadrangle to the southwest of the public highway.

FB 10 is a stone rubble-built structure (**Plate 123**) comprising three distinct parts (**Plate 124**). FB 10.1 is single storey lean-to structure butting against the east-facing elevation of FB 10.2. There is an external doorway in the north-facing elevation with a stone lintel and threshold, and a timber internal frame and door. The south-facing elevation contains a centrally placed window with no frame. The original roof remains intact and comprises flagstone slabs.

FB 10.2 is a two-storey structure which shares a north-facing frontage with FB10.3 but is narrower and stands shorter than the mill building to the west. There is a centrally-placed small window just below the eaves in both the north- and south-facing elevations. Both windows have a stone lintel and sill. There are no further features in either of these elevations or the east-facing elevation. The original roofing material has been replaced with corrugated metal sheets.

Plate 125: *South-facing elevation of FB 10.3 showing the three internal levels and the mill wheel.*

FB 10.3 is contemporary with FB 10.2 but stands taller and is keyed into the south end of FB 11. There are two external doorways in the north-facing elevation both with stone lintels and thresholds, and timber internal frames. There are also two windows at first floor level. These are identical to the window in FB 10.2 but are slightly larger and one has an internal timber shutter. There are two large windows at ground floor level in the south-facing elevation. Both have stone lintels and sills, and the right (east) window has been blocked with stone constituents. There are two further windows just below the eaves which match the form of those in the north-facing elevation. Again, the right window has been blocked. The main feature in the south-facing elevation is the water wheel (**Plate 125**) which is situated lower than the ground floor level of FB 10.3. The wheel, shroud plate, arms and axle are all cast iron but the buckets are all missing and so, presumably, were timber-built. The shaft passes into the interior of FB 10.3 through a large rectangular aperture, similar in size and form to the ground floor window. The wheel sits in a stone-lined wheel pit which also acts as the bearing support wall. Much of the pit is filled with debris and is overgrown, particularly at the west, and no pen trough was identified. The water supply comes from the Loch of Wasbister via a

channel separate from the natural watercourse running into Nousty Sand. No tail race was visible or is depicted on the historic Ordnance Survey maps and so presumably the tail race runs underground and connects with the watercourse. The original roofing material has been replaced with corrugated metal sheets.

Plate 126: *West-facing elevation of FB 11 illustrating how the sloping ground surface heightens the elevation and increasing the number of internal floor levels (© Robert Friel).*

FB 11 is keyed into FB10 at its south end and into FB 12 at the north end. The level of the roof and eaves is constant across the building but the wall height of the north-half is approximately 75% that of the south-half. There is an external doorway centrally-placed in the south-half with a stone lintel and threshold, and an internal timber frame. This is flanked by two small windows with stone lintels just below the eaves. The left (south) window has an internal timber shutter. There is an external doorway centrally-placed in the north-half with a stone lintel and threshold, and an internal timber frame. The lintel is just below the eaves. Much of the roof on the east side is complete and comprises flagstone slabs on a timber frame which is partially close to the north end where a number of roofing flags are missing. There are three small skylights in the roof. These are evenly spaced across the south and centre portions and it is likely that a fourth skylight was situated in the are where the roofing stones are missing.

The west-facing elevation runs the full length of the west side of the range and encompasses the west ends of FB 10.3 and FB 12. The rising ground level towards the north end is more noticeable in this elevation (**Plate 126**) than in the east-facing elevation. There is a large, centrally-placed doorway with a steel and aluminium rail and housing for external sliding doors. The stonework around the doorway is heavily re-pointed with cement mortar indicating that the doorway has either been modified or is a later addition. To the right (south) of the doorway are two, evenly-spaced windows with large stone lintels, smaller stone sills and timber frames, which are probably original. The frames divide the windows into three pains (one upper, two lower). Directly above each are smaller windows with small stone lintels and sills. One has an internal frame of a single pain. These windows indicate the interior of the building has ground

and first floor levels. This contrasts with the view of the interior through the doorway which shows a single, ground floor-level space within. The change in the interior layout is probably marked by the dividing wall immediately south of the large, central doorway (**Plate 127**). To the left (north) of the external doorway are two, evenly-spaced windows. These match the first floor-level of the windows to the south but their design and form is more similar to the southern windows at ground floor level. Internally, this portion of FB 11 has only a ground floor. The roof materials and construction are identical to that seen on the east side of the roof. There are two skylights, their location showing these illuminate first floor levels of FB 11. The south end of the west-facing elevation forms the west-facing elevation of FB 10.3 which is continuous with that of FB 11. A window, identical to that in the south-facing elevation of FB 10.3, is centrally-placed, at ground floor level. A large external doorway is directly above this at first floor level with a timber lintel, a stone threshold and an internal timber door. There is a vertical construction break running up to the height of the ground floor window lintel, approximately 1.3m from the south edge. This may be related to an annex on the west end of FB 10.3 shown on the early Ordnance Survey maps. Much of the lower part of this elevation and the adjacent ground surface is obscured by dumped spoil and heavy vegetation, however, and it was not possible to identify any further remains potentially associated with this annex.

Plate 127: *View through doorway in the west-facing elevation of FB 11 with the internal wall marking the point where the building becomes a two storey-structure.*

FB 12 forms the northern east-west wing of the range. There is a centrally-placed external doorway in the south-facing elevation with a stone lintel and threshold, and an internal timber frame. This is flanked by two windows which in style match those at ground floor level at the south end of the west-facing elevation of FB 11 but with smaller lintels due to their positioning directly below the eaves. There is a second eternal doorway in the east-facing gable, close to the south edge with a stone lintel. This has an internal timber frame with a timber door. There

are no features in the north-facing elevation other than a blocked window close to the west end. The window matches the size and form of those in the south-facing elevation with the stone lintel lies just below the eaves but, because of the rising ground level and the subsequent reduction of the elevation height, the sill is only approximately 0.3m above the base of the elevation. Butting against the elevation, below the window, is a rectangular stone-built platform. This does not align directly with the window and the upper edge covers part of the lower portion of the window (**Plate 128**). It would be likely, therefore, that this platform was constructed following the blocking of the window rather than being related to any alternative use of the aperture.

Plate 128: *West end, north-facing elevation of FB 12 with the stone-built platform butting against the lower edge of a blocked window.*

5.7 Shapinsay, Cotbrae Slaughterhouse

The former slaughterhouse at Cotbrae is located at NGR HY 50330 17522 in the centre of Shapinsay, standing to the south of the B 9058 highway, on the west side of Chapel Brae Road (**Plate 129**). The earliest known depiction of the building is on the Second Edition 25-inch Ordnance Survey map (Orkney CIII.1. 1902).

The site was visited as part of the project launch in Shapinsay during March 2024. Recording of the site was undertaken by the ORCA team and local volunteers in May 2024. A comprehensive photographic record was created along with a basic description of the building components.

5.7.1 Building Description

The slaughterhouse at Cotbrae is a stone rubble-built structure, rectangular in plan measuring approximately 7m by 4.5m, with a double-pitched roof of flagstone tiles.

Plate 129: *General view of the slaughterhouse, looking northwest.*

Plate 130: *North-facing elevation of the slaughterhouse showing large doorway and ventilation hole.*

There is a large external doorway in the north-facing elevation (**Plate 130**). This is 2.3m wide and is the full-height of the elevation with a timber lintel directly below the eaves. The doorway has been partially blocked by timber slats. There is an aperture (0.32m wide by 0.36m high) to the right (west) of the doorway, approximately 0.3m above the current ground surface. This has a stone lintel and sill, and an internal iron frame with seven vertical iron bars. The roof has

two skylights on this side, evenly-spaced. One is fitted with a sheet of clear glass, the other is covered by an external timber shutter.

Plate 131: *North side of the west-facing gable showing the L-shaped deposit of mortar.*

Plate 132: *South-facing elevation of the slaughterhouse showing ventilation hole and drain head in the ground surface at the base of the elevation.*

The west-facing gable has an L-shaped skim of cement mortar which may be indicative on a lean-to structure having once butted against this elevation (**Plate 131**). The mortar runs horizontally at the height of the eaves and then runs vertically at a point 2.3m from the north corner. The horizontal mortar skim is noticeably wider than the vertical, and its surface has been scored with a series of intersecting diagonal lines throughout.

Plate 133: *Detail of the south-facing elevation showing the drain head.*

Plate 134: *East-facing gable of the slaughterhouse showing the doorway, ventilation and chimney.*

The south-facing elevation (**Plate 132**) has an aperture similar to that in the north-facing elevation (0.32m by 0.32m) located to the left (west) of the centreline and approximately 0.5m above the current ground level. Centrally-placed, butting against the base of the elevation is a stone rubble-built drain head with an iron drain cover (**Plate 133**). The roof also has two evenly-spaced skylights on this side. One has no additional features, the other has an iron frame and is covered by an external timber shutter.

The east-facing gable (**Plate 134**) has an external doorway, 1.11m wide by 1.95m high, with a stone lintel and threshold. The doorway is left (south) of the elevation centre line and has an internal timber frame and door. To the right (north) is an aperture similar to that in the north-facing elevation (0.33m by 0.33m) located approximately 0.15m above the current ground level. The elevation also features a centrally-placed chimney stack, six stone courses-high.

Plate 135: *South elevation with surface drain at the foot of the wall and chamfered protruding stone directly above.*

The interior elevations are all covered with a lime mortar render to a height of approximately 1.5m. There is a timber beam running the full length of the west elevation at this approximate height. Each end of this beam is inserted into the stonework of the adjacent elevations. The three apertures seen externally were all clearly visible in the internal elevations. No additional features were associated with these and it seems probable that these were for ventilation only. A surface drain was seen at the base of the south elevation (**Plate 135**) and this aligned with the drain head identified externally. Directly aligned above this, a large stone constituent protruded from the wall surface. Though damaged, it is clear that the stone surface had been chamfered. The function of this feature is not known and it is unclear if its positioning in relation to the surface drain is relevant.

There is a vertical aperture, approximately 0.6m high and 0.15m wide, in the north elevation, the purpose of which is unknown. There is no evidence for a fireplace, lumb or any other feature which could be related to the chimney, and there is no indication that this elevation has seen any extensive modification.

The interior fixture and fittings forming the roof are clearly visible. There are a total of ten roof trusses. The fifth truss from the west elevation has no tie-beam and has been modified to create an anchor point for an iron screwed into the lower face of the timbers (**Plate 136**). A number of the beams around this had iron bands fixed to them, one of which terminated in a hook. The precise function of these fittings could not be determined nut it is likely that these were related to the hanging of carcasses.

Plate 136: *Detail of the roof showing the modified central truss with iron ring (centre) and three iron bands on the timbers around including one with a hook (top right).*

5.8 Shapinsay, Balfour Village Gasometer

The gas storage tower (Canmore ID 133539) is located at NGR HY 47995 16658 at the northeast end of Balfour Village, standing to the south of the Sands Road (B 9059) highway (**Plate 137**).

The site was visited as part of the project launch in Shapinsay during March 2024. Recording of the site was undertaken by the ORCA team and local volunteers in May 2024. A comprehensive photographic record was created along with a basic description of the building components.

5.8.1 Historical and Technical Background

Shapinsay's characteristic landscape is the result of nineteenth-century agricultural improvements undertaken by David Balfour, the laird. The estate had been purchased by David's grandfather, Major Thomas Balfour, in 1782. He began the agricultural improvement of the land as well as founding the village of Shoreside. This was renamed Balfour Village by David and along with terrace cottages, semi-detached houses, a smithy, a grain mill and a new pier, David Balfour constructed a gasworks of which the gasometer is the only surviving structure.

Plate 137: *General view of the gasometer, looking northeast.*

Plate 138: *The gasometer, looking west, showing the red brick cap upon the stone rubble body.*

The gasworks was constructed some time between 1856 and 1861. In 1856 David Balfour was in correspondence with James Hansor who had patented a method for extracting gas, and the 1861 Census data show that a gas stoker was living in the village (Garson 2022: 38).

The gasometer, or gas storage house, was constructed using stone taken from Noltland Castle in Westray, also part of the Balfour estates, giving the structure an ancient and defensive look.

The gasworks are shown on the First (Orkney CII.4 (Shapinsay), 1881) and Second (Orkney CIII.4, 1902) Edition 25-inch Ordnance Survey maps. The gasometer stands at the northeast corner of the works which comprises two rectangular, roofed buildings, one of which is divided into two parts, with an enclosing wall. The gasworks were the most northernly private gasworks in Britain.

The gasworks ceased operation in the 1920s when they were demolished and the stone reused to build a nearby dwelling (Garson 2022: 39).

Plate 139: *Red sandstone panel with the Balfour coat-of-arms and, above, the Yellowstone dormerhead.*

The gasworks produced gas for use in lighting at Balfour Castle, throughout Balfour Village and along the pier. The method used at the Balfour gasworks produced coal gas. This was produced by the destructive distillation of coal in a closed, air-free cylinder, called a retort, through the heating of coal to a temperature of 600 to 1000-degrees C. The resulting coal gas is driven off, purified and stored prior to being delivered to the mains. Purification of the coal gas removed tar as well as impurities that affected the lighting process such as ammonia, hydrogen sulphide and sulphur compounds. The early purification process comprised washing the gas in a suspension of slacked lime but by the second quarter of the nineteenth century this had been replaced by a four-stage process using condensers, washers, scrubbers and dry-lime washers (Francis 2010: 12-14.

Gasometers stored gas and ensured that the mains system would not run out of gas. The main component was the storage vessel, called a bell, which need to be rigid but light. Initially these would have been constructed of wrought iron but later were of steel. The top and sides are closed but the base is open and this would often sit in a tank of water to ensure a good seal. The bell would be positioned in a guide frame that allowed it to move up and down and also prevented it from falling over. The domed top of the bell is called the crown, the edges of which are called the top curb. The bottom curb refers to the edges which sit in the water tank.

This water tank would often be the most complex piece of engineering of the gasometer as it would have to hold 500-700 gallons of water for each 100 cubic feet of the bell's interior capacity. For much of the nineteenth century water tanks would have been constructed of red brick with a layer of puddled clay behind to prevent water leaks. The bottom of the tank was protected by paving slabs though, once Portland Cement became available in the 1860s, concrete would be used instead. The gas was drawn into and out of the holder by pipes rising inside the water tank. The pressure would be controlled by valves and gas governors (Francis 2010: 14-16).

Plate 140: *Yellow sandstone dormerhead decorated with a unicorn relief.*

5.8.2 Description

The exterior of gas storage tower is a cylindrical structure predominately built of stone rubble but with a red brick crown (**Plate 138**) within which the structures that stored the coal gas would be housed. There is an external doorway facing west with a stone lintel. The doorway also has a stone lintel but this is partially obscured by a concrete step 0.3m high. There is a ring of six windows around the structure at the height of the door lintel. These are tall and narrow, resembling the loopholes seen in medieval fortifications. The join between the stone and red brick constituents is marked by a thin course of stone forming a half round moulding with red brick corbel below. The red brick cap also has six loopholes. The structure is designed to give the impression of being a turret in a system of fortifications.

The stonework contains a red sandstone panel bearing the Balfour coat-of-arms, the date '1725' and the initials of John Balfour and Elizabeth Traill (**Plate 139**). Above this is a yellow sandstone dormerhead, scroll-sided, bearing a rose and thistle. To the left (north) of these is another yellow sandstone dormerhead. This one is pedimented and decorated with a unicorn relief (**Plate 140**).

Internally, almost all the fixtures and fittings associated with gas storage have been removed and the interior ground surface is covered by detritus and vegetation. Any interpretation of the physical evidence related to the gasometer would, therefore, be conjectural. It was noted that

the interior face of the red brick cap comprised rubble stonework similar to the rest of the structure.

Within the stonework, at a level halfway between the lower decorative loopholes and the base of the brick cap were series of sub-rectangular apertures. These were present throughout the interior circumference, were roughly similar in size but with irregular edge to the stonework (**Plate 141**). It is likely that structural elements were fitted, attached or anchored to the stonework at theses locations and during the dismantling of the gasometer the stonework had to be removed to facilitate the process, of the stonework was damaged. It is possible that these were related to the frame which would have held and guided the bell of the gasometer.

Plate 141: *Interior of the gasometer tower showing the two lines of apertures/damaged stonework running round the interior wall surface.*

There was also a series of smaller apertures both at the height the lower loopholes and lower down in the elevation, at a level of approximately 0.75m above the concrete threshold in the doorway. Again, these may be related to the frame that held and guided the bell. The concrete threshold forms part of a cement concrete ring which runs round the full circumference of the tower interior (**Plate 142**). The ring sits on intermittent concrete blocks and a narrower, taller ring running behind the blocks and these all sit within a concrete groove. The inside edge of this is marked by a metal pipe, 0.1m in diameter, which runs round the full circumference of the concrete structures. The area defined by these sits lower than the exterior ground surface (see **Plate 141**). The concrete structures possibly anchored the open underside of the bell whilst also forming part of the water tank that provided the seal around the base of the gasometer.

A stone-built, sub-rectangular structure butts against the concrete rings, close to the external doorway, 2.75m in length. The upper surface is covered in a layer of concreted pebbled stones

and mortar (**Plate 143**). Mounted on the structure is a concrete base, measuring 1m by 0.85m in plan, with four iron bolts protruding from the upper face towards the north end, and arranged in a square pattern. No possible function for these features could be determined.

Plate 142: *The concrete ring running around the base of the of the interior wall. The metal ring which runs inside of this is visible in the nettles at the bottom of the picture.*

Plate 143: *The stone-built platform within the circumference of the concrete ring, with a concrete base on its upper surface.*

5.9 Stronsay, Meikle Meal Mill

The Stronsay, or Meikle, Meal Mill is located at NGR HY 65886 25519 on the south side of Everbay Road, close to the shoreline forming the southwest edge of Mill Bay. The Mill Burn runs immediately to the southwest of the mill building. This links Meikle Water, approximately 800m southeast of the mill, with Mill Bay. The area around the Mill Burn to the north of the mill building was known as 'The Milltoon'.

Plate 144: *View of Meikle Meal Mill, Stronsay, looking east, showing the harled front (northwest-facing) elevation and the roofless structure against the southwest gable housing the water wheel.*

The site was visited by the ORCA team and local volunteers in November 2023. A comprehensive photographic record was created along with a basic description of the building components.

5.9.1 Historical Background

Much of the research for the historical background to the Site has already been undertaken by Gail Cooper and published as a booklet (Cooper, 1995). Much of the information in this section is drawn from that research.

The current mill was built in the early 1800s to replace an earlier mill. This earlier building was located slightly further to the north, probably between the current Millburn dwelling and the sea, and was water-powered using water collected between the Castle and Linkhouse. When the water supply was short, however, its milling activities could be supported by wind-power.

The later mill was originally constructed with two water wheels, one at each gable end. The undershot wheel on the east gable was removed at some time in the nineteenth century. The mill was heightened in 1861 with timber from a wrecked vessel, the Festina Lenti, being used for the beams. Bars were added to the first-floor external doorway in 1896 following a fatal accident when John Mainland of Millfield mistook which floor he was on and stepped out of the door.

The mill and the properties forming The Milltoon belonged to the Balfour Estate and were leased to the occupants. Throughout its operational history, the mill was worked by the Chalmers family or their descendants.

The meal mill ceased production in 1972 and, at the time, it was the last working mill in Orkney. The last miller was David Groat, a grandson of the Chalmers family.

Plate 145: *Detail of front (northwest-facing) elevation showing the ground floor main entrance (right)and the first floor doorway. The narrower ground floor doorway on the left provides access to the corn-drying kiln*

Plate 146: *Two views of a chute descending from the first floor of the mill and passing through the partition at the southwest end of the main ground floor room. The meal would have passed through a sieve and screen and into a bag.*

5.9.2 Building Description

The mill building is a three-storey building, stone rubble-built with harling on the front (northwest-facing) elevation. The northeast- and southwest-facing elevations are gabled with the waterwheel housed in a roofless structure against the southwest gable (**Plate 144**).

Main Building

The mill is entered through a doorway centrally-placed in the front elevation (**Plate 145**) leading into the main ground floor room. At the time of the site visit this room was filled rubbish and household detritus. The room would have been used for storing dried grain and would also have housed a weighing machine. Two chutes, descending through the ceiling from the first floor, remain *in-situ* at the southwest end of the southwest end of the main room (**Plate 146**). Meal was carried down these chutes, passing through a sieve and a screen, into bags for storage. Also at the southwest end, a wooden partition separated the main room from the mill machinery. Much of this machinery appeared to remain *in-situ*, comprising fly wheels, gearing and shafts, though many of the exposed surfaces are showing oxidisation (**Plate 147** and **Plate 148**). The northeast end of the main ground floor-room was formed by the stone rubble-built wall of the corn-drying kiln.

Plate 147: *Mill machinery located on the ground floor behind the timber partition.*

A timber-built staircase against the northwest elevation provides access to the first floor. The grinding of the grain was undertaken on the first floor and three pairs of grindstones remain within their casings at the southwest end of the room (**Plate 149**). Grain would be ground initially to separate the kernels from the husks before they were ground into meal. Different grindstones would be used for producing bere meal or producing animal feed. This floor would also have been used to store the meal bags awaiting collection by the farmers. These bags would have been lowered through the first floor-doorway in the northwest elevation (see **Plate 145**). The northeast end of the first floor comprised the stone rubble-built southwest wall of the corn-drying kiln. Other than the grinding stone and their casing, no other machinery or fittings associated with the working use of the mill were identified. As with the ground floor, much of the floor space is covered by rubbish and detritus.

Plate 148: *Mill machinery located on the ground floor. The shaft extending from the hub of the large wheel connects to the hub of the exterior water wheel.*

Plate 149: *Two of the three grindstone pairs within their casings on the first floor of the mill building.*

A timber-built staircase against the northwest elevation provides access to the second floor. Access to the second floor was limited by the poor condition of the flooring. The second floor would have been used to store grain prior to drying. Bags of grain were lifted from the ground floor using a chain and a pulley which was operated using the water wheel. The pulley was fixed to the roof beams and remains *in-situ* (**Plate 150**). The shafts and gears which connected the pulley to the water wheel were also still present. The second floor is a completely open

space with the northeast and southwest gables visible. When in operation the flooring would have only extended from the southwest gable as far as the top of the corn-drying kiln wall. Cross beams across the open space between this wall and the northeast gable would have supported tiles to form the corn-drying floor. Grain would have been spread across this and heated from the kiln below to remove all moisture prior to grinding. The cross-beams would have been stone, slate or iron and the tiles manufactured from clay. This part of the mill has been heavily modified following the ceasing of milling. It is unclear which components were removed from the structure during the installation of the current, poor-quality flooring. It does seem likely, however, that the iron cross-beams present formed part of the drying floor (**Plate 151**).

Plate 150: *Pulley used for lifting bags of grain from the ground floor to the second floor of the mill building. The pulley is attached to a roof truss and was linked by a mechanism to the water wheel.*

The corn-drying kiln occupies the northeast end of the building with the ground floor structures extending to second floor level. Access to the base of these structures was severely restricted due to large amount of rubbish and detritus filling the narrow passageway. Exterior access to the kiln space was from both the front of the building and the rear via the chaffy house (see below). An interior doorway provided access to the main ground floor room. All three doorways were linked by a single passageway formed by the dividing wall seen at ground floor and first floor levels, and the front (southwest) wall of the kiln. A pitched ceiling descending from the top of the dividing wall separated this passageway from the open space above the kiln at second floor level (**Plate 152**). A second passageway running between the kiln and the rear (southeast) wall of the mill provided access to the rear of the kiln. Access along this was not possible and recording was limited to photographing the upper part of the kiln structure from the junction point between the two passageways. These observations showed that the kiln

had been modified at first floor level with the addition of, or replacement of the original structure with, concrete blocks (see **Plate 151**).

Plate 151: *View looking up from the ground floor of the corn-drying kiln at the underside of the replacement flooring of the second floor. The cross-beams appear to be iron and are probably the original fittings that formed part of the drying floor. Also visible are modern alterations to the upper structure of the kiln itself.*

Plate 152: *Corn-drying kiln - view along the passageway linking the front exterior doorway (centre) and the rear doorway (behind camera). The doorway on the left leads to the main ground floor room. The main kiln structure is on the right with the fire charging hole at the base.*

Only a single fire-charging hole was present in the southwest wall of the kiln. The aperture is formed by a dressed stone round-arch and incorporated a cast iron grate. A large stone block above the hole bore incised graffiti reading “888 + P S” (**Plate 153**).

