

**HISTORIC SCOTLAND PROPERTIES IN CARE
MINOR ARCHAEOLOGICAL WORKS 2011**

Fort Charlotte: West Bastion Wall Investigation, August 2011.

HS PIC Index Number: 90145

SITE: Fort Charlotte, Lerwick, Shetland Isles.

N.G.R.: HU 4751 4151

DESCRIPTION: Test trenching to establish the cause of structural cracks within the N and W walls of the W bastion.

PROJECT CODE: HSCO-90145-2011-01

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INTRODUCTION

Under the terms of its Properties In Care (PIC) call-off contract with Historic Scotland, Kirkdale Archaeology was asked to undertake the excavation of two test trenches in the W bastion of Fort Charlotte in Lerwick, the Shetland Islands. Structural cracks and voids had been noted within the N and W walls of the bastion and it was proposed that two test trenches should be manually excavated in order to ascertain the cause of the problem by examining the make-up of the ground and the nature of the wall itself. This phase of work is part of an on-going system of investigation and repair at the fort which has seen the examination and resolution of problem areas within the other bastions, mainly those to the N and E.

A coherent set of phases have been established through the previous work:

- **Phase 1:** The hill before the construction of the earthworks, pre-1665.
- **Phase 2:** The early bank, 1665.
- **Phase 3:** The lower walling, 1665-1701.
- **Phase 4:** The later bank and wall, 1783.
- **Phase 5:** Heightening of the stone ramparts, 1883-1925.
- **Phase 6:** Second World War, 1939-45.
- **Phase 7:** Demolition and landscaping, 1963.

Previous excavations in the E bastion showed that shrinkage of the 17th century earthwork and the resultant void between it and the poorly maintained 18th century masonry walls had caused structural instability characterised by severe cracking and partial collapse of the wall. This current period of work in the W bastion showed that although a partial (but largely negligible) void existed in places between the masonry wall and the earthwork, the present structural issues originated in the later addition of masonry which was poorly bonded and badly maintained.

The work was carried out between 15th - 27th August 2011.

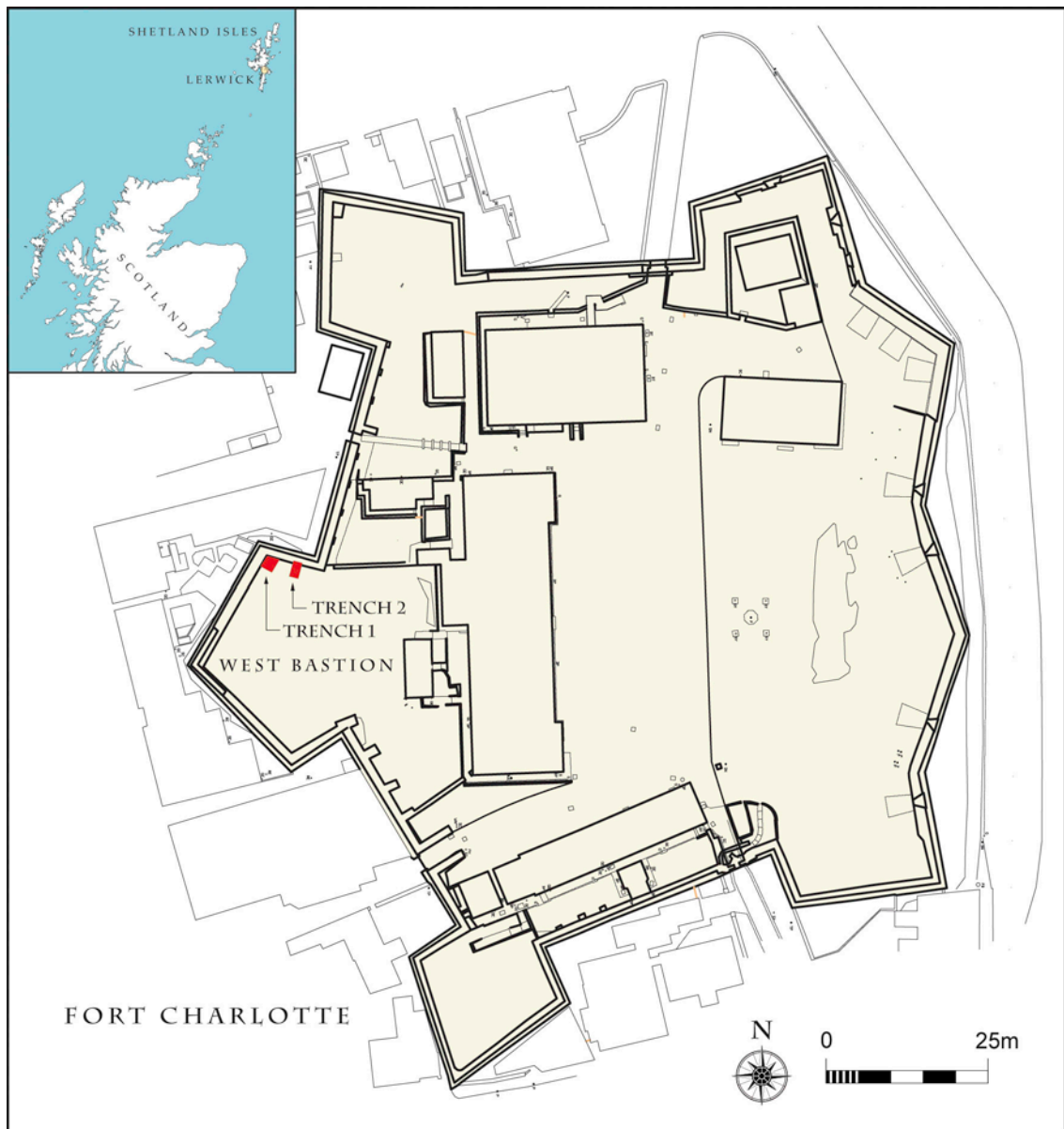


Figure 1: Plan showing the location of Fort Charlotte, along with the site of the present works.