Plate 153: *Detail of the kiln charging hole showing the iron grate and the graffiti above.*

Chaffy House

The chaffy house was used for storing husks and the mill dust and is a single-storey against the rear (southeast-facing) elevation of the main mill building. It is a stone rubble-built structure with a pitched roof. The roof is no longer extant though the roof-beam slots are visible in the mill building wall (**Plate 154**). The structure is divided into two by an integral, stone rubble-built wall and the roof beam slots only extend as far as this dividing wall. A construction-break in the southeast-facing elevation of the chaffy house shows that this formed the original northeast end of the structure which was extended prior to 1879 (Ordnance Survey 25-inch First Edition: Orkney XCII.16 (Stronsay) 1881). The original structure has two eternal doorways in the southeast-facing elevation and there are four doorways providing access to the mill interior from the chaffy house. One of these has been blocked using courses of stone rubble matching that of the buildings and is, therefore, unlikely to be a modern alteration and was probably carried out during the working life of the mill. The later extension to the chaffy house can only be accessed through a doorway in the dividing wall.

There are two rectangular windows, one each in the southeast and northeast elevations. There is no evidence for timber frames within the window apertures. Close to the south end of the southeast elevation is a rectangular aperture which has been blocked using coursed, stone rubble.

Plate 154: *View, looking northwest, of the chaffy house.*

Plate 155: *General view, looking northwest, showing the mill (right) with the stone-lined head race (left) leading to the timber trough and roofless wheel house (centre).*

Mill Race, Trough and Water Wheel

The water wheel was powered by the flow of water from Meikle Water, via Mill Burn, which originally fed into Mill Pond. The volume of water flowing from Mill Pond was controlled by a sluice gate. The pond sits higher than the ground level on which the mill stands and water

from mill pond was carried, firstly, along a stone-lined channel cut into an earthen embankment, and then, a timber-built trough into the roofless structure containing the water wheel (**Plate 155**). The timber trough was supported by four stone piers and a second sluice operated from within the mill controlled the flow of water and, as a result, the operations of the mill machinery. An overflow ditch ran from Mill Pond, to the southwest of the embankment and water wheel house, and under the roadway to rejoin Mill Burn close to the Brig.

Plate 156: *Southwest gable of the mill showing the timber trough supported by four pillars and the roofless water wheel house. The timber beam operating the sluice above the water wheel is visible protruding from the gable. The dry-stone walling in the foreground marks the approximate south edge of the overflow ditch.*

The Mill Pond is currently heavily silted with very little standing water within, and the Mill Burn now flows along the line of the overflow ditch. The sluice gate between Mill Pond and the head race has been replaced by a single concrete slab. The head race channel and trough are completely dry with some encroachment by the surrounding vegetation. Three of the stone piers supporting the trough remain with one having been partially replaced by a pier comprising concrete blocks (**Plate 156**).

The water wheel house is a roofless, stone rubble built structure (see **Plate 144**). The rear (southeast) wall incorporates a section which is slightly lower and slightly thicker to act as a support structure for the trough. There is a large, rectangular aperture in the southwest wall (see **Plate 156**) with a stone floor beyond presumably to allow access to the wheel and the wheel pit. The front (northwest) elevation is almost entirely open. There are timber frames on both sides of the open elevation with two timber cross beams. It is unclear if these formed part of the original fabric of the structure or a later, additional safety feature. The water wheel is an overshot wheel, 5-feet wide and 10-feet in diameter. The wheel would have turned in an anti-clockwise when viewed from the exterior (southwest). The axle, arms, rim and sole plate are all cast iron, with the buckets being timber. The axle passes through the southwest gable of the mill with the exterior end being seated upon the masonry forming the southwest side of the wheel pit (**Plate 157**).

Plate 157: *View of the water wheel, looking east, showing the axle seated upon masonry of the wheel pit, arms, rim and the buckets.*

5.10 Westray, Cornhouse

Cornhouse (Canmore ID 182106) is located at NGR HY 44919 48207 on the southeast edge of the Bay of Pierowall, standing to the east of Broughton (**Plate 158**). The site is a 'Category C' Listed Building (LB 47994).

Plate 158: *General view of Cornhouse, looking west, with Broughton beyond (right background)*

Recording of the site was undertaken by the ORCA team and local volunteers in October 2024. A comprehensive photographic record was created along with a basic description of the building components.

Plate 159: *North-facing elevation of Cornhouse*

5.10.1 Historical Background

The cornhouse has been provisionally dated to the late eighteenth or early nineteenth century and was used as a grain store (Ordnance Survey Name Book (Book 26). 1882: 142). During the eighteenth century, bere and oats were exported from Westray and these crops may have been stored at the site before being loaded on to a boat.

The First Edition 25-inch Ordnance Survey map (Orkney LXXV.7 (Westray). 1881) shows the 'Cornhouse' site as comprising two roofed structures and a pier, with the southern structure having an unroofed structure or enclosure butting against its northeast corner. The site layout is identical on the Second Edition map (Orkney LXXV.7. 1901) but with the added detail of external stairs at the east end of both structures. The pier is no longer shown on the late twentieth-century mapping.

5.10.2 Building Description

South Building

This is a two-storey, stone rubble-built structure measuring 10m by 5m in plan. The walls are 0.6m to 0.7m thick, clay-bonded with alternate canted quoins. The Canmore entry records the roof as being intact when visited in 1998. Much of the flagstone roof has now collapsed, exposing the timber roof trusses.

The north-facing elevation (**Plate 159**) has an external doorway, slightly right (west) of the centre line, with a stone lintel and threshold. Internally the doorway has a timber lintel and each side has a deep, full-height recess indicating the doorway probably had a substantial frame (**Plate 160**).

Plate 160: *Detail of external doorway in north-facing elevation with a wall scar showing the former position of the door frame.*

The west-facing gable is crow-stepped gable with a chimney above. There is a blocked window at first-floor level with a stone lintel, though there is no identifiable sill. The stones blocking the window are bonded with a lime mortar.

Plate 161: *East-facing gable showing external stairs and doorway at ground- and first-floor levels.*

The south-facing elevation has two, evenly-spaced windows at ground floor level. Both of these are blocked using large stone rubble fragments bonded by lime mortar.

The east-facing gable is crow-stepped with external stone rubble-built stairs leading to a first floor external doorway (**Plate 161**). The doorway is located close to the north edge of the gable and its stone lintel also forms part of the crow-stepping. Directly below this doorway is a ground floor accessed via a passage running below the stairs and the top platform. The stairs were seen to comprise a wall running parallel to the gable with the steps bridging the gap between this and a slightly protruding section of the gable (**Plate 162**). The east-west wall at the north end, supporting the top platform, butted against the east-facing gable and was not bonded to it.

Plate 162: *Detail of the staircase butting against the east gable showing the space below the stairs which is accessible from the passage leading to the external doorway.*

Internally the walls were covered in a thin rendering of lime mortar. Much of this render had fallen away, exposing the stone constituents. The windows in the south elevation were seen to have a much larger aperture internally (**Plate 163**) with a sill approximately 0.5m below the base of the external aperture. Internally, the windows had a timber lintel. The floor was seen to comprise stone flags throughout.

It was not possible or safe to access the first floor and the interior at this level could only be examined through the floor where the timbers were absent. A fireplace was identified in the west elevation (**Plate 164**). This had a large single stone as a lintel and the surrounding wall surface were covered with the same lime mortar render which appeared to have survived to a greater degree than at the ground floor level. To the right (north) of the fireplace, the window

seen in the external elevation was identified. Unlike the ground floor windows this was not any wider internally. It was noted that much of the lower portion of this window internally was obscured by the timber floor and its supporting beams.

Plate 163: *South elevation with blocked windows.*

Plate 164: *Detail of west elevation, first floor with fireplace (left) and blocked window (right).*

North Building

This is a two-storey, stone rubble-built structure measuring 12m by 5m in plan (**Plate 165**). Much of the walling at the first floor level is absent and nothing of the roof survives.

The northeast-facing elevation has a centrally-placed external doorway with a stone lintel and slightly raised threshold. The doorway has an internal recess similar to that seen in the south building. The northwest-facing elevation has a 3m-wide opening at its north end. The stonework forming the north side of the opening clearly has a number of constituents removed throughout the full height of the structure (**Plate 166**). There is a construction break close to the south side of the opening and the stonework is characterised by the use of lime mortar to bond the constituents. The modifications to the stonework and the opening extending significantly into the first floor level would indicate that the opening is probably a much later modification to the building.

The southwest-facing elevation is plain other than the slots for the first floor support timber being visible in the stonework. Some of the stone constituents forming the west corner are missing. The southeast-facing elevation has a first floor external doorway close to the west edge (**Plate 167**). This has a stone threshold and survives to approximately half its original height. There is no direct evidence for the external stairs but there is a pronounced rise in the ground level below the doorway with a significant number of earth-fast stones within which may be rubble from the demolished stairs.

Internally the floor surface is completely obscured by soil, stone debris and scrub vegetation. The only features identified in the internal elevations were the beam slots for the first floor. Twenty-four were visible at a height of approximately 2m, running the full-length of the northeast and southwest elevations (**Plate 168**). The presence of the first floor beam across the northwest end of the building further strengthens the conclusion that the opening at that end of the building is a much later modification.

Plate 165: *General view looking west towards the north building and the cornhouse.*

Plate 166: *Northwest-facing elevation with large exterior doorway.*

Plate 167: *Southwest-facing elevation with truncated first-floor doorway.*

Plate 168: *Interior looking north showing the slots for the first floor joists slightly below the truncated wall head.*

6 Walkover Surveys

6.1 Eday, Fersness Quarry

Fersness Quarry (Canmore ID 3223) is located at NGR HY 53608 33535 on the south shore of Fersness Bay, in the west of Eday. The site comprises the quarry workings, cut into the coastal slope, the remains of a pier, and a former dwelling named Quarryhouse. (**Plate 169**).

Plate 169: *View from the shoreline, looking south, towards Fersness Quarry. Quarryhouse is also visible above the quarry face (centre background)*

The site was visited as part of the project launch in Eday during February 2024. Recording of the site was undertaken by ORCA and local volunteers in September 2024 (**Figure 14**).

6.1.1 Historical Background

There has been a stone quarry in intermittent use on the site since at least the seventeenth century, and there is reference to both Calf and Fersness Quarry in a document 1828 Samuel Laing bonded nearly all of the Carrick Estate to Gilbert Laing Meason (Hebden 2008: 88;116). Continuous working at the quarry restarted in 1855 when it was rented out, at £12 *per annum*, to an expert quarry foreman. The workers came from thirty North Ronaldsay families who were resettled on the poor, sandy land on the west side of Eday following an agreement between Robert Hebden of Carrick House and the laird of North Ronaldsay. Quarryhouse was built at this time. There was also a pier at the quarry which allowed the stone cut from the quarry to be loaded directly on to boats and transported away. The quarry produced a yellow sandstone called Eday Freestone because it can be split easily and freely. The stone, as well as being exported, was used for buildings and roads in Eday. The pier at Backaland was constructed using sandstone from Fersness.

The quarry lease was later taken up by James Baikie and John Tulloch at a rental of £40 *per annum* before it was passed to Thomas Hood of Wick in 1885. The 1871 Census data show that of the 900 people living in Eday, thirteen men were employed at Fersness Quarry. John

Hood & Son of Wick took over the lease of the quarry c.1907, and in 1939 the Eday Peat Company bought a crane with weighing machine, and a boat from J. Hood as the pier at the stone quarry could accommodate larger vessels than the Peat Co. own pier in the northwest of Eday. It was about this time that the quarry started to become unviable due to pressure from overseas imports and, after the Second World War, the use of concrete blocks as building material. The Great Gale of 1953 destroyed the pier at Fersness and the decision was made to not rebuild it; not only did the decline in the both the stone and peat industries mean that there was no economic justification for repairing the pier, but the sandstone seam at Fersness was almost exhausted at this point anyway.

Plate 170: *View from the centre of Fersness Quarry, looking towards the southwest corner, showing a pile of stone debris alongside one of the retaining walls (**Feature 20**) constructed within the quarry.*

6.1.2 Site Description

Quarry Cutting

The historical cutting of the quarry extended southwards from the shoreline along Fersness Bay and currently measures approximately 150m (north-south) by 40m (east-west). This would have been the size of the quarry when operations ceased in 1953 and contrasts with the earliest depiction of the quarry on the First Edition 25-inch Ordnance Survey map (Orkney LXXXVI.10 (Eday) 1881) showing the quarry with a size of 75m by 40m.

Much of the earlier quarry faces at the north end are obscured by the tipping of spoil and stone debris from the later workings. There is also a similar spoil and debris pile at the southwest corner of the quarry cutting (**Plate 170**). Throughout the quarry workings, tooling and cutting marks were identified on the exposed work faces (**Plate 171**). A total of five retaining walls, all constructed of stone from the quarry itself, were identified within the quarry cutting. Three of these (Feature 15, 17 and 19) were along the east side, with the remaining two (Feature 20 and 21) on the west side (see **Plate 170**). Four of these are located within the workings excavated after 1881 in an area where the rising coastal slope means the quarry face heightens significantly. The most northernly retaining wall, Feature 15, lies much closer to the shoreline in an area that is shown without a working face on the early Ordnance Survey

mapping. The function of these retaining walls appears to be primarily related to the spoil heaps and maintaining access along the quarry floor.

Plate 171: *An example of the tooling marks visible on the working faces.*

Plate 172: *The beach at Fersness Quarry, looking north, showing the remains of the east-facing elevation of the former pier with an additional, distended fragment at the water's edge.*

Between two of the retaining walls on the east side (Feature 15 and 17) was a flight of stone steps (Feature 16) set into the consolidated spoil material. This lead from the base of the quarry cutting to the top of the spoil tip and the base of the exposed working face above.

Other Quarry Structures

A pier was located on the shoreline at the mouth of the quarry cutting to allow the loading and transport of quarried stone. This is shown on both the First Edition (1881) and the Second Edition 25-inch Ordnance Survey map (Orkney LXXXVI.10 1902) with the Second Edition showing a crane located on the end of the pier. The structure was heavily damaged during the storm of 1953 and it is not shown on subsequent mapping. Examination of the rocky foreshore identified fragments of dressed stone with mortar and concrete adhering to the surfaces. Close to the water's edge, i*n-situ* facing stones (Feature 23), interpreted as the east- and west-facing elevations of the pier, were identified. These extended for a length of approximately 6-7m with a maximum preserved height of approximately 1m (**Plate 172**).

Two buildings are shown on the early Ordnance Survey mapping at the north end of the quarry workings. An L-shaped structure in shown on both the First and Second Edition in the northeast corner of the workings, an area which is currently mainly covered by spoil and scrub vegetation. A length of walling (Feature 14) comprising three-to-four courses of stone rubble was visible within the consolidated spoil, with a total visible length of approximately 1.3m.

Plate 173: *General view of Quarryhouse looking northwest from Westside Road. This view shows the main domestic building (Building 1), now roofless, with a later outbuilding (Building 6) behind.*

The second building is only depicted on the Second Edition map and is a roofed, rectangular structure to the northwest of the quarry opening, at the base of the coastal slope. A sub-rectangular earthwork with earth-fast stone constituents (Feature 12) was identified during the fieldwork and was interpreted as the remains of this building. The northwest, northeast and southwest edges were clearly visible and defined an area measuring 7m by 4.32m, with a possible open-cut drain running along the exterior face of northeast earthwork. Approximately 2m to the south of the earthworks was a stone rubble retaining wall (Feature 13) which formed part of an earth-built slipway running down the coastal slope. This slipway was 4.5m wide and

is first depicted on the 1971 (revised) 1:2500 Ordnance Survey map (HY5233-HY5333 – AA 1972). This feature probably post-dated the abandonment of the quarry and the retaining wall may have re-used material from the building.

Quarryhouse

Quarryhouse is located to the south of the Fersness Quarry close to the modern Westside Road (**Plate 173**) which follows the line of the original track running out to Sealskerry Bay. The farmstead is depicted on the First Edition Ordnance Survey map as a roofed, L-shaped structure with a boat-shaped, roofed structure approximately 12m to the west. The Second Edition map shows a similar layout with a square, roofed outbuilding to the northeast of the main building and the addition of a number of enclosure walls between the standing structures. The later twentieth-century mapping shows an identical layout but the east-west arm of the farm building is now shown as roofless, and the boat-shaped building is absent with its east wall now a curvi-linear section of the enclosure east wall.

Plate 174: *East elevation, Building 1 at Quarryhouse with centrally-placed fireplace, storage cupboard (right) and external window.*

The east-west arm (Building 1) of the L-shaped building formed the main domestic structure in the farmstead (see **Plate 173**). The domestic structure is built of dressed stone blocks, laid in irregular course with stone lintels and sills throughout, and large quoins in each of the corners. The quality of the building reflects its location alongside the quarry and access to the necessary skills and stone-cutting tools to construct a domestic structure of a significantly higher quality than other vernacular, domestic buildings in Eday. There is a centrally-placed external doorway in the south-facing elevation, flanked by large windows. Both the west- and east-facing gables feature a slightly smaller window located towards the south end of the gable. Both gables have suffered extensive collapse above the level of the eaves but the shape and dressing of the surviving quoins in the uppermost courses show that the roof was double-pitched. The north-facing elevation contains two windows of the same height of those in the gables but narrower. One is centrally-place, the second is located halfway between the first window and the left (east) end of the elevation. The west end of the elevation is obscured by the north-south arm of the L-shaped building complex.

Stone constituents from the collapse of the gables and the roof littered the interior of Building 1. Fragments of wall plaster covering the wall faces are visible on all four interior elevations. There are centrally-placed fireplaces in both the east (**Plate 174**) and west elevations though that in the west elevation has collapsed and is discernible only just above floor level. Both fireplaces have an external window to the south and a storage space on their north side. The remains of plaster within the storage space in the west elevation shows that these spaces originally contained shelves. There is a third, significantly smaller fireplace in the north elevation, immediately to the right (east) of the central window. All, the windows are set in recess within the interior elevations that are wider than the window apertures themselves (see **Plate 174**) with the exception of the central window in the north elevation. There is an internal doorway in the north elevation located halfway between the central window and the west end of the elevation, providing access to Building 2.

Plate 175: *East-facing elevation of Building 2 at Quarryhouse showing external doorway and the exposed constituents of the north gable. The wall scar for the double pitched roof of Building 2 can be seen in the north-facing elevation of Building 1 (left) above the doorway of Building 2.*

Building 2 is the southernmost element of the north-south arm of the Quarryhouse building complex. The stonework of Building clearly butts against the north-facing elevation of Building 1 and a wall scar matching the double-pitched roof of Building 2 can be seen cut into the stonework of Building 1 (**Plate 175**). There is an external doorway in the east-facing elevation, sitting in the apex of the L-shape of the building complex so that the south edge of this doorway is formed by the north-facing elevation of Building 1. There is a window in the west-facing elevation which is currently partially blocked by a piece of hardboard with a rectangular hole cut through it. Unlike the windows of Building 1, this window has a two-stone lintel though the sill is a single stone. The north gable also acts as the south gable of Building 3 and the stonework of these two structures appears to be continuous. Only one interior feature was identified in Building 2. A large storage cupboard with a single stone slab is set in the north elevation at the west end against the west elevation. The interior of Building 2 is littered with collapsed stone constituents and roof timbers.

Building 3 is directly north of Building 2 and the mortar adhering to the shared gable between these two buildings show that the roofline of Building 3 was set lower than that of Building 2. This was considered to be a result of the downward sloping ground surface. The line of this mortar and the shape of the north gable show that the roof of Building 3 was double-pitched (**Plate 176**). Building 3 has two external doorways, directly opposite each other in the east- and west-facing elevations. The interior floorspace is covered by scrub vegetation.

Plate 176: *West-facing elevation of Building 3 showing the line of the roof on the shared gable with Building 2 (right) and the external doorway.*

Building 4 is directly north of Building 3. The stonework is continuous between the two structures and they are continuously shown as a singe structure on the Ordnance Survey mapping. The external doorway is located at the north end of the east-facing elevation, has a single stone lintel and an internal timber frame. The height of this doorway was noticeably lower than those seen in the other buildings. There is a large drain aperture in the north-facing elevation, approximately 0.75m above the external ground surface. Internally, this aperture was only approximately 0.25m above the floor. The south-facing gable is a shared dividing wall with Building 3 and a series of timber-built animal stalls against the south elevation. Two survive *in-situ* (**Plate 177**) but it was clear that there were originally four stalls. Building 4 is the only structure within the L-shaped complex with an intact roof. The original roof comprised flagstone roofing slabs with a small, square-cut skylight in both the east and west sides. The upper half of the roof on both sides has been replaced by corrugated, cement sheets.

Structure 5 is an open space between Building 4 and 6 with a stone rubble-bult wall defining the north edge. This wall butts against the east-facing elevation of Building 4, though its stonework is continuous with Building 6. The south edge is defined by the remains of a timber-built partition but it is unclear if this is a later addition.

Plate 177: *South elevation of Building 4, Quarryhouse, with two, in-situ timber-built animal stalls.*

Plate 178: *South-facing elevation of Building 6 showing partially collapsed roof.*

Building 6 is a rectangular, stone rubble-bult outbuilding. There is an external doorway in the west-facing gable directly opposite the doorway of Building 4. The doorway has a single stone lintel the north end of which lies directly on the top of the north wall of Structure 5 and is, therefore, lower than that of the lintel in Building 4. There are no other external features. The roof is largely intact, with a minor collapse at the east end, and small, square-cut skylight in both the north and south sides. The roof comprises flagstone roofing slabs with a flagstone

ridge and timber roof trusses (**Plate 178**). Internal features comprised a drain in the north elevation and a timber frame against the east elevation with iron fixings for securing cattle.

Structure 7 comprised an L-shaped wall butting against the north-facing elevation of Building 6. The slightly sloping upper edge of the west-facing elevation may indicate that this was originally a roofed, lean-to structure. The interior space was inaccessible due to the proximity of the upper edge of the quarry workings, which also prevented examination of the north-facing elevation of Building 6.

Plate 179: *General view, looking southeast, towards the northwest corner of the enclosure wall (Structure 8) showing the curvi-linear form of the north-south wall at its north end – a relict form preserving the line of the roofed, boast-shaped structure which originally stood at this corner of the enclosure.*

Structure 8 comprised the dry-stone walling forming the enclosure around the west, south and southeast edges of the L-shaped building complex. This are first depicted on the Second Edition Ordnance Surbey map and their shape in plan remains essentially unchanged on the current mapping. The only significant change is the roofed, boat-shaped structure seen on the First Edition map which is incorporated into the enclosure wall. Late twentieth-century mapping shows this has lost both its roof and east by the line of its east is wall remains preserved in the enclosure. This was identified during the fieldwork (**Plate 179**) and it was noted that the ground level within the curvi-linear section was higher than the surrounding ground which may indicate a former growing plot.

Structure 9 comprised the dry-stone walling which defined the rectangular enclosure directly south of Structure 8 and acts as a retaining wall for the terraced area forming the enclosure. The north wall of Structure 9 was incorporated into the south wall of the later enclosure (Structure 8). The north and east walls are largely intact. The west wall survives only at the northwest corner, and the south wall is no longer extant, probably as a result of the formalisation of the east-west track to the south as the modern Westside Road highway.

Building 10 is a small, stone rubble-built structure located west of Structure 9. It measures 2.45m by 2.10m in plan and is not recorded on the Ordnance Survey mapping. Only a single

course remains *in-situ* though it is clear that there was a narrow doorway on the east side. This may have been an outhouse or hen-house.

Plate 180: *General view, looking northwest, showing the house platform (Building 11) with the remains of the enclosure wall beyond (right background)*

Ferness Quarry Building and Enclosure

The historic Ordnance Survey mapping show a roofed building with an attached enclosure to the west of the quarry workings. These are shown on the late twentieth-century mapping, though the building is recorded as now being unroofed. During the fieldwork the remains of the building and the enclosure against its north side were identified. The building had been completely robbed of stone but the raised house platform was still clearly discernible (**Plate 180**). To the north, sections of the enclosure wall were still visible as earth-fast stones within a low earthwork. This defined an area within which any exposed soil was seen to be very dark in colour with an organic feel, indicating that the area had been cultivated.

6.2 North Ronaldsay, Dennis Head

Dennis Ness forms the northeast headland of North Ronaldsay at NGR HY 76146 55582, between Tor Ness and Westness. The kelp workings mainly comprise kelp pits with a small number of tangle dykes and cover an area from Dennis Head in the south to Ires Taing and Trolla Vatn in the north (NGR HY 78864 55198 to HY 78145 56106).

Recording of the site was undertaken by the ORCA team and local volunteers in September 2024.

6.2.1 Survey Results

A total of 67 features related to the processing of kelp were identified. Of these, were 64 kelp pits and three were tangle dykes. The distribution of the features is shown in **Figure 15** and the data summarised in **Table 7**.

Plate 181: *Feature 57, looking north.*

Plate 182: *Feature 30, looking north.*

Kelp Pits

A total of 64 kelp pits were identified, all located to the east of the road running between Dennis Loch and the lighthouse, or to the north of the lighthouse. These varied from 1.5m to 3.2m in diameter, with an average size of 2.1m. The pits had an average preserved depth of 0.19m. Only nine of the pits were not classified as 'Definite' or 'Probable'.

The kelp pits were seen as circular depressions within a generally flat ground surface, often more abundant or varied flora (**Plate 181**). The 48 kelp pits regarded as 'Definite' were classified on the basis of stone constituents being present. The stone lining of the pits was occasionally visible within the features (**Plate 182**). During the survey it was noted that the kelp pits were occasionally set out in lines, often parallel to the shoreline, or at an oblique angle (see **Figure 15**). This was particularly evident at the small cluster of kelp pits near Trolla Vatn. The area between Trolla Vatn and Loch of Sjaivar was almost completely devoid of kelp pits, and it was observed during the walkover survey that this area was noticeably more waterlogged than other areas to the east of the metalled highway. The highest concentration of kelp pit was found in the area between Loch of Sjaivar and Dennis Loch, with the pits often laid in lines or large clusters around the extant walled enclosures. There was a small cluster to the south of Dennis Loch but none to the east where the Old Beacon is located.

Plate 183: *Feature 75, looking north, with Feature 74 in the background.*

Tangle Dykes

Only three tangle dykes were identified. These formed a group above the coastal section at Versa Geo. These measured between 3.4m and 4.3m in length, all with a width of 1m and were preserved to an average height of 0.35m. Two of the dykes, Feature 74 and 76, were orientated parallel to the shore and one, Feature 75, perpendicular to it. Stone coursing was visible in all three examples (**Plate 183**).

6.3 North Ronaldsay, Lenswick and Tor Ness

Lenswick is located in the northwest of North Ronaldsay at NGR HY 76146 55582, between Tor Ness and Westness. The kelp workings (Canmore ID 313986) comprise tangle dykes and a small number of possible kelp drying-platforms. A tangle dyke is usually referred to as a 'steethe' in North Ronaldsay.

Tor Ness forms the northwest point of North Ronaldsay (NGR HY 75715 55625). The kelp workings are located inland of the disused quarry (Canmore ID 340166) and comprise a small number of kelp pits.

Plate 184: *Feature 04, looking north.*

Plate 185: *East-facing elevation of Feature 08.*

The site was visited as part of the project launch in North Ronaldsay during April 2024. Recording of the site was undertaken by the ORCA team and local volunteers in September 2024.

6.3.1 Survey Results

Lenswick

A total of 13 features related to the drying of seaweed tangles were identified. Of these, nine were tangle dykes with the remaining four being large slab structures which may have possibly been utilised for the drying of tangles. The location of the features is shown in **Figure 16** and the data summarised in **Table 8**.

The tangle dykes varied in length from 2.78m to 6.67m, with an average length of 4.97m. These were generally 1m in width with a height varying from 0.18m to 0.73. The variation in length and height can generally be attributed to truncation through erosion, stone robbing and the movement of sand altering ground levels and partially obscuring the structures. The dykes were preserved as linear stone-built features (**Plate 184**) within which distinct courses could be identified (**Plate 185**).

Plate 186: *Feature 07, looking west.*

There were four features interpreted as tangle drying-platforms. These comprised a large, pebbled stone slab supported by smaller beach stones (**Plate 186**). These slabs varied in length from 0.64m to 2.59m. The smallest of these, Feature 12, was an example which had been dismantled and it was unclear if the largest remaining constituent was the top slab or a supporting stone.

Tor Ness

A total of five kelp pits were identified to the south of the disused quarry at Tor Ness. The location of the kelp pits is shown in **Figure 16** and the data summarised in **Table 9**. The pits varied from 1.8m to 2.5m in diameter, with an average preserved depth of 0.17m. Four of the kelp pits were graded as ‘Definite’ or ‘Probable’. The pits were seen as a circular depression in the fairly flat landscape (**Plate 187**). It is possible that the number of kelp pits in this area was originally higher with examples lying closer to the shore being subsequently lost to the quarry workings.

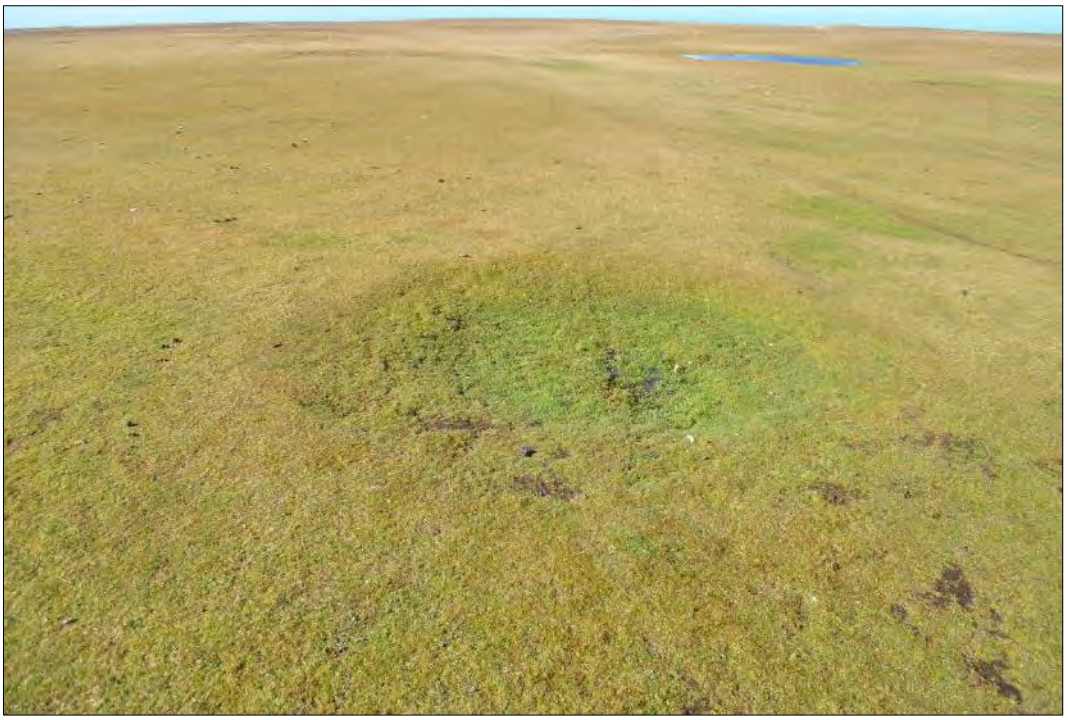

Plate 187: *Kelp pit identified during the Project Launch site visit at Tor Ness, looking southwest.*

6.4 North Ronaldsay, Linklet

Linklet is an open flat area of grass-covered sand on the east coast of North Ronaldsay between NGR HY 76666 53452 and HY 76862 54693. The area forms part of the shoreline on to Linklet Bay and lies outwith the sheep dyke. The dyke defines the west boundary of the site.

Recording of the site was undertaken by the ORCA team and local volunteers in September 2024. Due to time constraints, approximately half of the site area was surveyed.

6.4.1 Survey Results

A total of 89 features related to the kelp industry were identified. Of these, were 88 kelp pits and the remaining feature was a ware slip. The distribution of the features is shown in **Figure 17** and the data summarised in **Table 10**.

Kelp Pits

A total of 88 kelp pits were identified in the surveyed area. These varied from 1.3m to 4.3m in diameter, with an average size of 2.18m. The pits had an average preserved depth of 0.18m. Only eleven of the pits were not classified as ‘Definite’ or ‘Probable’.

The kelp pits were seen as circular depressions within a generally flat ground surface, often more abundant or varied flora (**Plate 188**). The 48 kelp pits regarded as ‘Definite’ were classified on the basis of stone constituents being present. The stone lining of the pits was occasionally visible within the features (**Plate 189**). During the survey it was noted that the kelp pits were occasionally set out in lines parallel to the shoreline (see **Figure 17**). This was particularly evident to the north of, and immediately south of, the ware slip (see below). The largest cluster, and greater spread, of kelp pit was in the area around the ware slip which was also associated with a number of openings in the sheep-dyke. This was probably the preferred area for burning the kelp as it was closest to the point where the material was being brought up from the beach and where there was easy egress to the trackway.

Plate 188: *Feature 178, looking northwest.*

Plate 189: *Feature 110, looking northwest.*

Ware Slip

A ware slip is a cutting through the sand and pebbled stone forming the coastal section to allow the gathered kelp to be dragged from the beach, up to the area of the kelp pits. One of these, Feature 128, was identified in the surveyed area (**Plate 190**). The cutting measured

26m in length and was approximately 8.2 wide. There was evidence for collapse along the edges of the cutting, particularly the south edge, as a result of erosion.

Plate 190: *Ware slip, Feature 128, looking northeast.*

6.5 North Ronaldsay, North Ronaldsay Pier

North Ronaldsay Pier (Canmore ID 3676) is located at the southwest tip of the island (NGR HY 75020 52233). To the southwest of the landward end of the pier a small area above the coastal section and outwith the sheep dyke, centred on NGR HY 74961 52264, was surveyed.

Plate 191: *Feature 92, looking south.*

The site was visited as part of the project launch in North Ronaldsay during April 2024. Recording of the site was undertaken by the ORCA team and local volunteers in September 2024.

6.5.1 Survey Results

A total of five kelp pits were identified in the survey area. These varied from 1.55m to 1.8m in diameter, with an average size of 1.63m. The pits had an average preserved depth of 0.10m. All the pits were classified as 'Definite', though much of their earthworks had eroded, the stonework was clearly visible, earth-fast and *in-situ* (**Plate 191**).

The kelp pits are shown in **Figure 18** and the data summarised in **Table 11**.

6.6 Sanday, Whale Geo

Whale Geo and Whale Point are located at the northwest point of Burness, Sanday at NGR HY 65106 45584. Kelp workings were identified on both sides of Whale Geo: at Whale Point to the south; and Holms of Ire to the north (Canmore ID 3484).

The site was visited as part of the project launch in Sanday during December 2023. Recording of the site was undertaken by the ORCA team and local volunteers in May 2024.

Plate 192: *Feature 09, looking southeast*

6.6.1 Survey Results

Holms of Ire

A total of eleven features related to the kelp industry were identified. Of these, seven were kelp pits and the remaining four features were tangle dykes. The distribution of the features is shown in **Figure 19** and the data summarised in **Table 12**. The area is also the site of a medieval chapel, St. Colm's (Canmore ID 3483), which is ruinous and barely visible due to heaped rubble and storm beach debris. These factors served to hamper the identification of the kelp workings and the process of differentiating them from other structures, beach material, stone-getting pits and intrusive investigations around the chapel site.

Plate 193: *Feature 01, looking southeast*

The seven kelp pits varied from 0.9m to 3.0m in diameter. Only one pit, Feature 09, was classified as 'Probable' (**Plate 192**). The kelp pits were seen as circular depressions in an uneven landscape. Feature 08, though still included in the data, is probably more likely to be an intrusive excavation rather than a kelp pit.

Plate 194: *Feature 31, looking southwest.*

The four features identified as tangle dykes were grouped together at the top of the coastal section, and all were orientated perpendicular to the shoreline. These varied in length from

3.4m to 7.8m with and average width of 0.9m. The dykes bounded the edge of the storm beach and often the seaward end could not be clearly defined within the debris. The dykes were seen as distinct linear features extending from the storm beach with two examples, Feature 1 and 4, containing orthostats. The two examples classified as 'Probable' were less obscured by stone debris (**Plate 193**).

Whale Point

A total of 39 features related to the kelp industry were identified. Of these, 36 were kelp pits and the remaining three features were tangle dykes. The distribution of the features is shown in **Figure 20** and the data summarised in **Table 13**. The features were concentrated along the east side of the Point. The coastal section along this side was lower and less steep than that on the west side, and the rocky foreshore extended further into the sea.

Plate 195: *Feature 29, looking southeast*

The kelp pits varied from 0.8m to 2.7m in diameter. Though the ground surface sloped down towards the coastal section throughout the site, the incline was fairly gentle and even and, therefore, the kelp pits were fairly well defined as circular depressions in the ground surface. The stone lining was not identified in any of the examples, however, and the majority have been classified as 'Possible'. The three examples classified as 'Probable' were recorded as such on the basis of a clear, circular edge defined by a break in the grass covering (**Plate 194**).

The three structures identified as tangle dykes were distributed fairly evenly across the site, intermingled with the kelp pits. All three were oriented parallel to the coastal section. The dykes varied in length from 2.9m to 6.1m with an average width of 0.9m. None of the tangle dykes were preserved as upstanding structures, all three being discrete linear features of earth-fast stones (**Plate 195**).

6.7 Sanday, Whitemill Bay

Whitemill Bay is located at the northeast point of Burness, Sanday. The kelp workings were identified at the west end of the Bay, close to The Riv, at NGR HY 68581 46637.

The site had initially been subject to a walkover survey as part of the NILP scoping report in 2016. The site was again visited as part of the project launch in Sanday during December 2023. Recording of the site was undertaken by the ORCA team and local volunteers in May 2024.

Plate 196: *Feature 01, looking south.*

6.7.1 Survey Results

The NILP Historic Environment Study had identified Whitemill Bay as a site with 'a large number of remains associated with the kelp industry. The remains consist of a range of linear and sub-circular earthworks, standing structures and the footing of structures visible as earthfast stones.' (Barton *et al*. 2017: 131). The site visit in December 2023 failed to identify any of these features which had been interpreted as the remains of kelp pits and tangle dykes.

The survey undertaken in May 2024 identified a total of six kelp working features: three tangle dykes; and three kelp pits. All of these were classified as 'Possible'. The tangle dykes were seen as low linear earthworks containing earth-fast stones (**Plate 196**) in an area essentially devoid of stone material visible in the grass covering and topsoil. The tangle dykes formed a single group, parallel to each other and perpendicular to the coastal section, though this was located approximately 70m to the north. This distance from the shore was greater than that for tangle dykes recorded at other sites. The tangle dykes varied in length from 7.6m and 8.4m with an average width of 1.18m. The slightly larger size if these dykes compared to examples

at other sites in probably due the features appearing as earthworks. The collapse of stone material from the dykes has been covered by wind-blown sand creating a feature which encapsulates both the *in-situ* constituents and the spread of debris around the original structure.

Plate 197: *Feature 05, looking south.*

The kelp pits varied from 1.85m to 2.9m in diameter and were visible as circular depressions in the fairly even ground surface. The pits were devoid of the variation in vegetation cover seen in other examples and there was no evidence for a stone lining (**Plate 197**).

The distribution of the features is shown in **Figure 21** and the data summarised in **Table 14**.

6.8 Stronsay, Grice Ness

Grice Ness is located at the head of a peninsula on the east coast of Stronsay. The kelp workings (Canmore ID 3300) run along the coast from NGR HY 66992 128630, in the north, to HY 67078 28102, on the south shore.

The site was visited as part of the project launch in Stronsay during November 2023. Recording of the site was undertaken by the ORCA team and local volunteers in May 2024.

6.8.1 Survey Results

A total of 76 features related to the processing of kelp were identified. Of these, were 25 kelp pits and 51 were tangle dykes. The distribution of the features is shown in **Figure 22** and the data summarised in **Table 15**. The kelp workings formed four discrete groups, with two or three outliers: landward of Charlie's Taing; north and east of Grice Ness chambered cairn; south of the cairn; and the east edge of Sandy Geo. The largest group is that located to the north and east of the chambered cairn. All the groups are associated with large, flat areas of rocky foreshores. There was one area of rocky foreshore, on the south shore, where kelp workings were noticeably absent with the exception of one 'Possible' pit (Feature 72). Here, the coastal edge was nearly vertical, which would have hampered the task of bringing kelp

and tangles ashore, and the ground surface inland of the coastal section was very uneven, with some evidence for small-scale quarrying.

Plate 198: *Kelp pit (Feature 41), looking west.*

Plate 199: *Tangle dyke (Feature 19), looking west with further tangle dykes (Features 14 to 18) in the background.*

Kelp Pits

During the survey at Grice Ness only the diameter of kelp pits was recorded. Their size ranged from 1.75m to 3.1m in diameter, with the average diameter being 2.4m. Seven of the kelp pits were classified as 'Possible' and all of these were located close to the ends of the spread of features, and all five kelp pits identified on the east edge of Sandy Geo were considered as 'Possible'.

The kelp pits were seen as circular depressions within a generally flat ground surface. None of the identified pits bore visible signs of any stone lining but those considered as 'Definite' or 'Probable' usually exhibited a clear, sunken edge (**Plate 198**).

Tangle Dykes

A total of 51 tangle dykes were identified. The location of the features is shown in **Figure 22** and the data summarised in **Table 15.2**.

The tangle dykes varied in length from 1.10m to 8.25m, with an average length of 3.82m. They had an average width of 1.2m in width with a height varying from 0.12m to 0.55. The variation in length and height can generally be attributed to truncation through erosion and the storm beach partially obscuring the structures. The dykes were preserved as linear stone-built features (**Plate 199**) within which distinct courses could occasionally be identified.

6.9 Stronsay, Point of Cumley Fish-Gut Processing Plant

with contributions by Ian Cooper

The remains of the former fish-gut processing plant are located on the on the north shore of the Point of Cumley, to the south Whitehall Village, at NGR HY 65525 27679. The remains comprise raised, concrete surfaces, upstanding ironwork structures and concrete walling (**Plate 200**).

Plate 200: *General view of the Stronsay fish-gut processing plant, looking southeast, with concrete walling (right), iron features (left of centre) and a tank (extreme left). The machinery on the left is a stone crusher and is a much-later addition, unrelated to the activities of the plant.*

6.9.1 Historical Background

The application to build a plant for processing fish-guts at Hunton was originally submitted in 1924 and discussed at a meeting of the North Isles District Committee in December of that year (Orkney Herald, 17 December 1924). The applicant was James M. Davidson of Glasgow, who owned a number of such plants across the country, and the meeting noted that such a facility would be of great advantage to the itinerant fish-curers who came to the island during the herring season. A number of objections were raised due to concerns that the work may result in the contamination of the water supply to Whitehall Village and the likely unpleasant odour and products which might be a nuisance to the residents.

Plate 201: *A closer view of the plant showing the walling and the opening providing access to the internal areas. The northwest edge of raised concrete platform is visible in the foreground.*

An amended application was considered and granted at the following meeting in February 1925, with the proposed site now located closer to the Point of Cumley, moving the site away from the main road and allowing the site drainage to be connected directly to the sea (Orkney Herald, 4 February 1925). The activities of the factory were to be monitored by Dr Bannerman, the Medical Officer of Health, who was granted the power to halt the plant's operations if he was dissatisfied with eh manufacturing processes or felt that the work did not reduce possible nuisance. The plant was coal-powered, as evidenced by a newspaper announcement noting that a schooner from Leith, which brought coal to the factory was remaining at Stronsay to act as a coal hulk for the duration of the herring season (Shetland Times, 11 June 1927).

The plant sought to use fish offal to manufacture additional products and manure. The Whitehall harbourmaster's journal records the last export of fish offal from Stronsay to have taken place on 25 September 1925 and comprised 177 barrels. The first export from the plant is recorded on 31 October 1925 when the SS Silversprings conveyed 122 barrels of herring oil. This was followed by 15 barrels of fish oil on 13 August 1926, 530 barrels on 26 September and 80 barrels, along with 192 tons of fish manure, on 26 November. An advert for herring guano from the factory gives a price of £5 per ton and notes the composition of the manure

as being 24.4% ammonia, 17% phosphates and 31% salt (Orkney Herald, 20 October 1926). As well as processing the offal from herring landed in Stronsay, sillocks (young coalfish) were also imported from other islands for processing, with the winter of 1927/1928 being particularly busy. This may be to mitigate the seasonal nature of the herring catch and it is highly likely that other fish caught locally would also have been processed at the plant. A newspaper report from 1927 noted that large quantities of sillocks were being fished at the New Pier, Stromness and the catch would be shipped to Stronsay (Orkney Herald, 14 December 1927).

Plate 202: *The northeast corner of the concrete platform, looking northwest, with the tank in the background and the iron girder-arch to the southwest (left). The photograph also shows two of the low buttresses which are interspaced around the open sides of the platform. These two examples can also be identified on a photograph of the plant dating from the late 1930s.*

The processing plant was built at a time when the herring industry was already in decline. The years immediately following the Second World War saw a significant rise in the whitefish industry and technological developments that led to fewer, more efficient vessels. Both of these significantly reduced the herring industry. The Stronsay processing plant was put up for sale in May 1947. The advert for its sale described the site as being two acres in size and comprising a large, corrugated iron building (Orkney Herald, 10 June 1947).

6.9.2 Site Description

The remains of the plant are orientated northwest-southeast and comprise a raised, concrete platform, upstanding ironwork structures and concrete walling (**Figure 23**).

The concrete walling forms a range, orientated northwest-southeast, sub-divided into four rectangular areas, possibly rooms. This measures 44.3m by 6.7m overall with the height of the walls varying from approximately 0.8m to 1.75m above the surrounding ground level. The range forms the southwest edge of the site. The walls of the two areas to the northwest of the centre generally have the higher walling, and the two rooms to the southeast are slightly longer in length. Each of the four areas can be accessed individually through a gap in the northeast walling, with the area directly southeast of the centreline having two gaps. These individual

areas are not interconnected in any way with no interlinking passages. There are external, sub-rectangular buttress against the southwest wall of the area immediately northwest of the centre, and the area to the southeast of this has similar buttress on the northeast wall between the two accessways.

Plate 203: *Detail view of the upright iron structures within the interior of the northeast building, looking west. In the right foreground is ana example of a concrete machine-base with iron securing rods. Another example is visible between the two iron girders on the left.*

Plate 204: *General view of the southeast edge of the plant showing the open-ended concrete structure outwith the raised platform area and the earth-fast concrete blocks partially obscured by vegetation.*

The raised concrete platform measures approximately 45m by 18m, and a maximum height of 0.8m above the surrounding ground level (**Plate 201**). The platform is an uneven L-shape in plan and forms the footprint of the site to the northeast of the range formed by the concrete walling. There are a number of low, concrete buttresses around the external edge of the platform (**Plate 202**) along with a number of features across its surface. These include a concrete tank located close to its northeast edge, measuring 2.9m by 2.3m, and a series of upright iron structures. All of these are constructed of elements resembling girders or joists, I-shaped in cross-section. One of these has a cross-beam to form a square archway with the remainder being a line of three single elements in close proximity (**Plate 203**). The remaining surface features comprise concrete machine bases with iron fixing rods; square-cut apertures in rectangular patterns; and a small inspection pit.

A number of features related to the plant were identified outwith the concrete platform and the walled areas. The majority of these were located immediately to the southeast of the platform area and comprised a discrete area of earth-fast concrete blocks to the southwest of a rectangular concrete structure open at its northeast end (**Plate 204**). There is also a concrete, open-topped water tank located on the coastal edge approximately 450m south of the plant, below the farm at Hunton. This was fed all year round by freshwater springs in the area, and the water piped to the factory. Local knowledge asserts that, even though the tank is below the level of the plant, the system was gravity-fed and no pump was used to move water from the tank to the works. It is possible that there may have been a deep sump at the factory into which the water siphoned.

Given the fairly utilitarian nature of the remaining structures, the interpretation of the physical remains of the plant is difficult. The Stronsay Heritage Centre possesses two photographs which show the plant in the late 1930s, and some tentative correlations can be made.

6.10 Westray, The Links

Plate 205: *General view of the tangle dykes at The Links looking northeast towards North Haven.*

The Links site is located in the northeast of Westray, on the south shore of Rack Wick, close to Pierowall, the main settlement. The kelp workings (Canmore ID 295186) run along the coast from NGR HY 43998 50043 to HY 44423 50383 (**Plate 205**). Further kelp workings are visible to the west at Rackwick Bow, Narr Ness and Grobust but these were not recorded as part of the current survey.

The site was visited as part of the project launch in Westray during December 2023. Recording of the site was undertaken by the ORCA team and local volunteers in October 2024.

6.10.1 Historical Background

Tangle operations for alginate began in 1966. These stared at Grobust and gradually moved along to coast as far as North Haven. In its heyday of the 1970s and 80s, the tangle operations along this stretch of coastline often produced 400-500 tons per year. By the later 1990s, the yearly harvest was down to approximately 100tons. Production ceased in 1998 with the last season being documented in German magazine.

Plate 206: *Feature 31 at The Links showing the extensive spread of stone and the shallow-sided 'cut' into the ground surface.*

6.10.2 Survey Results

A total of 42 features were identified along the coastal edge at The Links. Of these, two were nousts (Feature 41 and 42) and two (Feature 26 and 31) were extensive spreads of stone material. These two features may have obscured further tangle dykes or other features associated with kelp working. Feature 31 was associated with a U-shaped cut in the ground surface (**Plate 206**) and it is possible that this was a ware slip, similar to the one identified in North Ronaldsay, where kelp could be brought inland from the shore. As such this may be evidence of an earlier phase of kelp working and may be associated with the burning of kelp

in pits during the nineteenth century. The distribution of the features is shown in **Figure 24** and the data summarised in **Table 16**.

Plate 207: *Feature 36 (tangle dyke) at The Links, looking north.*

Plate 208: *Tangle dyke (Feature 8), looking east, showing rebuilt section (centre left).*

Tangle Dykes

A total of 37 tangle dykes were identified. These varied in length from 3.8m to 22.4m, with an average length of 9.41m. They had an average width of 0.67m with a height varying from 0.35m to 0.9. The variation in length can principally be attributed to the storm beach and extensive scrub vegetation partially obscuring the structures. The dykes were preserved as linear stone-built features (**Plate 207**) within which distinct courses could occasionally be identified. The dykes at The Links were generally in a better state of preservation, and more consistently so. Their usage until comparatively recently meant that repairs with timber inserts had been undertaken (Feature 39) and the complete re-build of sections of some dykes was clearly visible (Feature 8, 12, 21 and 23) (**Plate 208**).

6.11 Westray, Aikerness

Aikerness forms the northeastern extent of Westray. The kelp workings (Canmore ID 294784) run along the coast from NGR HY 45971 52298 to HY 46100 52161 with those at the southeast end located within the Westray Airfield perimeter. The survey recorded the tangle dykes located at the northwest end of the features identified as part of the Canmore record and continued along the coast, with additional kelp working features being identified at Bow Head. The survey terminated at approximately HY 45930 52834.

The site was visited as part of the project launch in Westray during December 2023. Recording of the site was undertaken by the ORCA team and local volunteers in October 2024.

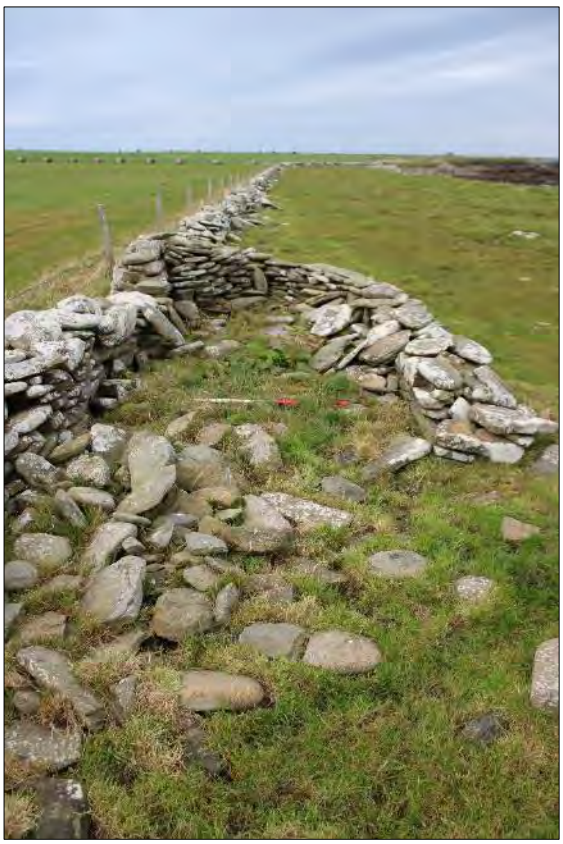

Plate 209: *'Boat-shaped' enclosure at Aikerness, Westray.*

6.11.1 Survey Results

A total of twenty features were identified along the coastal edge. One of the features, Feature 64, was elliptical structure butting against a boundary wall (**Plate 209**). This was similar to structures identified at Quarryhouse, Eday (see **Section 6.1.2** above) and Nether Breck, North Ronaldsay. The remaining nineteen features were all related to kelp working. The distribution of the features is shown in **Figure 25** and the data summarised in **Table 17**.

Plate 210: *Former kelp pit (Feature 51) filled with loose stone at Aikerness, Westray.*

Kelp Pits

A total of nine kelp pits were identified during the survey and these were all located on Bow Head. Their size ranged from 1.6m to 3.8m in diameter, with an average diameter of 2.6m. These had an average depth of 0.3m. Six of the kelp pits were classified as 'Probable' and the three largest were considered as 'Definite'. These three (Feature 61, 62 and 63) were also the furthest inland of the kelp pits identified. One example, Feature 51, appeared o have been deliberately backfilled with loose stone (**Plate 210**) but this was regarded as a kelp pit on the basis of the low bank around the circumference of the pit and the presence of stone beneath turf along the interior edge.

Tangle Dykes

A total of ten tangle dykes were identified. These varied in length from 3.7m to 12.2m, with an average length of 6.26m. They had an average width of 0.77m with a height varying from 0.3m to 0.65m. All the dykes were orientated perpendicular to the coastal section.

The tangle dykes formed three groupings. The group close to the airfield comprised four features including the longest example, Feature 45. This dyke, and its immediate neighbour were well-preserved with multiple courses of stonework, though both appeared to have been truncated at their landward (southwest) ends (**Plate 211**). The two remaining dykes were closer to the coastal edge and their seaward ends were obscured by the storm beach. Both

also had truncated landwards ends. This damage on all four dykes is probably due to the frequent presence of cattle in this field.

Plate 211: *Feature 45 (tangle dyke) at Aikerness, looking southeast, with a further tangle dyke (Feature 46) behind.*

Plate 212: *Feature 52 (tangle dyke) at Aikerness, looking north, with two tangle dykes (Feature 53 and 54) behind.*

On Bow Head were two smaller groups: one of four tangle dykes; and a pair of tangle dykes approximately 30m to the north. All six were close to the coastal edge resulting in the erosion of the seaward edge. This was quite clear as none were obscured by storm beach

constituents. All were generally more denuded than the examples recorded close to the airfield with one example, Feature 52, being partially demolished to create a gap for farm vehicle access (**Plate 212**).

7 Art and Archaeology - Soundwalking

by Amy Beeston

As part of the From Peat Spade to Tangle Trade industrial heritage project, we held a series of four free workshops exploring the sounds of industrial spaces in Orkney's North Isles. To meet the wider project aims of celebrating, researching and investigating the places and the people of Orkney's industrial heritage in the North Isles, artist Amy Beeston and archaeologist Ben Elliot were joined by 23 islanders in Shapinsay, Stronsay, Sanday and North Ronaldsay to walk, to listen and to discuss the present, past and future soundscapes of our islands.

Plate 213: *Participants on a soundwalk, Sanday.*

All four workshops included the key elements of soundwalking, listening and discussion, but were tailored in advance for each specific island context by means of collaborative discussion and accompanied site visits with local heritage experts who were recruited as volunteers to the project (**Plate 213**). In each case, we hoped for the best-case scenario: a fine weather day allowing the group to remain outdoors for the whole session. However, it being the autumn storm season, we also made contingency plans for bad weather and set up a streambox in advance (**Plate 214**). The streambox works similarly to a webcam and broadcasts the soundscape (rather than the picture) of the surrounding environment, ensuring that the surrounding local sounds could be heard inside the workshop venue, should the weather prove too cold, wet or windy to be outdoors.

Plate 214: *The stream box (bottom of picture) set up at the foghorn, North Ronaldsay.*

Our sessions began outside with walking segments interspersed with discussions about listening, the variability in our hearing acuity and our overarching tendency to name the sound sources present in the environment. We discussed sound categorisation strategies used in soundscape ecology research and learned to identify geophonic, biophonic, anthropophonic and technophonic sound sources. We used an assessment technique from the soundscape regulatory framework which asks a group of people to individually rate the surrounding auditory environment on a set of eight attributes: pleasant, annoying, eventful, uneventful, vibrant, chaotic, calm and monotonous. The varied responses in the group highlighted the subjective nature of sonic experience, and made for some very interesting debate about what we could and couldn't hear, what sounds we felt belonged in or were missing from a place, and about the successes and failures of the assessment regimes themselves.

Plate 215: *Workshop activities included audio livestreams, identifying sound sources and variability in our perception of sound, soundwalks, discussing impacts of anthropogenic noise and investigating group methods for soundscape assessment.*

Each island context brought up new perspectives of our industrial heritage that are not often met in larger urban settings where the focus might have been on mills, forges and factories. In Shapinsay we first spoke about the changes in the sounds of farming through the generations, and about the ongoing electrification of vehicles used on the island. This

discussion continued throughout the isles. In Stronsay we also discussed the sounds of the processes that would have been associated with the herring trade, and the sheer number of people living nearby one another. In Sanday we spoke of textile work and noted too how the sounds of transport (particularly from the airfield) act as a central clock for the island. In North Ronaldsay, we discussed the sounds of the kelp and seaweed industries, and the changes in the nighttime soundscape due to the electrification of the island itself.

The soundwalks were well received across the four North Isles, and the format of the workshop proved to be an engaging experience where the islanders, as experts of their local soundscape, could share their knowledge and experience intergenerationally (**Plate 215**). The discussion was always lively and informative, sharing memories of past industries, appreciating the present sonic environment, and imagining the future soundscapes of our islands.

8 Art and Archaeology - Graffiti

8.1 Papa Westray, Holland Farm

Building 6, Holland Farm is a range comprising three contemporary buildings (see **Section 5.5** above). The threshing mill (Building 6.3) and the stable (Building 6.2) are separated by an interior partition wall, and the threshing machine itself is contained with a series of timber partitions. All of these have graffiti across their upright faces (**Plate 216**), comprising initials, names, dates, outline drawings and geometric patterns.

Plate 216: *Graffiti on an interior wall at Holland Farm, Papa Westray.*

The graffiti on the dividing wall is incised and the majority of it takes the form of initials (**Plate 217**). One complete name was identified, John Drever Burgess of South Via, Papa Westray. The 1921 Census Data records a two month-old individual of this name at South Via. Other graffiti includes a stylised silhouette of a human figure (**Plate 218**) and a pattern comprising

circular motifs which is repeated multiple times (**Plate 219**). This pattern is very similar to the decoration of a seventh-/eighth-century cross slab recovered from the nearby site of St Boniface's Church in 1920. This artefact would have been well-known at the time in Papa Westray and the graffiti may have been a deliberate recreation of the design.

Plate 217: *Detail of incised initials on the dividing wall inside Building 6, Holland Farm, Papa Westray.*

Plate 218: *Detail of graffiti Building 6, Holland Farm, Papa Westray including a stylised silhouette of a person.*

Plate 219: *Detail of the circular geometric motif Building 6, Holland Farm, Papa Westray.*

Plate 220: *Detail of tally marks in pencil on the threshing machine, Holland Farm, Papa Westray.*

Plate 221: *Detail of incised tally marks, Holland Farm, Papa Westray.*

The graffiti on the partitions and the threshing machine itself comprise tally marks and relate to the use of the machine. These would be used to maintain a running record and total of the sacks filled. The tallies are created using both pencil (**Plate 220**) and incision (**Plate 221**).

8.2 Sanday, Stumpo

Plate 222: *Detail of the graffiti on the corn threshing machine at Stumpo, Sanday.*

Stumpo is a farmstead in Burness, Sanday (NGR HY 66450 44473) comprising a mix of original and modern buildings and structures. A surviving east-west range of agricultural

structures to the north of the domestic building contain a large corn threshing machine and a smaller oat threshing machine. Both are predominately of timber construction and examples of graffiti were photographed during a site visit. All the graffiti was created using pencil.

The graffiti on the corn threshing machine comprised geometric patterns, drawings of ocean-going sailing vessels, simple sums, signatures and dates written in the numerical format DD/MM/YY (**Plate 221**). Some of this graffiti is of a fairly modern date. The graffiti on the oat threshing machine also comprises geometric patterns, signatures and dates which are probably fairly recent. There were also a number of tally marks and 'workings-out' (**Plate 222**), probably the number of sacks filled, which reflect the use of the machinery.

9 Community Engagement

9.1 Activities and Events

A total of 32 events were held across the North Isles of Orkney throughout the project.

A total of 132 people signed up to the project and the launch talks were attended by 95, with 29 islanders coming to the drop-in sessions the next day. Sites visits after the lunch events were attended by a further 11 islanders.

Lunch events were a chance to speak with islanders about the industrial sites and remains in each island and find out which ones they were interested in recording. Whist some industrial archaeology is listed in Canmore, much if it remains unrecorded. The input from islanders was key to identifying the industrial heritage and archaeology for each island.

Participatory mapping was used to capture industrial sites at the launch events. Large A0 maps of the island were annotated by the group during discussions after the talk. Canmore sites were discussed and new sites added. This formed the basis for deciding with the group which sites would benefit from detailed field survey.

Survey days were held on 8 islands for 2 to 3 days each.

The Art and Archaeology Sound workshops proved popular, with 23 people attending from 4 islands. Artist Amy Beeston led industrial heritage sounds walks with small groups.

Three schools were visited for in class workshops reaching 36 pupils.

In total there were 222 engagements by islanders across all events and workshops.

9.2 Participant Feedback

Participants who attended archaeological fieldwork activities gave the activities 8-10 out of 10. Importantly, all these participants agreed or strongly agreed that they had learnt something new about archaeology!

For those involved, the most memorable experiences were the talk in the Community Centre getting an overview of the island's industrial heritage in a local/national context, and discussion amongst group attending, and field visits

Training:

> "Learning to interpret what was still visible, relating it to what would have been visible in the past, how it would have been used and why it fell into disuse".

"all very interesting" "gave a lot of food for thought"

10, 8 attending archaeology fieldwork events

Most interesting:

Overview of the island's industrial heritage in a local/national context. Discussion amongst group attending.

Training: "Learning to interpret what was still visible, relating it to what would have been visible in the past, how it would have been used and why it fell into disuse".

really interesting and informative

talk in the Community Centre and field visits and work were all great

all very interesting and gave a lot of food for thought

10 Online Resource

Stage 3 of the project included the creation of an online resource (Bell & Lee, 2023), available to the public, to include details of the research and fieldwork undertaken by the ORCA team and local volunteers.

The online resource is hosted and maintained by the UHI Archaeology Institute (Archaeology Orkney - UHI Archaeology Institute) and will include details and results of the walkover and building surveys along with relevant photographs taken as part of the fieldwork and illustrations produced for this report. The project webpages are divided by island with links to the individual sites. In addition, general research themes from the project are included (agriculture, milling, kelping, herring fishing) to inform visitors and to provide a general background to the individual sites. Research undertaken by volunteers is also included as part of the project webpages covering:

- Kelping in North Ronaldsay;
- Bea Mill in Sanday;
- Fersness Quarry in Eday:
- Kelp exports from Stronsay.

11 Industrial Heritage Leaflet

Stage 3 of the project included the production of a leaflet, in both physical and digital formats, and available to the public (Bell & Lee, 2023). This summarises the important industrial themes across the North Isles and identifies key sites of industrial interest. This will provide a resource for visitors to the islands and raise awareness of Orkney's industrial heritage.

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13 Figures

ORCA Orkney Research Centre for Archaeology

Study Area

0 2 4 6 8 10 km

CRS: OSGB36 / British National Grid/ EPSG:27700

Figure 1: The North Isles		
Project Name: Industrial Heritage		
Project No: 996	Scale @A4 1:250,000	
Date: 01/2025	ID: OR01CB	Rev. 1.00

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CRS: OSGB36 / British National Grid/ EPSG:27700

Figure 2: Site Locations - Eday

Project Name: Industrial Heritage		
Project No: 996	Scale @A4 1:60,000	
Date: 01/2025	ID: OR01CB	Rev. 1.00

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CRS: OSGB36 / British National Grid/ EPSG:27700

Figure 3: Site Locations - North Ronaldsay

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CRS: OSGB36 / British National Grid/ EPSG:27700

Figure 4: Site Locations - Papa Westray		
Project Name: Industrial Heritage		
Project No: 996	Scale @A4 1:40,000	
Date: 01/2025	ID: OR01CB	Rev. 1.00

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Figure 5: Site Locations - Rousay		
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Project No: 996	Scale @A4 1:60,000	
Date: 01/2025	ID: OR01CB	Rev. 1.00

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CRS: OSGB36 / British National Grid/ EPSG:27700

Figure 6: Site Locations - Sanday		
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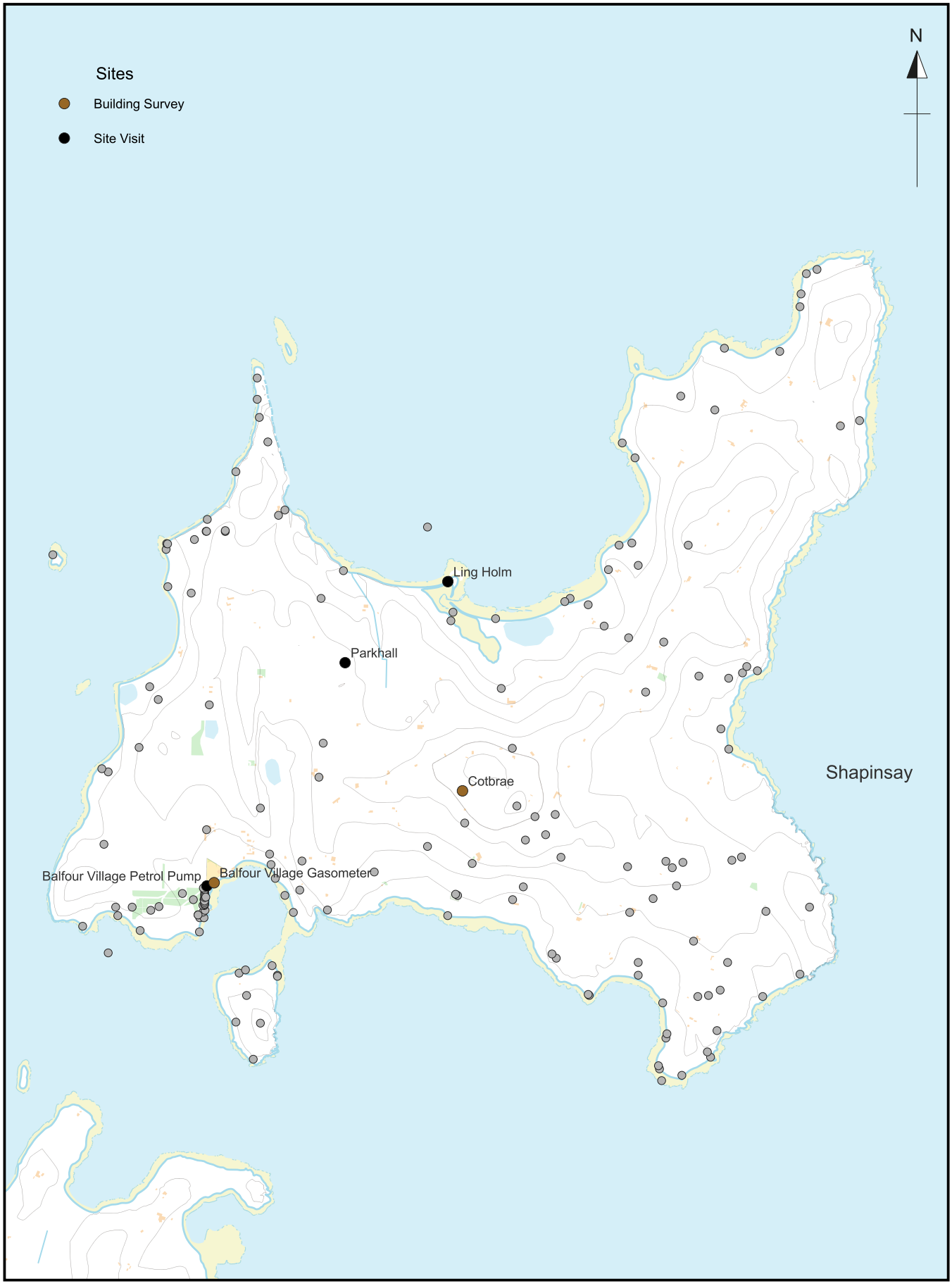

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Contains Ordnance Survey data ©Crown Copyright and database right (2025)

CRS: OSGB36 / British National Grid/ EPSG:27700

Figure 7: Site Locations - Shapinsay		
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Date: 01/2025	ID: OR01CB	Rev. 1.00

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CRS: OSGB36 / British National Grid/ EPSG:27700

Figure 8: Site Locations - Stronsay

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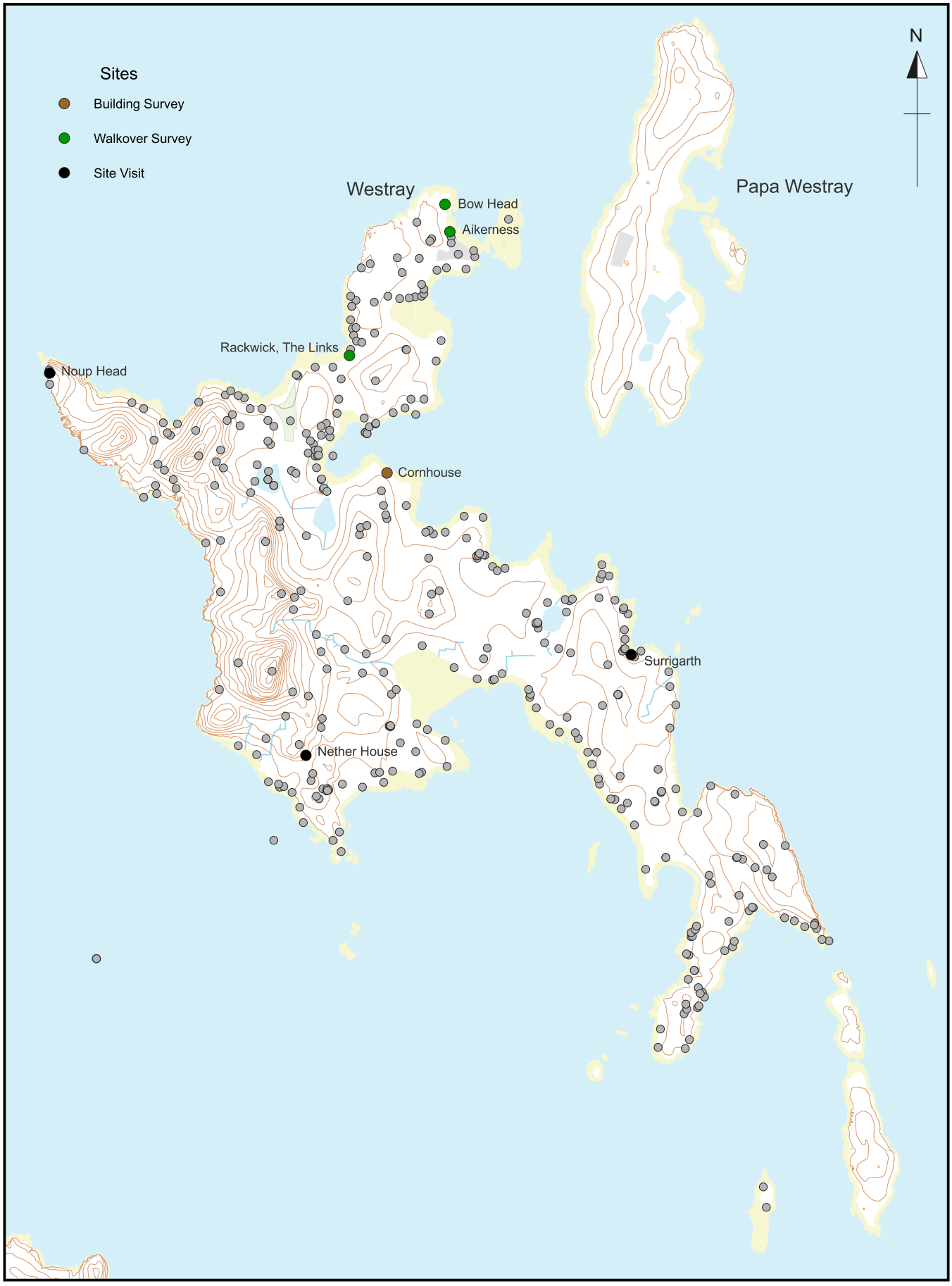

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CRS: OSGB36 / British National Grid/ EPSG:27700

Figure 9: Site Locations - Westray		
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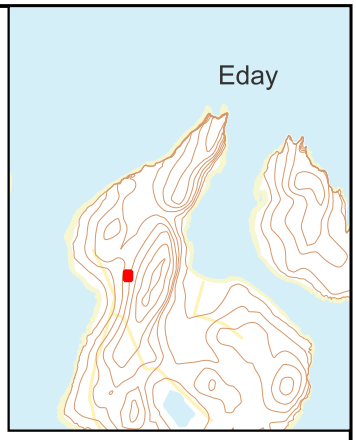

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Figure 10: Redhouse (Reidscastle), Eday

Project Name: Industrial Heritage		
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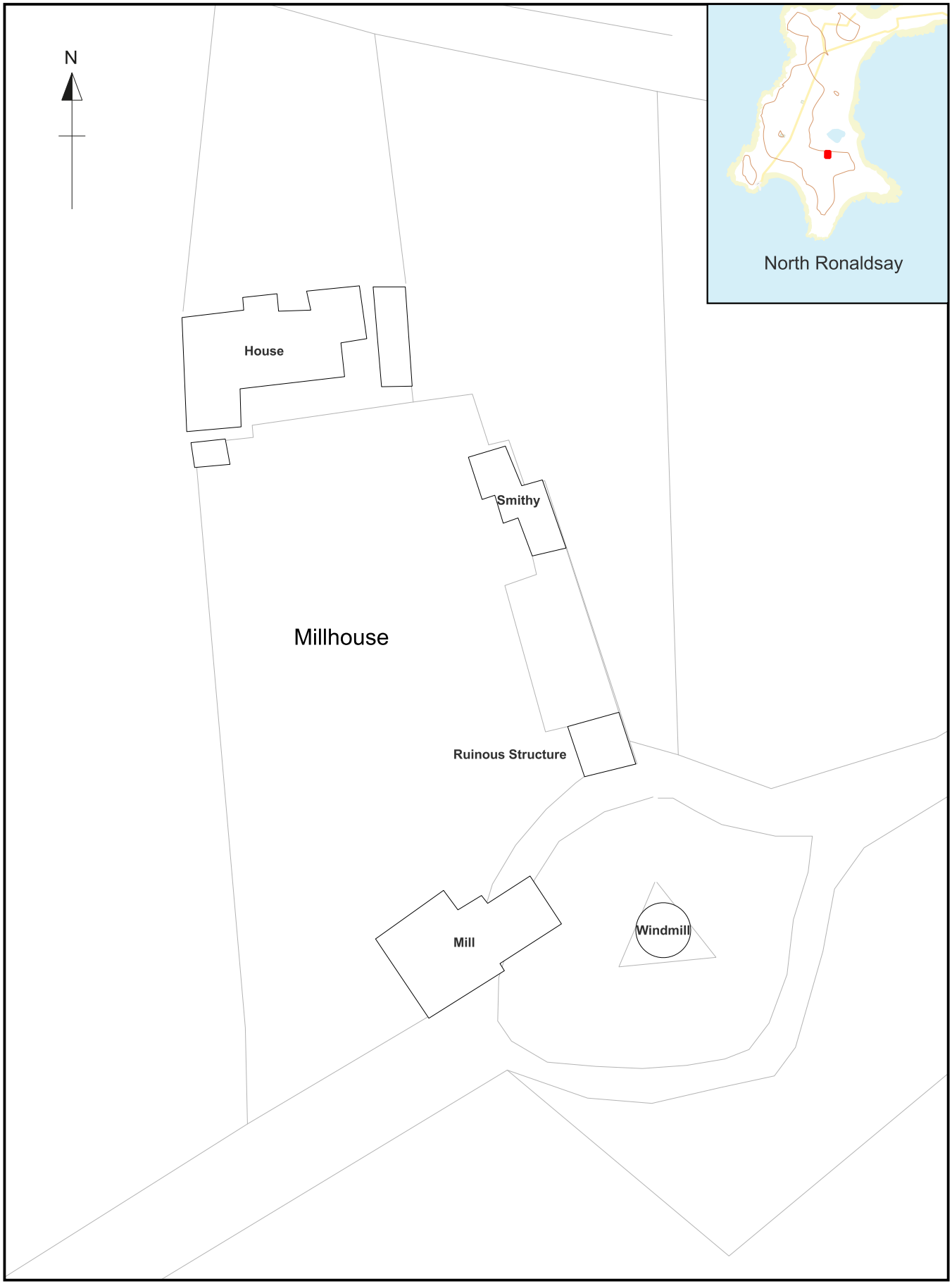

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Figure 11: Millhouse Corn and Meal Mills, North Ronaldsay

Project Name: Industrial Heritage		
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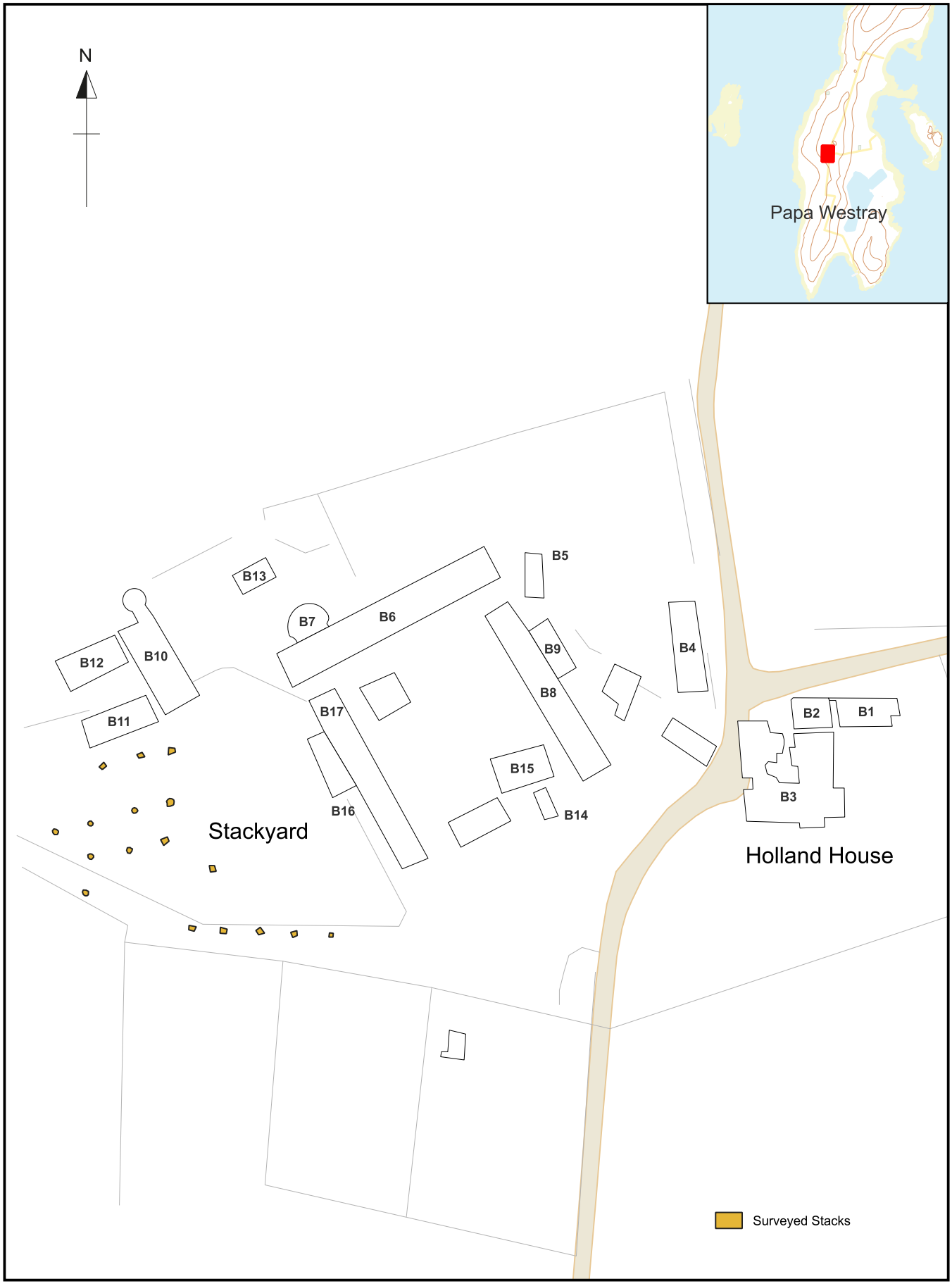

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Figure 12: Holland Farm, Papa Westray		
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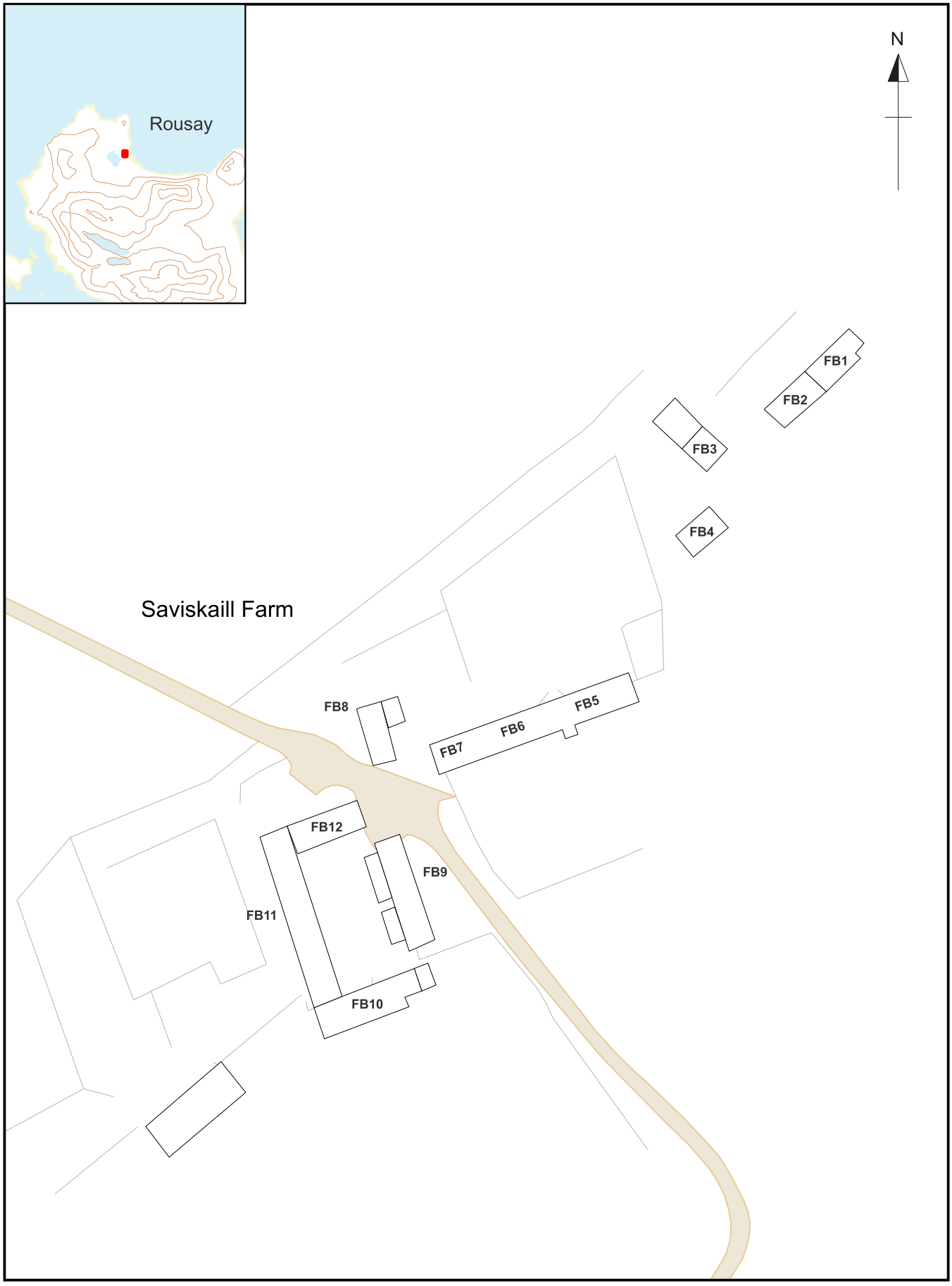

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Figure 13: Saviskaill Farm, Rousay

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Date: 02/2025	ID: OR01CB	Rev. 1.00

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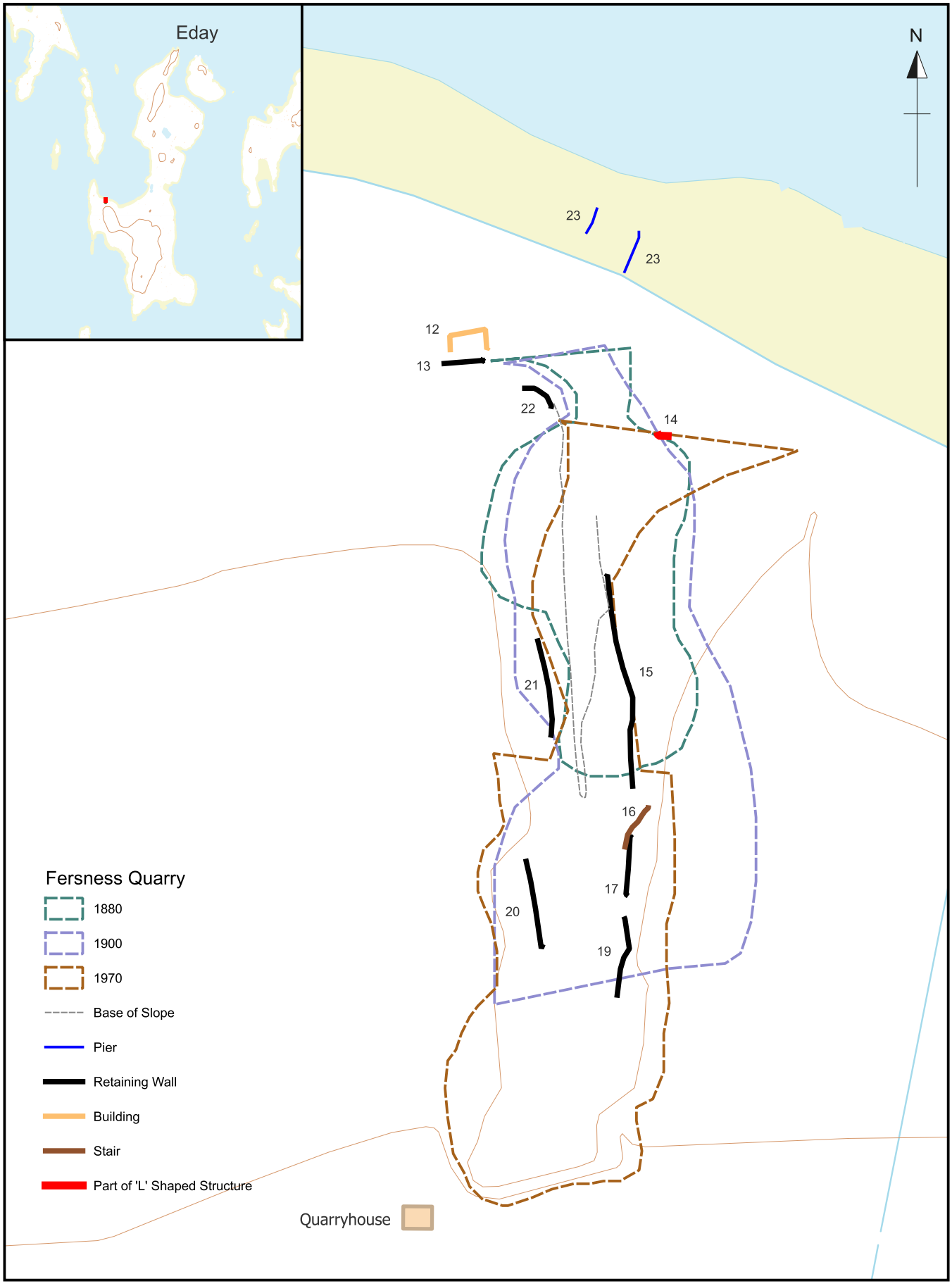

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Figure 14:Fersness Quarry, Eday

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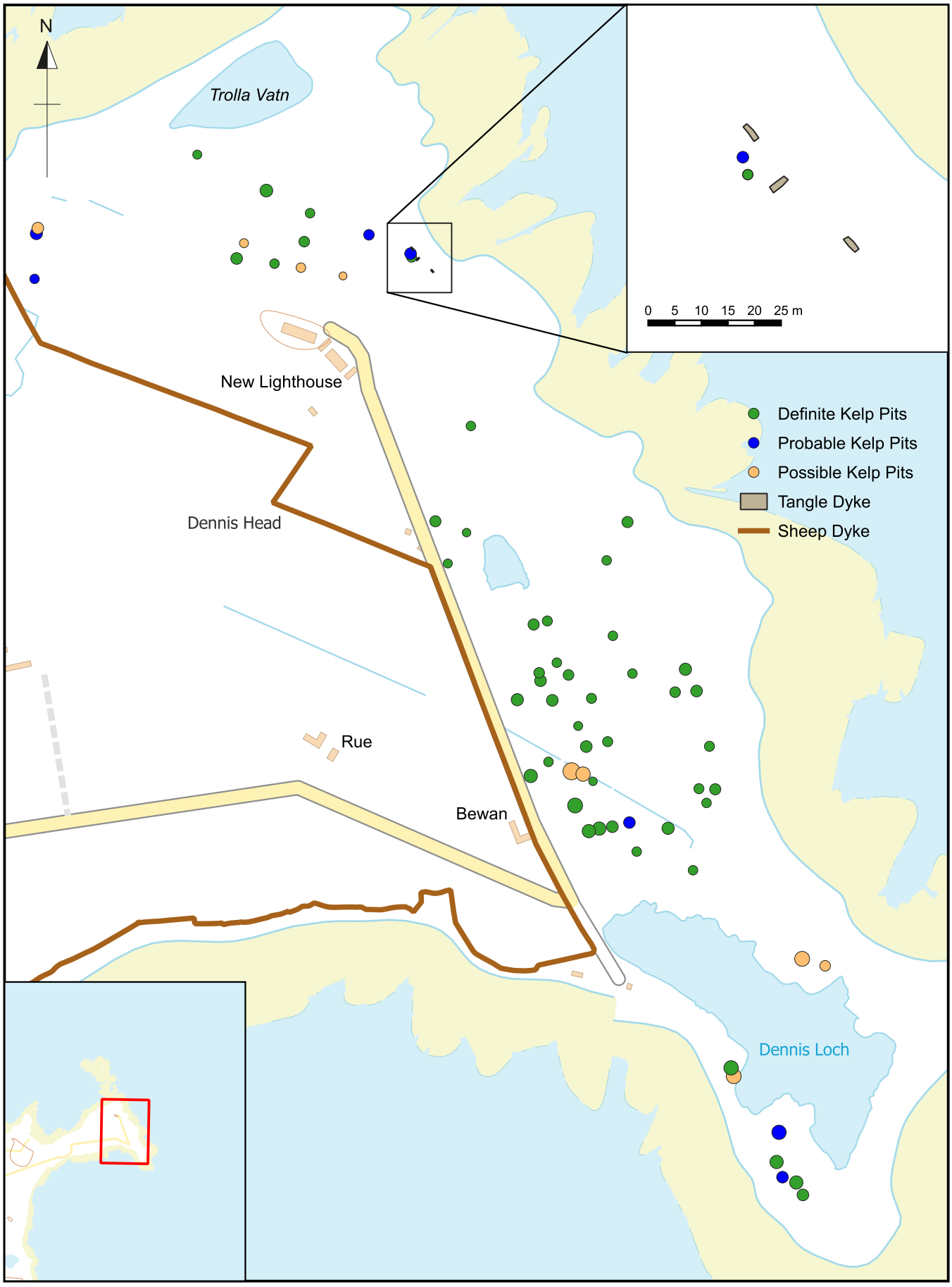

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Figure 15: Kelp workings at Dennis Head, North Ronaldsay		
Project Name: Industrial Heritage		
Project No: 996	Scale @A4 1:5,000	
Date: 02/2025	ID: OR01CB	Rev. 1.00

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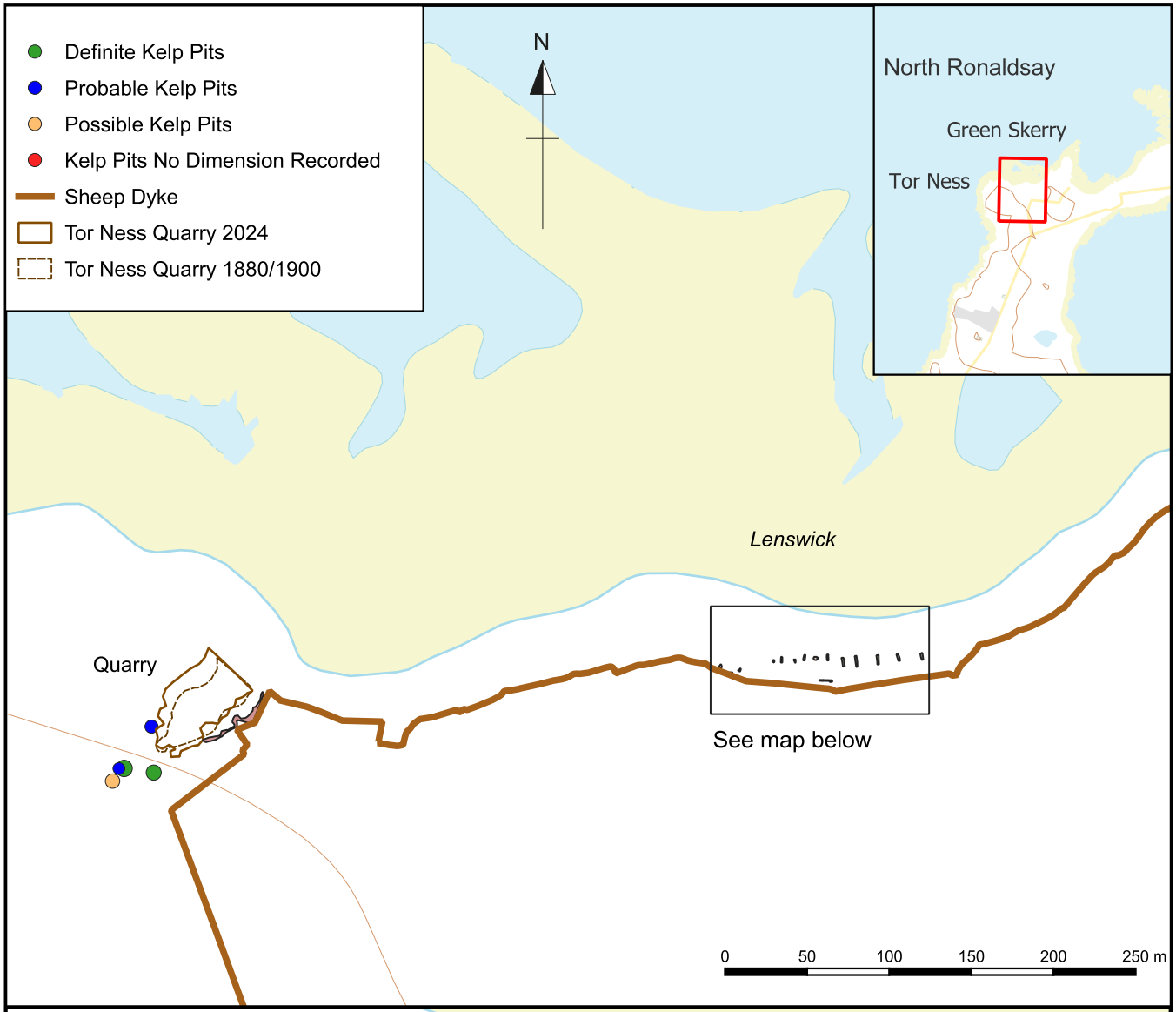

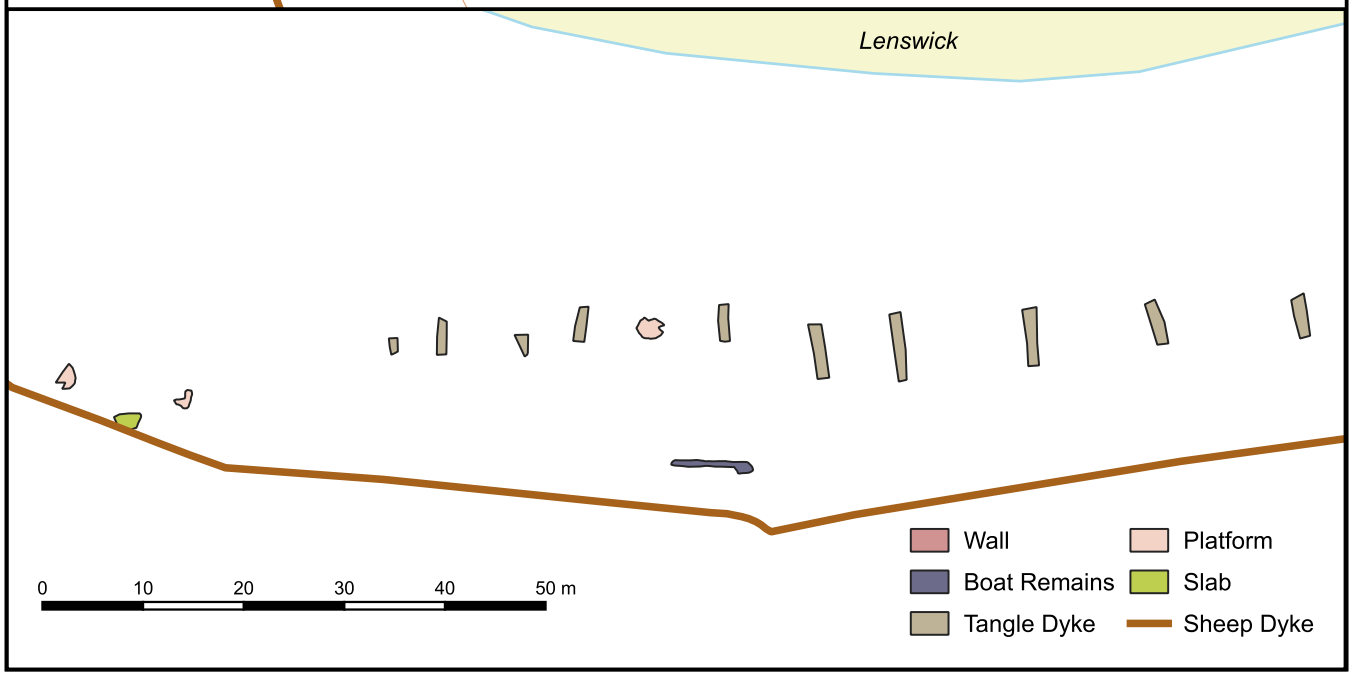

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Figure 16: Kelp workings at Lenswick and Tor Ness, North Ronaldsay

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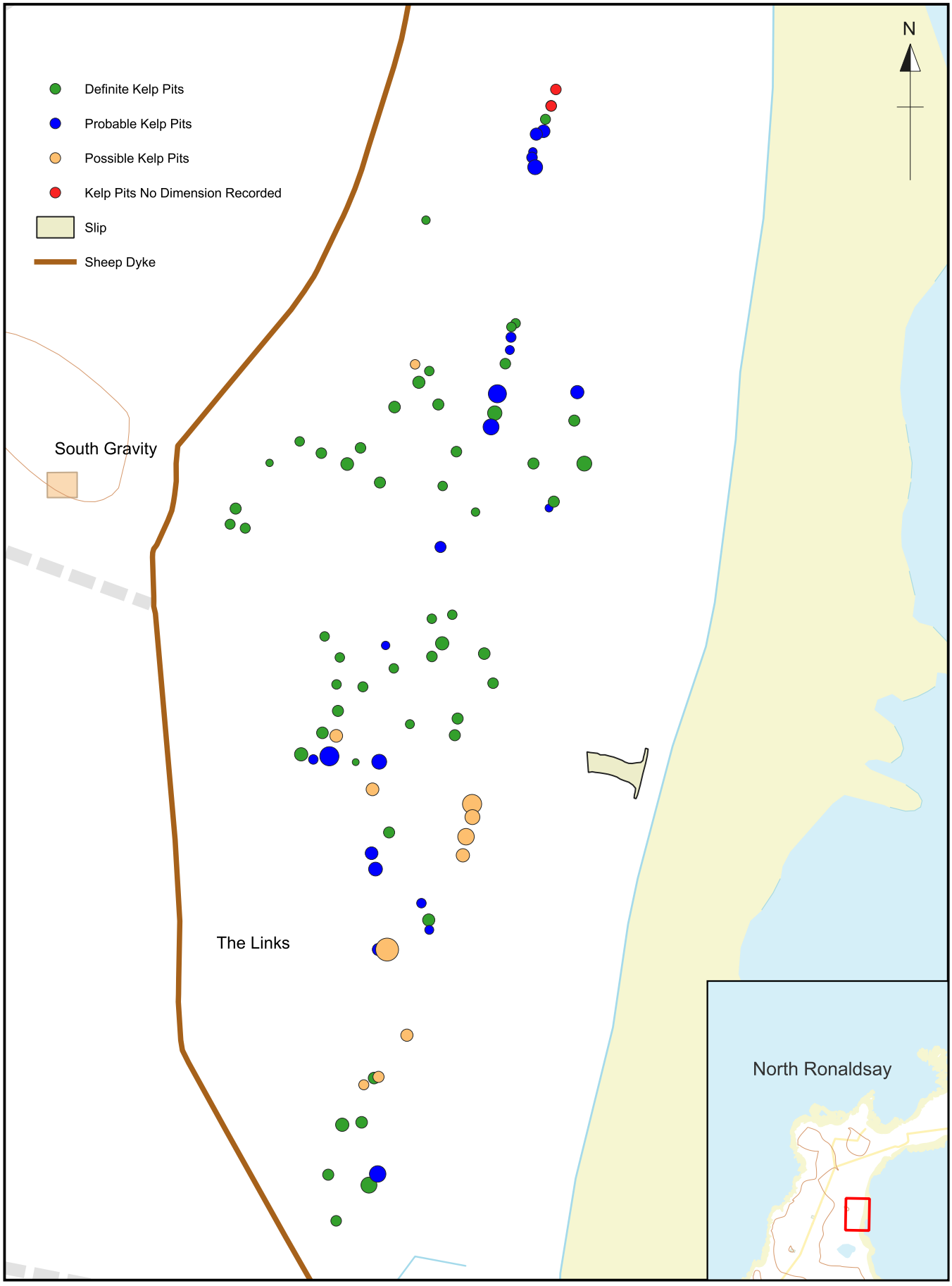

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Figure 17: Kelp workings at Linklet, North Ronaldsay

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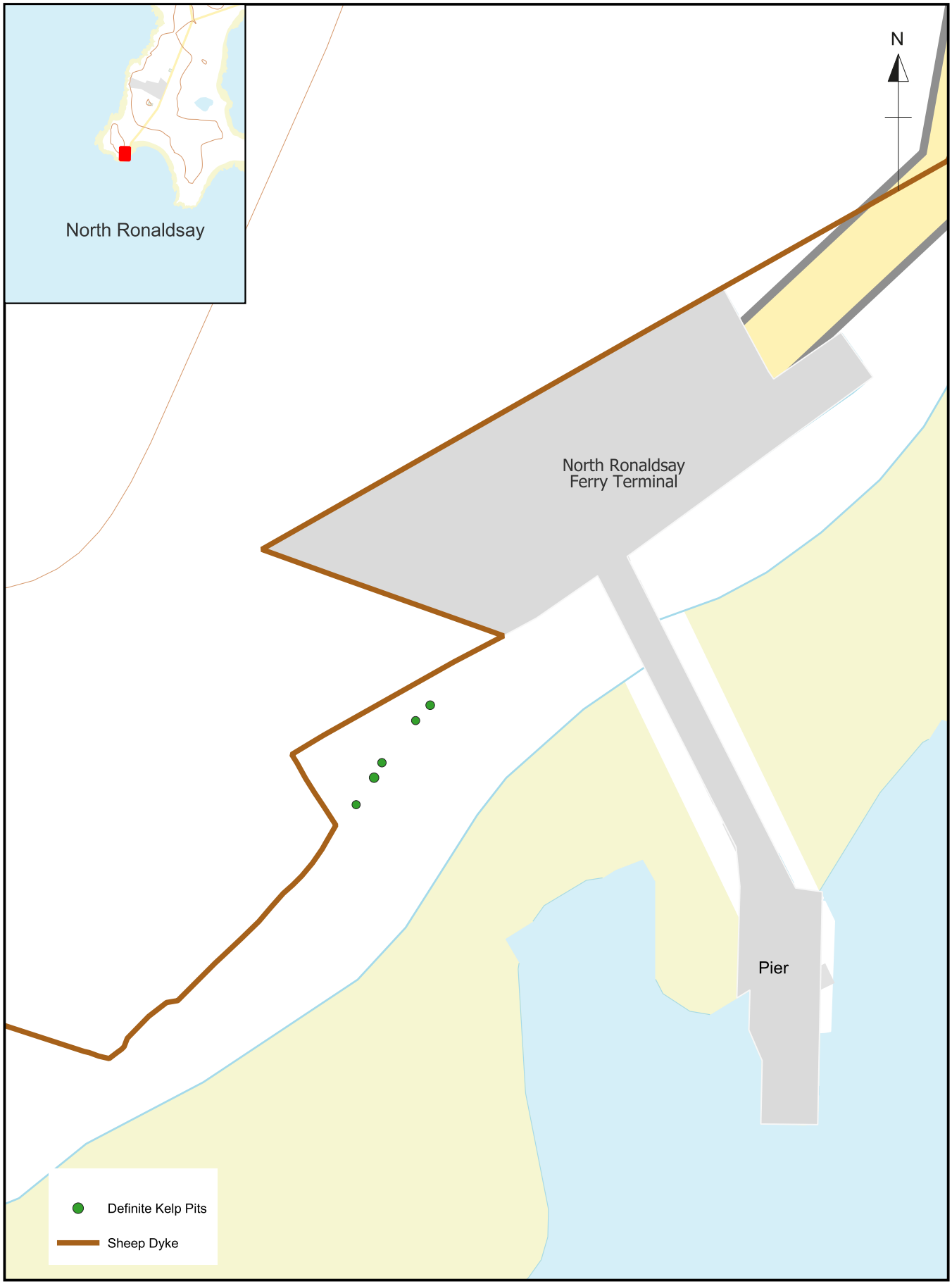

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Figure 18: Kelp workings at North Ronaldsay Pier, North Ronaldsay

Project Name: Industrial Heritage		
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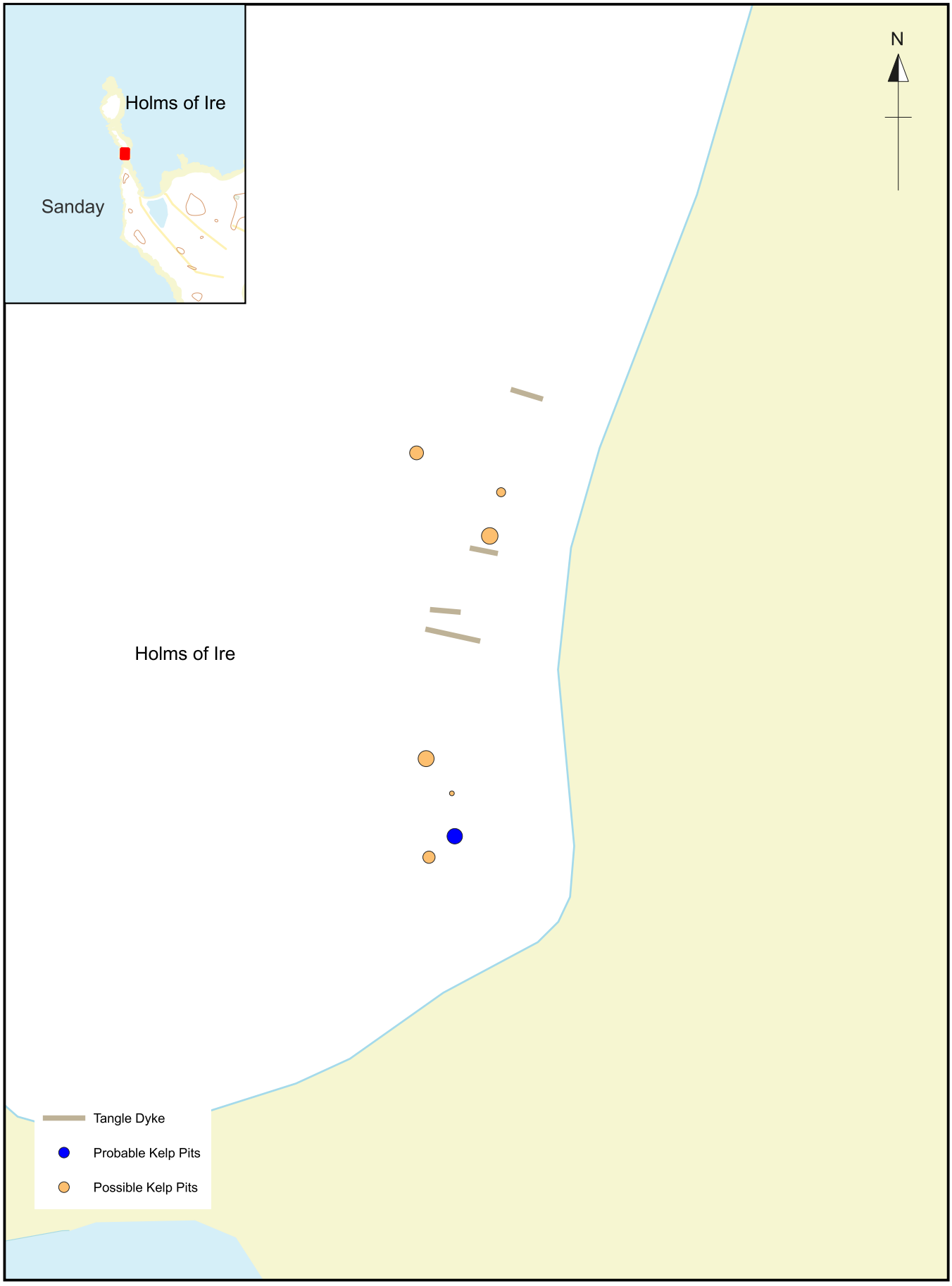

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Figure 19:Kelp workings at Holms of Ire, Sanday

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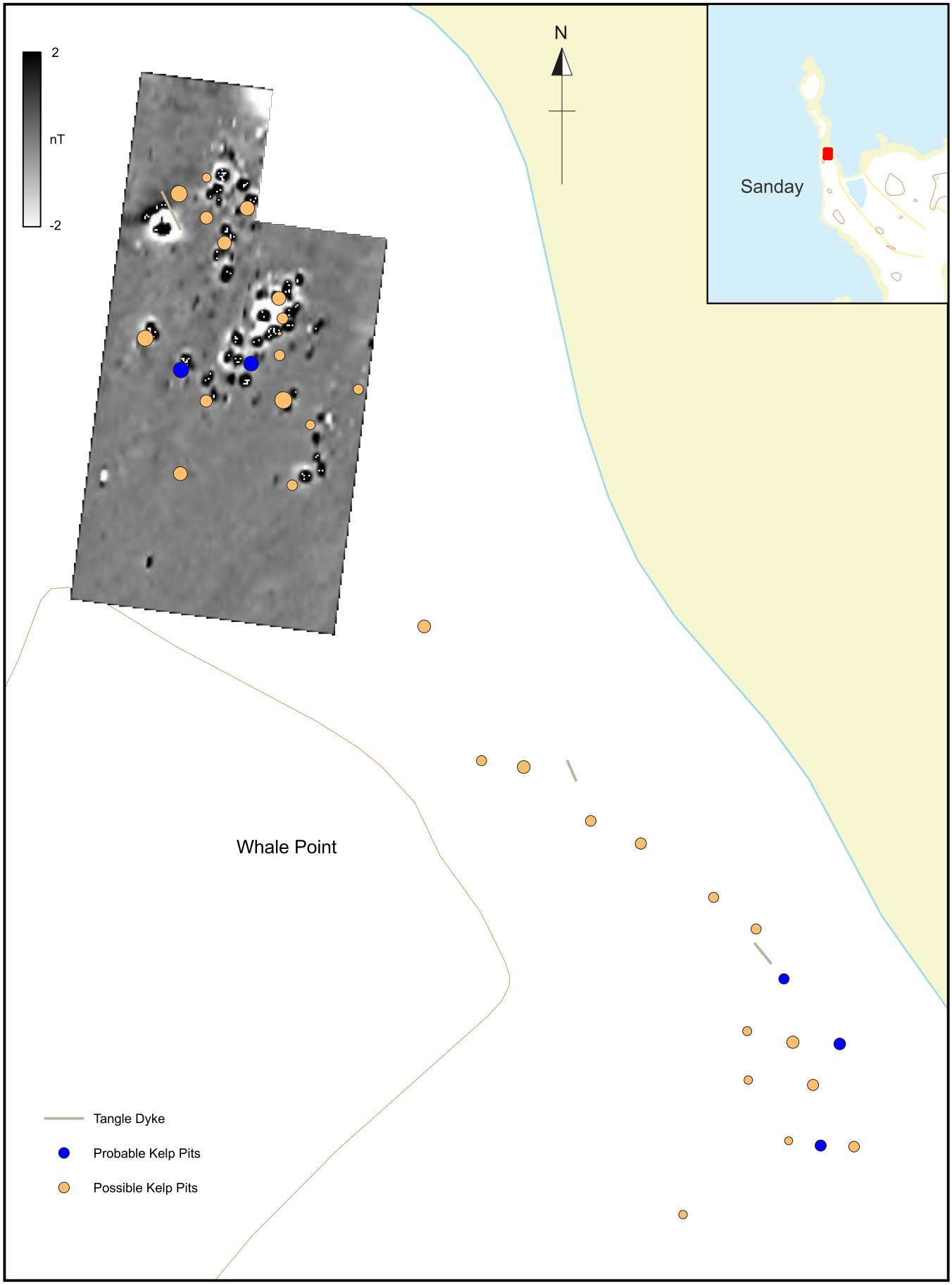

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Figure 20: Kelp workings at Whale Point, Sanday

Project Name: Industrial Heritage		
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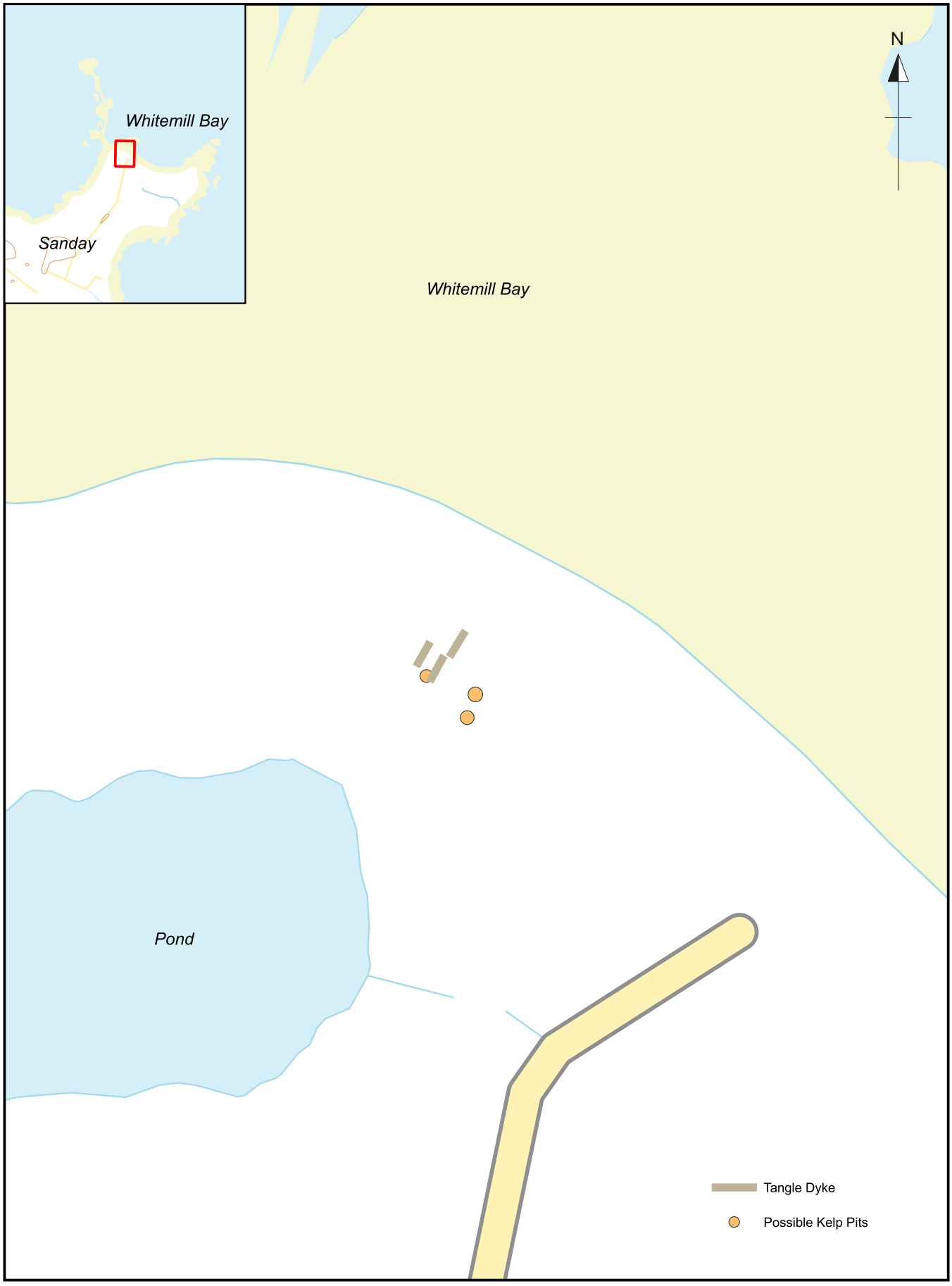
Date: 02/2025	ID: OR01CB	Rev. 1.00



ORCA Orkney Research Centre for Archaeology

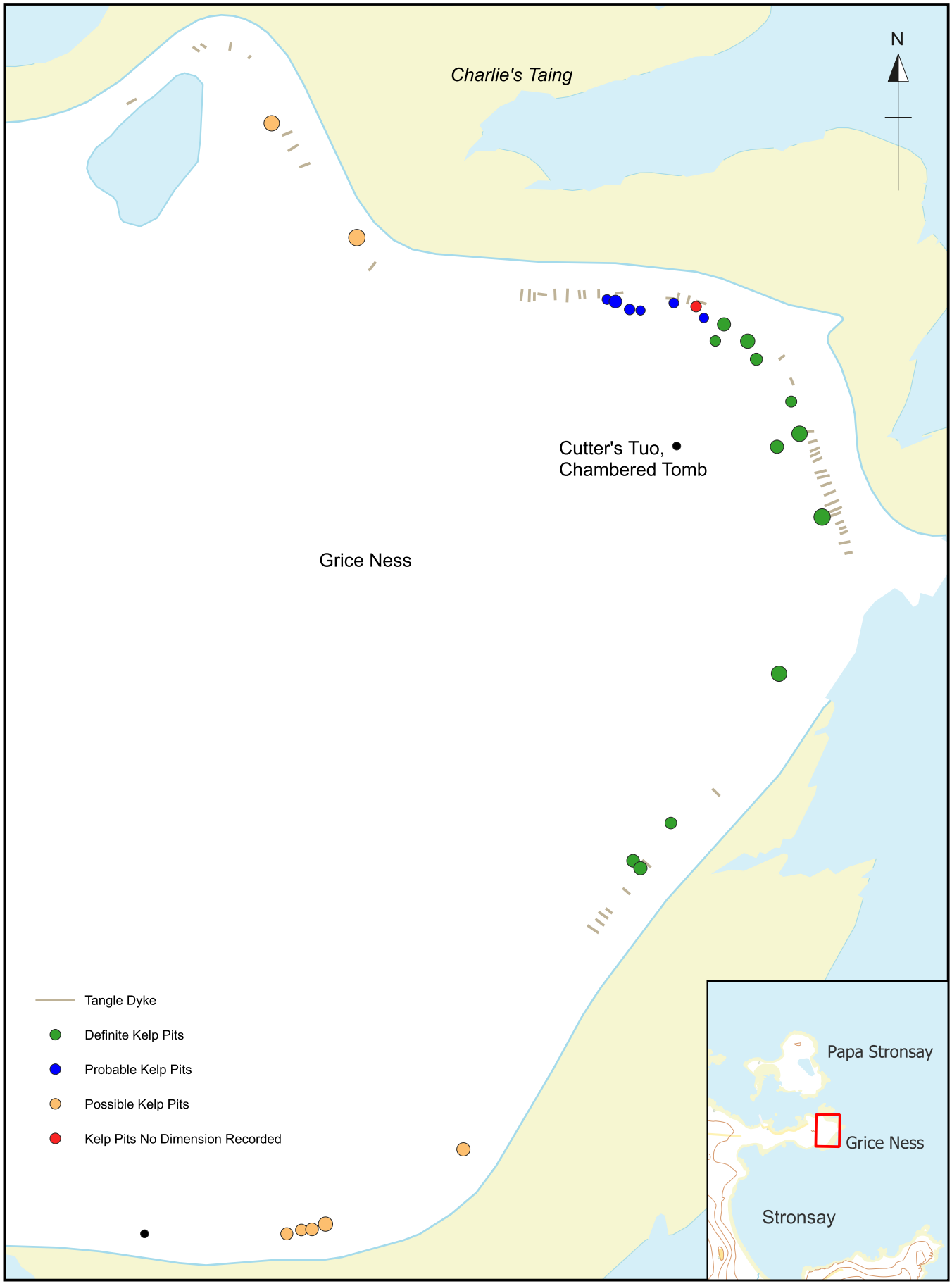
0 20 40 60 80 100 m

CRS: OSGB36 / British National Grid/ EPSG:27700

Figure 21: Kelp workings at Whitemill Bay, Sanday

Project Name: Industrial Heritage		
Project No: 996	Scale @A4 1:2,000	
Date: 02/2025	ID: OR01CB	Rev. 1.00

OC ORCA - 996_GIS\Base Maps\996_ Base_Map.qgz



ORCA Orkney Research Centre for Archaeology

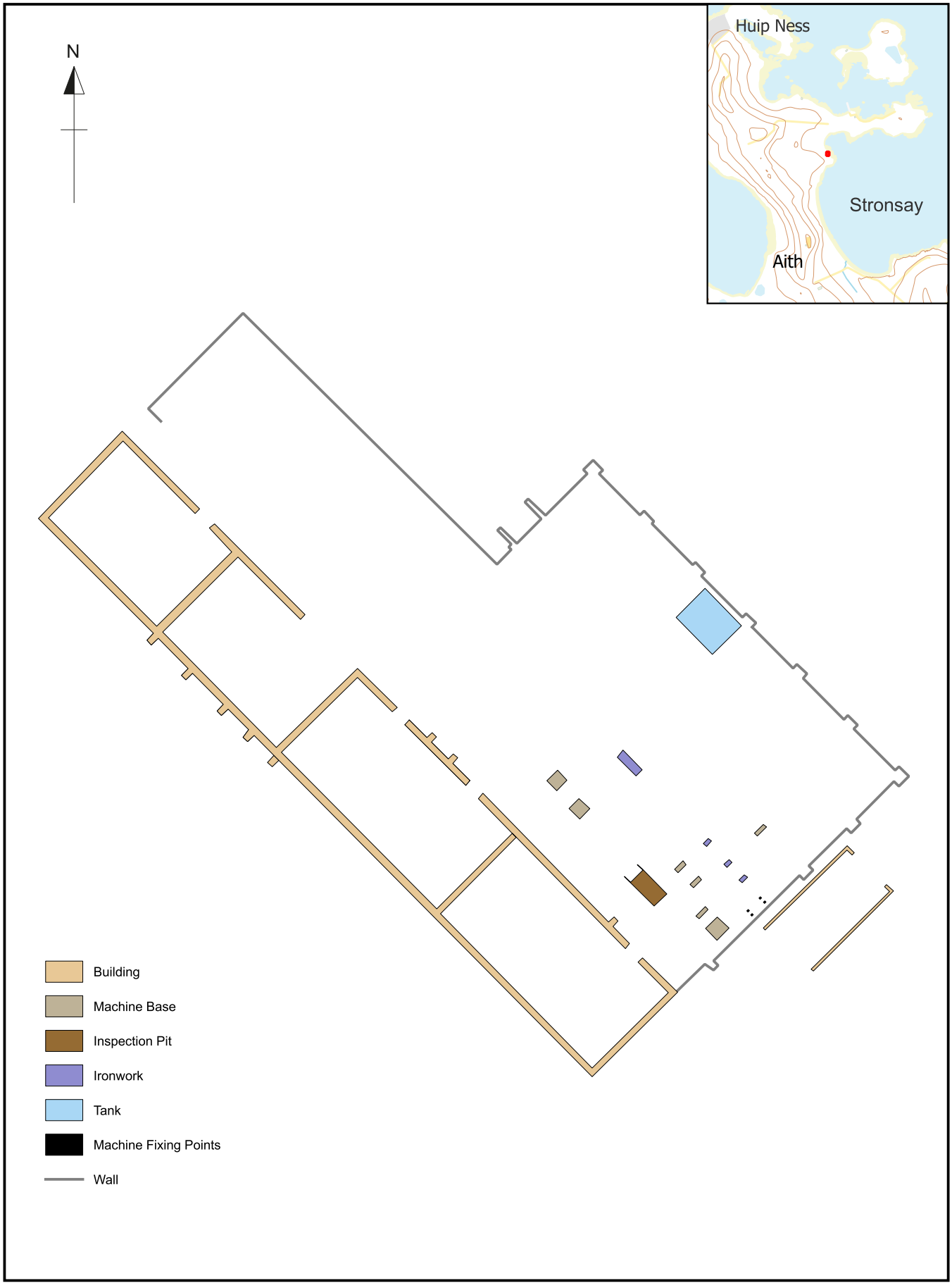
0 20 40 60 80 100 m

CRS: OSGB36 / British National Grid/ EPSG:27700

Figure 22: Kelp workings at Grice Ness, Stronsay

Project Name: Industrial Heritage		
Project No: 996	Scale @A4 1:2,500	
Date: 02/2025	ID: OR01CB	Rev. 1.00

OC ORCA - 996_GIS\Base Maps\996_ Base_Map.qgz



ORCA Orkney Research Centre for Archaeology

0 5 10 15 20 m

CRS: OSGB36 / British National Grid/ EPSG:27700

Figure 23: Fist Gut Processing Plant, Stronsay

Project Name: Industrial Heritage		
Project No: 996	Scale @A4 1:300	
Date: 02/2025	ID: OR01CB	Rev. 1.00

ORCA Orkney Research Centre for Archaeology

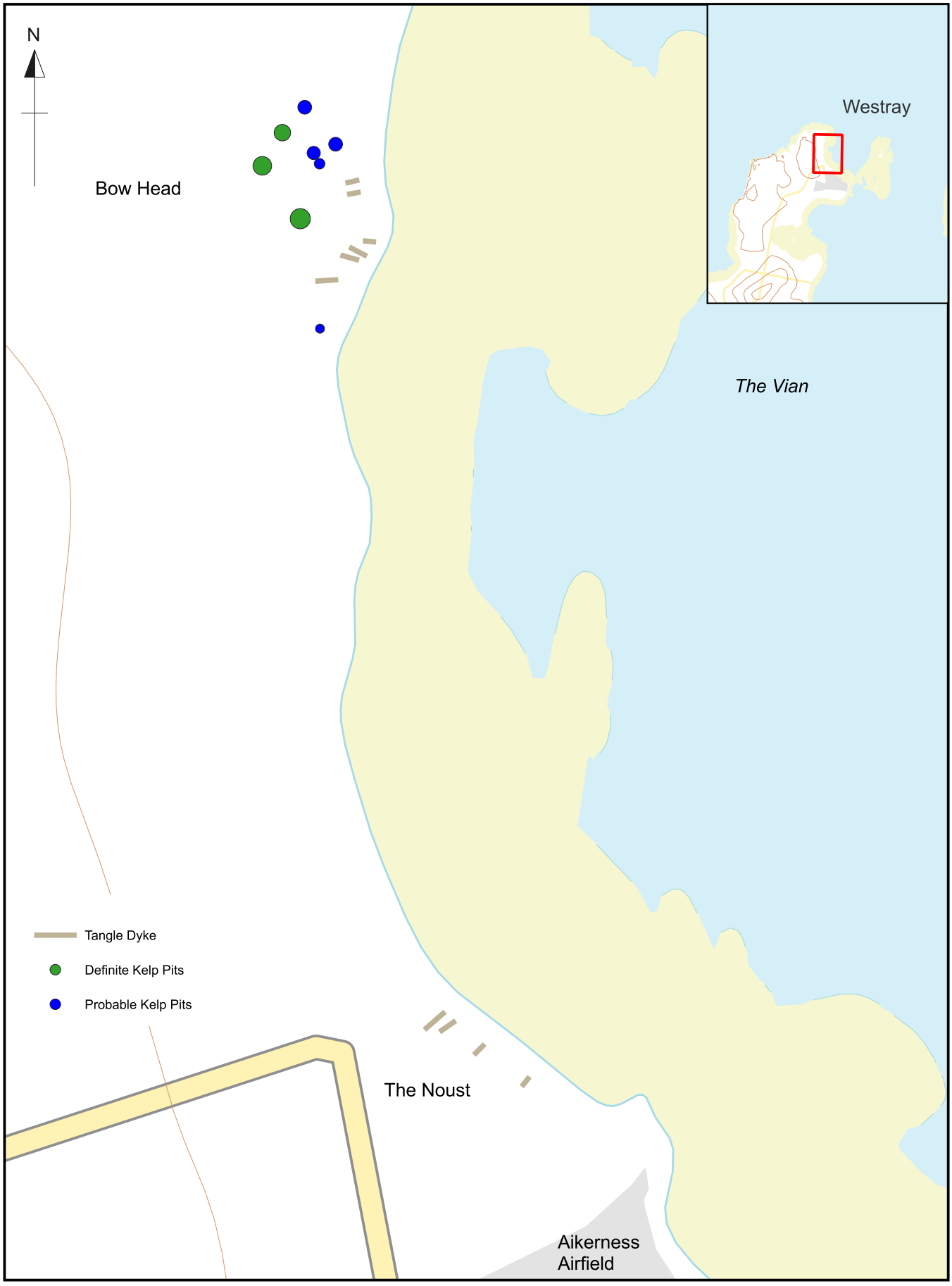
0 20 40 60 80 100 m

CRS: OSGB36 / British National Grid/ EPSG:27700

Figure 24: Kelp workings at The Links, Westray

Project Name: Industrial Heritage		
Project No: 996	Scale @A4 1:2,500	
Date: 02/2025	ID: OR01CB	Rev. 1.00

OC ORCA - 996_GIS\Base Maps\996_ Base_Map.qgz



ORCA Orkney Research Centre for Archaeology

0 20 40 60 80 100 m

CRS: OSGB36 / British National Grid/ EPSG:27700

Figure 25: Kelp workings at Aikerness, Westray

Project Name: Industrial Heritage		
Project No: 996	Scale @A4 1:3,000	
Date: 02/2025	ID: OR01CB	Rev. 1.00

OC ORCA - 996_GIS\Base Maps\996_ Base_Map.qgz

14 Tables

14.1 Table 26: Sites

Island	Site	NGR (centred)	Fieldwork	Report Figure
Eday	Fersness Quarry	HY 53608 33537	Project Launch Visit; Walkover Survey	
Eday	East Quarryhouse	HY 53738 33528	Site Visit	
Eday	Easthouse	HY 53903 33442	Site Visit	
Eday	Redhouse	HY 55758 38464	Project Launch Visit; Building Survey	
Eday	Bay of Green Toft	HY 56098 28840	Project Launch Visit	
Eday	Sandhill	HY 56423 33035	Site Visit	
Eday	Fersness Quarryhouse	HY 53579 33466	Project Launch Visit; Building Survey	
North Ronaldsay	Tor Ness	HY 75819 55539	Project Launch Visit; Walkover Survey	
North Ronaldsay	Nether Linnay	HY 75888 55278	Project Launch Visit	
North Ronaldsay	Linds Wick	HY 76117 55590	Project Launch Visit; Walkover Survey	
North Ronaldsay	Westness	HY 76747 55646	Project Launch Visit	
North Ronaldsay	North Ronaldsay Pier	HY 74956 52260	Walkover Survey	
North Ronaldsay	Millhouse	HY 76282 52876	Building Survey	
North Ronaldsay	Hooking Mill	HY 76645 53382	Building Survey	
North Ronaldsay	Linklet	HY 76645 53984	Walkover Survey	
North Ronaldsay	Nether Breck	HY 76646 55129	Site Visit	
North Ronaldsay	Dennis Head	HY 78704 55694	Walkover Survey	
Papa Westray	Bight of Quoyolie	HY 48443 50357	Project Launch Visit	
Papa Westray	Backiskaill	HY 48461 50888	Project Launch Visit	
Papa Westray	Holland Farm	HY 48835 51537	Project Launch Visit; Building Survey	
Papa Westray	Nouster	HY 49722 51930	Project Launch Visit	
Papa Westray	Hookin Mill	HY 50057 51228	Building Survey	

Island	Site	NGR (centred)	Fieldwork	Report Figure
Rousay	Grain	HY 38364 32492	Site Visit	
Rousay	Saviskaill Farm	HY 40048 33518	Project Launch Visit; Building Survey	
Rousay	Nousty Sand	HY 40120 33395	Project Launch Visit; Building Survey	
Sanday	Loth	HY 60327 33831	Site Visit	
Sanday	Craws Nest	HY 65054 45052	Project Launch Visit	
Sanday	Holms of Ire	HY 65065 45744	Walkover Survey	
Sanday	Whale Point	HY 65136 45401	Project Launch – Visit; Walkover Survey	
Sanday	Stone Crusher	HY 65161 45093	Project Launch Visit & Photographic Survey;	
Sanday	Roos Wick	HY 65317 45009	Project Launch Visit	
Sanday	Bea Loch Corn Mill	HY 65556 39255	Site Visit	
Sanday	Stumpo	HY 66436 44474	Project Launch Visit	
Sanday	Whitemill Bay	HY 68580 46632	Project Launch Visit; Walkover Survey	
Sanday	Seatter	HY 72047 44159	Site Visit	
Shapinsay	Balfour Village Petrol Pump	HY 47927 16629	Site Visit	
Shapinsay	Balfour Village Gasometer	HY 47995 16659	Building Survey	
Shapinsay	Parkhall	HY 49226 18726	Site Visit	
Shapinsay	Ling Holm	HY 50191 19487	Site Visit	
Shapinsay	Cotbrae	HY 50329 17522	Project Launch Visit; Building Survey	
Shapinsay	Lochend	HY 51273 19183	Site Visit	
Shapinsay	Elwick Mill	HY 48516 16938	Project Launch Visit	
Shapinsay	Vedesquoy	HY 53636 21363	Project Launch Visit	
Shapinsay			Project Launch Visit	
Shapinsay			Project Launch Visit	
Stronsay	Goar	HY 63507 29389	Site Visit	
Stronsay	Point of Cumley	HY 65521 27676	Project Launch Visit; Building Survey	
Stronsay	Meikle Meal Mill	HY 65887 25518	Project Launch Visit & Building Survey	
Stronsay	Flowera	HY 66002 23262	Site Visit	

Island	Site	NGR (centred)	Fieldwork	Report Figure
Stronsay	Grice Ness	HY 67298 28439	Walkover Survey	
Stronsay	Gorries	HY 67465 24739	Site Visit	
Stronsay	Odin-ness	HY 68500 25453	Site Visit	
Westray	Noup Head	HY 39209 49901	Site Visit	
Westray	Nether House	HY 43543 43437	Site Visit	
Westray	Rackwick, The Links	HY 44280 50198	Project Launch Visit; Walkover Survey	
Westray	Cornhouse	HY 44915 48213	Building Survey	
Westray	Bow Head	HY 45895 52754	Project Launch Visit; Walkover Survey	
Westray	Aikerness	HY 45978 52290	Project Launch Visit; Walkover Survey	
Westray	Surrigarth	HY 49045 45140	Project Launch Visit	

14.2 Table 27: Redhouse (Reidscastle)

Location	Identifier	Usage	Comments
North Range (west)	Building 1	Domestic Structure (two-storey)	*Extension to farmhouse*
	Building 2	Domestic Structure	*Probably original farmhouse*
North Range (centre)	Building 3	Storage space (? for kiln)	*Probably originally free-standing with kiln and later extended to join farmhouse*
	Building 4	Corn Drying-kiln	*Probably originally free-standing with storage*
North Range (east)	Building 5	Storage space	*Original function unknown*
	Building 6		*Original function unknown*
Centre Range	Building 7	Byre	*Later addition to range*
	Room 8	Forge	*Probably part of original farm layout*
	Room 9	*unknown*	
	Room 10	*unknown*	
South Range	Building 11	Byre	

Location	Identifier	Usage	Comments
South Enclosure	Structure 12	Sty?	
West of North Range	Structure 13	*unknown*	
	Structure 14	*unknown*	
North Enclosure	Structure 15	Pig Sty	*Constructed after 1900*
	Building 16	Hen House	*Constructed after 1900*
	Building 17	Water-powered Mill	*Constructed between 1879 and 1900*

14.3 Table 3: Saviskaill Farm

Location	Identifier	Usage	Comments
North Corner	FB 1	Corn Drying-kiln & Storage	*Ruinous. Two rooms.*
	FB 2	Walling	
	FB 3	Byre	*Two rooms.*
	FB 4	Domestic Structure	*Ruinous.*
East of Wasbister Road	FB 5	Domestic Structure	
	FB 6	Domestic Structure	
	FB 7	Agricultural	*20th-century extension*
	FB 8	Domestic Structure	
Quadrangle West of Wasbister Road	FB 9	Byre	
	FB 10.1	*unknown*	
	FB 10.2	*unknown*	
	FB 10.3	Water-powered Mill	*Some machinery appears to be intact*
	FB 11	Byre	
	FB 12	Byre	

14.4 Table 4: Holland Farm

Identifier	Usage 1844	Usage 1920	Comments
Building 1	House	Meal Loft & Store / Dairy	
Building 2	Bothy	Tattie Store	
Building 3	Holland House (built 1814)		*Original Holland House stood about 400m from the 1814-house, on "Knowe of Old Holland".*
Building 4	Houses	Smithy / Joiner's Workshop / Iron House	
Building 5	*unmarked*	Staigy House	
Building 6	New Barns / Grain Lofts / Stable	Hay / Grain Lofts / Stable / Threshing Mill	
Building 7	Horse Mill		
Building 8	~	Calfie Byre / Kye's Byre	
Building 9	~	Turnip Shed	
Building 10	Old Threshing Barn / Corn Drying-Kiln		
Building 11	~	Sheepie House	*Ruinous*
Building 12	~	Sheepie House	*Ruinous*
Building 13	Miller's House	Byre for Sick Cattle	
Building 14	~	Servants' Bothy	
Building 15	Farm Servants' Houses	Oxy Byre	
Building 16	~	?Stackyard wall	*Remnant of dry-stone walling*
Building 17	Byre		*Stone walling incorporated into modern structure*

14.5 Table 5: Summary of Kelp Working Sites

Site	Island	Kelp Pits	Tangle Dykes	Other	Total	Notes
Dennis Head	North Ronaldsay	64	3	-	67	Some kelp pits in lines

Site	Island	Kelp Pits	Tangle Dykes	Other	Total	Notes
Lenswick	North Ronaldsay	0	9	3 stone slabs	9	Slabs likely used for drying tangle
Linklet	North Ronaldsay	88	0	1 ware slip	89	Some kelp pits in lines / clusters. Full area not surveyed
Pier	North Ronaldsay	5	0	-	5	Eroded, stone bases visible
Holms of Ire	Sanday	7	4	-	11	Tangle dykes grouped
Whale Point	Sanday	36	3	-	39	Tangle dykes grouped
Whitemill Bay	Sanday	3	3	-	6	Obscured by wind-blown sand
Grice Ness	Stronsay	25	51	-	76	Four discrete groups
Aikerness	Westray	9	10	1 structure	20	3 groups of tangle dykes
The Links	Westray	0	37	2 nousts, 2 stone spreads, 1 ware slip	42	-
	Total	**237**	**120**	**11**	**364**	

14.6 Table 6: Fersness Quarry

Site	Feature number	Type	Description
Fersness Quarry House	1	Building	Building 1. Quarry house. Possible 3 rooms (no evidence of internal divisions). 3 fireplaces. Shelves in E and W walls.
Fersness Quarry House	2	Building	Building 2. Evidence of original roofline.
Fersness Quarry House	3	Building	Building 3. Roofless. Same phase as Building 4.
Fersness Quarry House	4	Building	Building 4. Roof intact.
Fersness Quarry House	5	Structure	Building 5. Space between Building 4 and 6. Northern wall butts 4. Built at same time as 6.
Fersness Quarry House	6	Building	Building 6. Roof partially collapsed.
Fersness Quarry House	7	Building	Building 7. L-shaped wall. Possible lean to, inaccessible.
Fersness Quarry House	8	Enclosure	Rectangular enclosure on Western side of buildings. Originally boat-shaped building 1880. Incorporated and enclosed 1902. Out of use by 1970.

Site	Feature number	Type	Description
Fersness Quarry House	9	Enclosure	Rectangular stone built enclosure south of building. Possible fence. Creates track in front of Quarry house.
Fersness Quarry House	10	Enclosure	Small enclosure, not on maps. Possible outhouse or hen house.
Fersness Quarry House	11	Building foundations	Remains of building foundations within enclosure to North. Robbed of stone. Possible pulley immediately outside South wall.
Fersness Quarry	12	Wall/platform	Wall has dressed stone block in irregular courses. No bonding material. Possible slight drain on NE edge.
Fersness Quarry	13	Access ramp	Access ramp to Quarry entrance. Adjacent to 12. Raised earthworks on NE and NW edges.
Fersness Quarry	14	Wall	Length of walling visible in spoil heap. Built of poorly dressed stone blocks. Two courses visible. No bonding pattern or bonding matrix.
Fersness Quarry	15	Retaining wall	Retaining wall
Fersness Quarry	16	Stone steps	Flight of stone steps between retaining wall 15 and 17. Between 30 and 40 steps. Orientated NE/SW.
Fersness Quarry	17	Retaining wall	Retaining wall
Fersness Quarry	18	Timber vessel	Remains of timber vessel. Possible ships boat or whaler. Timbers are fixed with square headed nails. Timber sealed with black tar-like substance. Remains of blue and red paint. Sits at foot of retaining wall 21.
Fersness Quarry	19	Retaining wall	Retaining wall
Fersness Quarry	20	Retaining wall	Retaining wall
Fersness Quarry	21	Retaining wall	Retaining wall built of large stone blocks with no coursing or bonding. Adjacent to boat remains (18)
Fersness Quarry	22	Retaining wall	Curvy-linear retaining wall. Poorly dressed stone blocks. No coursing, no bonding. Maximum of 8 courses.

14.7 Table 7: Dennis Head

Feature number	Type	Diameter (m)	Depth (m)	Length (m)	Width (m)	Height (m)	Status
23	Kelp pit	2.2	0.2	-	-	-	Definite
24	Kelp pit	2.5	0.25	-	-	-	Definite
26	Kelp pit	2.5	0.2	-	-	-	Definite
29	Kelp pit	2.7	0.2	-	-	-	Definite
30	Kelp pit	1.8	0.25	-	-	-	Definite
31	Kelp pit	2.2	0.3	-	-	-	Definite
32	Kelp pit	2.5	0.25	-	-	-	Definite
33	Kelp pit	2.5	0.15	-	-	-	Definite
34	Kelp pit	2.8	0.1	-	-	-	Definite
35	Kelp pit	1.9	0.15	-	-	-	Definite
36	Kelp pit	2.1	0.15	-	-	-	Definite
37	Kelp pit	1.8	0.2	-	-	-	Definite
38	Kelp pit	1.8	0.15	-	-	-	Definite
41	Kelp pit	2.3	0.2	-	-	-	Definite
43	Kelp pit	2.5	0.15	-	-	-	Definite
44	Kelp pit	1.8	0.15	-	-	-	Definite
47	Kelp pit	1.6	0.15	-	-	-	Definite
48	Kelp pit	2.2	0.35	-	-	-	Definite
49	Kelp pit	1.9	0.3	-	-	-	Definite
50	Kelp pit	1.9	0.2	-	-	-	Definite
51	Kelp pit	1.7	0.1	-	-	-	Definite
52	Kelp pit	2.3	0.15	-	-	-	Definite
53	Kelp pit	2.2	0.15	-	-	-	Definite
54	Kelp pit	2	0.15	-	-	-	Definite
55	Kelp pit	2.2	0.15	-	-	-	Definite
56	Kelp pit	2	2	-	-	-	Definite
57	Kelp pit	1.8	0.1	-	-	-	Definite
58	Kelp pit	2	0.1	-	-	-	Definite
59	Kelp pit	2.3	0.05	-	-	-	Definite
60	Kelp pit	2.2	0.2	-	-	-	Definite
61	Kelp pit	1.9	0.05	-	-	-	Definite
62	Kelp pit	1.8	0.2	-	-	-	Definite
63	Kelp pit	1.8	0.15	-	-	-	Definite
64	Kelp pit	1.9	0.15	-	-	-	Definite
65	Kelp pit	2.1	0.2	-	-	-	Definite
66	Kelp pit	1.7	0.2	-	-	-	Definite
67	Kelp pit	1.6	0.2	-	-	-	Definite
68	Kelp pit	2.1	0.2	-	-	-	Definite
69	Kelp pit	2.1	0.1	-	-	-	Definite
70	Kelp pit	1.8	0.15	-	-	-	Definite
71	Kelp pit	1.8	0.1	-	-	-	Definite

Feature number	Type	Diameter (m)	Depth (m)	Length (m)	Width (m)	Height (m)	Status
72	Kelp pit	1.9	0.2	-	-	-	Definite
74	Tangle dyke	-	-	3.9	1	0.3	Definite
75	Tangle dyke	-	-	4.3	1	0.35	Definite
76	Tangle dyke	-	-	3.4	1.01	0.4	Definite
80	Kelp pit	2	0.1	-	-	-	Definite
81	Kelp pit	1.8	0.2	-	-	-	Definite
82	Kelp pit	1.8	0.15	-	-	-	Definite
83	Kelp pit	2.2	0.1	-	-	-	Definite
85	Kelp pit	2.4	0.3	-	-	-	Definite
86	Kelp pit	1.7	0.1	-	-	-	Definite

14.8 Table 8: Lenswick

Feature number	Type	Length (m)	Width (m)	Height (m)	Status
1	Tangle dyke	4.03	1.06	0.23	Probable
2	Tangle dyke	4.56	1.19	0.46	Definite
3	Tangle dyke	5.72	1.09	0.43	Definite
4	Tangle dyke	6.67	0.79	0.29	Definite
5	Tangle dyke	5.6	1.06	0.3	Definite
6	Tangle dyke	3.88	0.9	0.38	Definite
7	Tangle dyke/platform	2.49	2.19	0.9	Definite
8	Tangle dyke	5.62	1.04	0.35	Definite
9	Tangle dyke	2.78	0.9	0.18	Possible
10	Tangle dyke	5.83	0.9	0.73	Definite
12	Platform	0.64	0.39	0.42	Possible
13	Slab	2.6	1.44	0.62	Probable
14	Platform	2.59	1.48	0.81	Probable

14.9 Table 9: Tor Ness

Feature number	Type	Diameter (m)	Depth (m)	Status
17	Kelp pit	2.3	0.2	Definite
18	Kelp pit	2.5	0.2	Definite
19	Kelp pit	1.8	0.2	Probable
20	Kelp pit	2.2	0.15	Possible
21	Kelp pit	2	0.1	Probable

14.10 Table 10: Linklet

Feature number	Type	Diameter (m)	Depth (m)	Status
101	Kelp pit	1.9	0.15	Definite
102	Kelp pit	1.9	0.1	Definite
103	Kelp pit	2.1	0.2	Definite
104	Kelp pit	1.4	0.2	Definite
105	Kelp pit	1.8	0.1	Definite
106	Kelp pit	2	0.1	Definite
107	Kelp pit	2.4	0.25	Definite
108	Kelp pit	2	0.1	Definite
109	Kelp pit	2.1	0.2	Definite
110	Kelp pit	1.8	0.25	Definite
111	Kelp pit	1.6	0.15	Definite
112	Kelp pit	2.1	2	Probable
113	Kelp pit	1.8	0.2	Definite
114	Kelp pit	1.8	0.25	Definite
115	Kelp pit	1.8	0.1	Definite
116	Kelp pit	1.9	0.15	Definite
117	Kelp pit	1.8	0.05	Definite
118	Kelp pit	1.6	0.05	Probable
119	Kelp pit	2	0.2	Definite
120	Kelp pit	2.5	0.1	Definite
121	Kelp pit	1.8	0.15	Definite
122	Kelp pit	1.8	0.1	Definite
123	Kelp pit	2.2	0.15	Definite
124	Kelp pit	2	0.15	Definite
125	Kelp pit	2.1	0.15	Definite
126	Kelp pit	2.1	0.1	Definite
127	Kelp pit	1.7	0.1	Definite
129	Kelp pit	3.6	0.2	Possible
130	Kelp pit	2.8	0.2	Possible
131	Kelp pit	3.1	0.15	Possible
132	Kelp pit	2.5	0.15	Possible
133	Kelp pit	2.1	0.2	Definite
134	Kelp pit	2.4	0.1	Possible
135	Kelp pit	2.8	0.25	Probable
136	Kelp pit	1.3	0.1	Definite
137	Kelp pit	3.6	0.25	Probable
138	Kelp pit	2.2	0.25	Definite
139	Kelp pit	2.1	0.2	Definite
140	Kelp pit	2.4	0.15	Possible
141	Kelp pit	1.8	0.15	Probable

Feature number	Type	Diameter (m)	Depth (m)	Status
142	Kelp pit	2.5	0.25	Definite
143	Kelp pit	2.3	0.2	Probable
144	Kelp pit	4.3	0.2	Possible
145	Kelp pit	2.6	0.25	Probable
146	Kelp pit	2.4	0.25	Probable
147	Kelp pit	1.8	0.1	Probable
148	Kelp pit	2.3	0.15	Definite
149	Kelp pit	1.7	0.15	Probable
150	Kelp pit	2.3	0.2	Possible
151	Kelp pit	2.2	0.2	Definite
152	Kelp pit	2.1	0.15	Possible
153	Kelp pit	1.9	0.1	Possible
154	Kelp pit	2.2	0.2	Definite
155	Kelp pit	2.5	0.2	Definite
156	Kelp pit	2.1	0.25	Definite
157	Kelp pit	2	0.15	Definite
158	Kelp pit	3	0.15	Definite
159	Kelp pit	3.1	0.1	Probable
160	Kelp pit	2.1	0.2	Definite
161	Kelp pit	1.5	0.1	Probable
162	Kelp pit	2.1	0.15	Definite
163	Kelp pit	2.8	0.25	Definite
164	Kelp pit	1.8	0.15	Definite
165	Kelp pit	1.8	0.1	Definite
166	Kelp pit	1.9	0.1	Probable
167	Kelp pit	1.7	0.1	Probable
168	Kelp pit	2	0.15	Definite
169	Kelp pit	3.4	0.2	Probable
170	Kelp pit	2.7	0.25	Definite
171	Kelp pit	3	0.1	Probable
172	Kelp pit	2.1	0.1	Definite
173	Kelp pit	2.1	0.15	Definite
174	Kelp pit	2.5	0.2	Probable
175	Kelp pit	2	0.25	Definite
176	Kelp pit	2.1	0.3	Definite
177	Kelp pit	2.3	0.15	Definite
178	Kelp pit	1.8	0.25	Definite
179	Kelp pit	1.8	0.1	Possible
180	Kelp pit	2.2	0.15	Definite
181	Kelp pit	1.6	0.1	Definite
182	Kelp pit	2	0.1	Definite
183	Kelp pit	1.9	0.05	Definite

Feature number	Type	Diameter (m)	Depth (m)	Status
184	Kelp pit	2.4	0.1	Probable
185	Kelp pit	2.3	0.1	Probable
186	Kelp pit	1.6	0.05	Probable
187	Kelp pit	2	0.1	Probable
188	Kelp pit	2.8	0.1	Probable
189	Kelp pit	1.9	0.15	Probable

14.11 Table 11: North Ronaldsay Pier

Feature number	Type	Diameter (m)	Depth (m)	Status
90	Kelp pit	1.65	0.1	Definite
91	Kelp pit	1.55	0.05	Definite
92	Kelp pit	1.6	0.1	Definite
93	Kelp pit	1.8	0.15	Definite
94	Kelp pit	1.55	0.05	Definite

14.12 Table 12: Holmes of Ire

Feature number	Type	Diameter (m)	Length (m)	Width (m)	Height (m)	Status
1	Tangle dyke		4.4	0.8	0	Probable
2	Kelp pit	1.7				Possible
3	Kelp pit	2				Possible
4	Tangle dyke		3.4	1.1	0	Possible
5	Tangle dyke		3.7	1.4	0	Probable
6	Tangle dyke		7.8	1.2	0	Possible
7	Kelp pit	3				Possible
8	Kelp pit	0.9				Possible
9	Kelp pit	2.9				Probable
10	Kelp pit	2.3				Possible
11	Kelp pit	2.6				Possible

14.13 Table 13: Whale Point

Feature number	Type	Diameter (m)	Length (m)	Width (m)	Status
1	Tangle dyke		6.1	1	Possible
2	Kelp pit	2.3			Possible
3	Kelp pit	2.7			Possible
4	Kelp pit	2.4			Possible

Feature number	Type	Diameter (m)	Length (m)	Width (m)	Status
5	Kelp pit	2.35			Possible
6	Kelp pit	2			Possible
7	Kelp pit	1.9			Possible
9	Kelp pit	2			Possible
10	Kelp pit	1.9			Possible
11	Kelp pit	2			Possible
12	Kelp pit	1.9			Possible
13	Kelp pit	2.1			Possible
14	Kelp pit	0.8			Possible
15	Kelp pit	2			Possible
16	Kelp pit	2.2			Possible
17	Kelp pit	2.1			Possible
18	Kelp pit	1.9			Possible
19	Kelp pit	1.8			Possible
20	Kelp pit	2			Possible
21	Kelp pit	2.4			Possible
22	Kelp pit	1.9			Possible
23	Kelp pit	2.4			Possible
24	Tangle dyke		2.9	0.75	Possible
25	Kelp pit	2			Possible
26	Kelp pit	2.1			Possible
27	Kelp pit	1.9			Possible
28	Kelp pit	1.9			Possible
29	Tangle dyke		3.7	0.9	Probable
30	Kelp pit	1.95			Probable
31	Kelp pit	2.2			Probable
32	Kelp pit	2.3			Possible
33	Kelp pit	1.7			Possible
34	Kelp pit	1.6			Possible
35	Kelp pit	2.1			Possible
36	Kelp pit	2			Possible
37	Kelp pit	2.1			Probable
38	Kelp pit	1.5			Possible
39	Kelp pit	1.6			Possible

14.14 Table 14: Whitemill Bay

Feature number	Type	Diameter (m)	Length (m)	Width (m)	Status
1	Tangle dyke		8.4	1.05	Possible
2	Tangle dyke		7.6	1.1	Possible
3	Tangle dyke		8.2	1.4	Possible
4	Kelp pit	2.9			Possible

Feature number	Type	Diameter (m)	Length (m)	Width (m)	Status
5	Kelp pit	1.85			Possible
6	Kelp pit	2.8			Possible

14.15 Table 15.1: Grice Ness

Feature Number	Type	Diameter (m)	Status
9	Kelp pit	2.9	Possible
10	Kelp pit	3.1	Possible
21	Kelp pit	1.85	Probable
22	Kelp pit	2.4	Probable
24	Kelp pit	2	Probable
25	Kelp pit	1.75	Probable
27	Kelp pit	1.85	Probable
31	Kelp pit	1.8	Probable
33	Kelp pit	2.7	Definite
34	Kelp pit	2.5	Definite
35	Kelp pit	2	Definite
36	Kelp pit	2.3	Definite
39	Kelp pit	2.1	Definite
40	Kelp pit	2.9	Definite
41	Kelp pit	2.5	Definite
55	Kelp pit	3.1	Definite
61	Kelp pit	2.9	Definite
63	Kelp pit	2.2	Definite
65	Kelp pit	2.5	Definite
66	Kelp pit	2.4	Definite
72	Kelp pit	2.5	Possible
73	Kelp pit	2.7	Possible
74	Kelp pit	2.4	Possible
75	Kelp pit	2.2	Possible
76	Kelp pit	2.3	Possible

14.16 Table 15.2 Grice Ness

Feature Number	Type	Length (m)	Width (m)	Height (m)	Status
1	Tangle dyke	4	1	0.55	Probable
2	Tangle dyke	2.7	1.7	0.4	Definite
3	Tangle dyke	1.6	2	0.12	Possible
4	Tangle dyke	2.8	1.4	0.25	Definite

Feature Number	Type	Length (m)	Width (m)	Height (m)	Status
5	Tangle dyke	1.1	1	0.35	Possible
6	Tangle dyke	4.15	1.08	0.3	Definite
7	Tangle dyke	4.5	1.42	0.4	Definite
8	Tangle dyke	3.85	1	0.25	Definite
11	Tangle dyke	4.2	1.4	0.2	Definite
12	Tangle dyke	4.25	1.35	0.3	Definite
13	Tangle dyke	4.55	1.6	0.3	Definite
14	Tangle dyke	2.8	1.4	0.3	Definite
15	Tangle dyke	3.5	1.5	0	Definite
16	Tangle dyke	3.8	1.35	0.25	Definite
17	Tangle dyke	5.2	1.5	0.15	Definite
18	Tangle dyke	3	1.1	0.2	Definite
19	Tangle dyke	2.9	1.12	0.22	Definite
20	Tangle dyke	3	0.95	0.25	Definite
23	Tangle dyke	2.83	1.01	0	Definite
26	Tangle dyke	2.6	1.12	0.15	Definite
28	Tangle dyke	3.05		0	Definite
29	Tangle dyke	3.19	1.37	0.2	Definite
30	Tangle dyke	2.55	1.1	0	Possible
32	Tangle dyke	3.65	1.8	0.3	Definite
37	Tangle dyke	2.6	1.3	0	Definite
38	Tangle dyke	2.9	1.25	0.2	Definite
42	Tangle dyke	2.2	1	0	Definite
43	Tangle dyke	3.3	1	0.15	Definite
44	Tangle dyke	3.7	1.1	0	Definite
45	Tangle dyke	4	1.1	0	Definite
46	Tangle dyke	4.1	1.1	0	Definite
47	Tangle dyke	4.1	1.35	0.4	Definite
48	Tangle dyke	5.2	1.4	0.4	Definite
49	Tangle dyke	4.9	1.4	0.4	Definite
50	Tangle dyke	4.9	1.3	0	Definite
51	Tangle dyke	6.2	1.5	0.55	Definite
52	Tangle dyke	8.25	1.1	0.4	Definite
53	Tangle dyke	6.5	1	0.5	Definite
54	Tangle dyke	5.4	1.1	0.4	Definite
56	Tangle dyke	4.3	1.1	0	Definite
57	Tangle dyke	2.8	1.2	0.25	Definite
58	Tangle dyke	2.7	0.88	0.45	Definite
59	Tangle dyke	5.4	1.2	0.32	Definite
60	Tangle dyke	2.7	0.7	0	Possible
62	Tangle dyke	3.45	1.2	0	Possible
64	Tangle dyke	4	1.3	0	Probable

Feature Number	Type	Length (m)	Width (m)	Height (m)	Status
67	Tangle dyke	3.55	1.35	0	Probable
68	Tangle dyke	3.1	1.2	0.2	Probable
69	Tangle dyke	4.75	1.25	0	Probable
70	Tangle dyke	3.7	1.15	0.35	Definite
71	Tangle dyke	6.2	1.1	0	Possible

14.17 Table 16: The Links

Feature Number	Type	Length (m)	Width (m)	Height (m)	Status
1	Tangle dyke	14.6	0.65	0.6	Definite
2	Tangle dyke	12.95	0.7	0.85	Definite
3	Tangle dyke	10.6	0.83	0.6	Definite
4	Tangle dyke	6.6	0.58	0.65	Definite
5	Tangle dyke	12.15	0.6	0.55	Definite
6	Tangle dyke	10.9	0.6	0.45	Definite
7	Tangle dyke	12.1	0.55	0.35	Definite
8	Tangle dyke	9.3	0.45	0.6	Definite
9	Tangle dyke	9.1	0.65	0.65	Definite
10	Tangle dyke	8.5	0.65	0.45	Definite
11	Tangle dyke	5.6	0.5	0.35	Definite
12	Tangle dyke	12.55	0.5	0.4	Definite
13	Tangle dyke	8.3	0.7	0.45	Definite
14	Tangle dyke	12.8	0.6	0.6	Definite
15	Tangle dyke	6.1	0.6	0.6	Definite
16	Tangle dyke	7.6	0.6	0.45	Definite
17	Tangle dyke	9.9	0.55	0.65	Definite
18	Tangle dyke	10.3	0.7	0.6	Definite
19	Tangle dyke	5.8	0.65	0.65	Definite
20	Tangle dyke	9.1	0.7	0.75	Definite
21	Tangle dyke	8.6	0.7	0.65	Definite
22	Tangle dyke	3.8	0.75	0.6	Definite
23	Tangle dyke	9.9	0.7	0.65	Definite
24	Tangle dyke	5.5	1.9	0.5	Possible
25	Tangle dyke	7.5	1.3	?	Possible
27	Tangle dyke	16.8	0.65	0.8	Definite
28	Tangle dyke	5.1	0.7	0.65	Definite
29	Tangle dyke	12.3	0.7	0.8	Definite
30	Tangle dyke	22.4	0.7	0.8	Definite
32	Tangle dyke	10.2	0.55	0.85	Definite
33	Tangle dyke	4.9	0.6	0.7	Definite

Feature Number	Type	Length (m)	Width (m)	Height (m)	Status
34	Tangle dyke	6.8	0.45	0.7	Definite
35	Tangle dyke	8.6	0.65	0.9	Definite
36	Tangle dyke	7.6	0.7	0.65	Definite
37	Tangle dyke	5.7	0.55	0.55	Definite
38	Tangle dyke	5.3	0.6	0.65	Definite
39A	Tangle dyke	5.7	0.55	0.6	Possible
39B	Tangle dyke	16.2	0.65	0.7	Possible

14.18 Table 17: Aikerness

Feature Number	Type	Diameter (m)	Depth (m)	Length (m)	Width (m)	Height (m)	Status
45	Tangle dyke			12.2	0.65	0.45	Definite
46	Tangle dyke			6.9	0.75	0.5	Definite
47	Tangle dyke			4.4	0.75	0.3	Definite
48	Tangle dyke			3.7	0.9	0.65	Possible
49	Kelp pit	1.7	0.2				Probable
50	Tangle dyke			9.2	0.65	0.5	Definite
51	Kelp pit	1.6					Probable
52	Tangle dyke			6.1	0.85	0.5	Definite
53	Tangle dyke			7.2	0.85	0.55	Definite
54	Tangle dyke			4.3	0.95	0.65	Definite
55	Tangle dyke			4.6	0.65	0.35	Definite
56	Tangle dyke			4	0.65	0.6	Definite
57	Kelp pit	2	0.2				Probable
58	Kelp pit	2.5	0.3				Probable
59	Kelp pit	2.6	0.3				Probable
60	Kelp pit	2.6	0.3				Probable
61	Kelp pit	3.1	0.4				Definite
62	Kelp pit	3.5	0.3				Definite
63	Kelp pit	3.8	0.4				Definite

Appendices

Appendix 1 Sites* and Themes

	Theme 1 (fieldwork emphasis)			Theme 2 (desktop emphasis)			Art & Archaeology
	Theme	**Core Site**	**Peripheral Sites**	**Theme**	**Sites**	**Desktop Sites / Case Studies**	
Eday/ Calf of Eday	Quarrying	Fersness Quarry	Southside Quarry and stone crusher	Peat Cutting & Exportation, Salt production	Calf Sound; Redhill. Calf of Eday salt works, Salt pan houses, Cusbay	Calf Sound Peat Railway	
Egilsay	Mechanisation of Farming	Head of Vady store house / harbour	The Graand				
North Ronaldsay	Mechanisation of Farming	Stennabreck area	Howar grain warehouse; Peckhole windmill	Farming [Livestock Management]		Sheep Dyke and Punds	
Papa Westray	Mechanisation of Farming	Holland Farm (buildings & graffiti)	Hookin Mill, road roller				Holland Farm Graffiti
Rousay	Farming (Corn-drying Kilns)	Saviskaill	Swandale	Peat Cutting & Exportation	Blotchnie Fiold	Peat Roads and Paths	Farm graffiti
Sanday	Kelping	Whitemill Bay		Mechanisation of Farming			
Shapinsay	Public Utilities and Infrastructure	Balfour Gas Works	Petrol pump, wind pump	Farming [Changes in Land Divisions]	Bay of Sandgarth; The Galt; Quoys Of Vaedi	Pre-Improvement Dykes and Buildings	
Stronsay	Kelping	Grice Ness	Latan	Peat Cutting & Exportation	Rothiesholm	Peat Roads and Paths	Farm graffiti
Westray	Mechanisation of Farming	Nether House		Kelping	Kelp walls / pits at Links of Noltland & Aikerness		Farm & ship graffiti
Wyre	Kelping	The Taing					

*Please note, these were provisional sites and areas only and subject to permissions and access.