DESCRIPTION

The two trenches excavated were located in the N portion of the W bastion. Trench 1 in the NW corner and Trench 2 centrally against the N wall (see Fig. 1).

The trenches were excavated manually to an appropriate depth before the installation of shoring. As a series of running sections had to be maintained, and as the walls became obscured by the introduction of the shoring, it was necessary to carry out an

appropriate level of wall recording before each phase of the excavation could continue. This recording entailed the detailed drawing of the wall so that it could be related back to the below-ground deposits. The relationships could then be established and recorded as they were exposed.

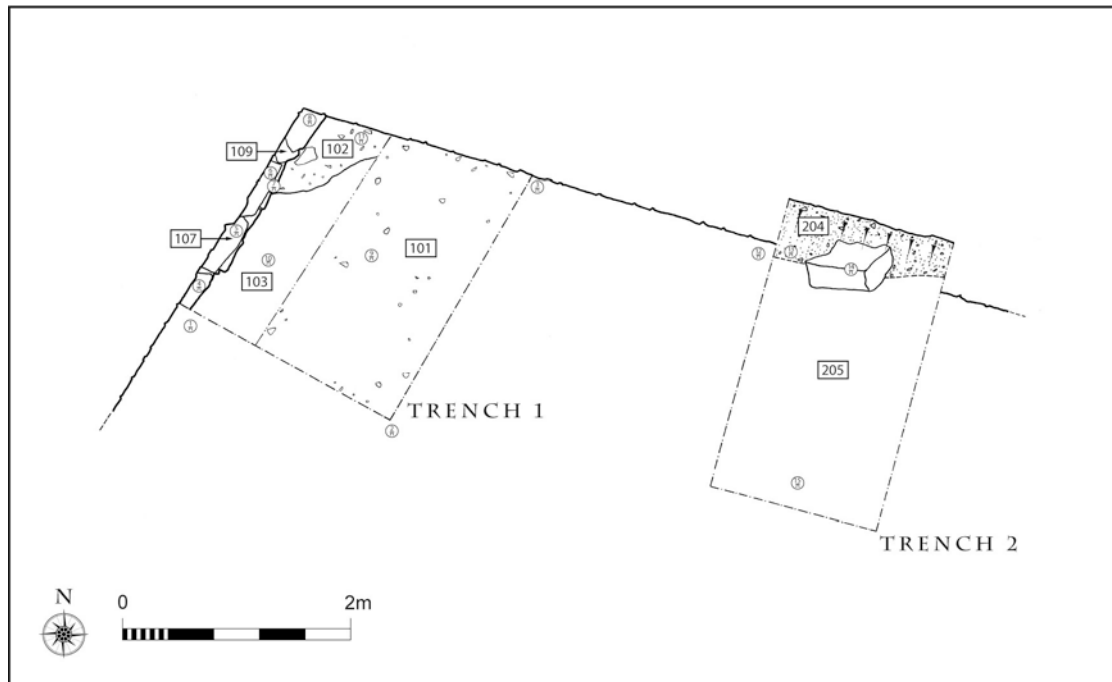


Figure 2: Initial plan of Trench 1 and Trench 2.

TRENCH 1

Trench 1 was located in the NW corner of the W bastion. This trench was intended to allow an examination of the junction between the N and W walls. In plan it measured 2.10m roughly E/W by 2.45m roughly N/S. The original design had a kink in the NE corner which, upon consultation with Historic Scotland, was straightened out, as it would require a less complicated shoring solution. The W wall consisted of a rough upper build **106** of angular pieces of different stone types, ranging from buff-coloured sandstone (sometimes containing pink or white quartz cobbles and rounded pebbles), grey angular granite/dolerite blocks, mid-brown conglomerate and a greenish-grey stone, possibly some form of breccia. The larger pieces of stone had smaller angular pinnars of similar rock types in between them. Several of the sandstone pieces carried a vertical drill scar on their faces c.2cm wide – this echoed similar scarring on the bedrock outcrop supporting the exterior W and SW corners of the bastion. The wall

was heavily re-pointed and carried a wide angled course of copes (1.70m wide) at its apex, slanting upwards from N to S. The wall stood around 2.08m high internally (at least 3.45m externally) and was affected by a structural crack, up to 5cm wide in places, running in a ragged course from N to S, 0.3m - 1m above the ground. Earlier attempts had been made to seal the crack with mortar, but it had simply opened up again. A quick probe showed that a further wall face lay in behind, at a distance of 0.65m - 0.70m. Build 106 was carried on a 0.20m wide, poorly-bonded, projecting masonry foundation 107, consisting of angular blocks of buff-coloured sandstone and greyish granite. This build had either become heavily voided, or partially re-built to the N, where a further projecting area of masonry 109 carried build 106 above. Context 109 was in a state of near-collapse, its masonry held together by a loose matrix of mortar-flecked silt (one large stone slipped out of the wall at an early stage, reinforcing the need for adequate shoring). Contexts 107 and 109 were carried on a further masonry build 108, consisting of large angular basal sandstone blocks bonded with lime mortar. This course was up to 0.40m thick, and was recessed back from 107 by 5cm.

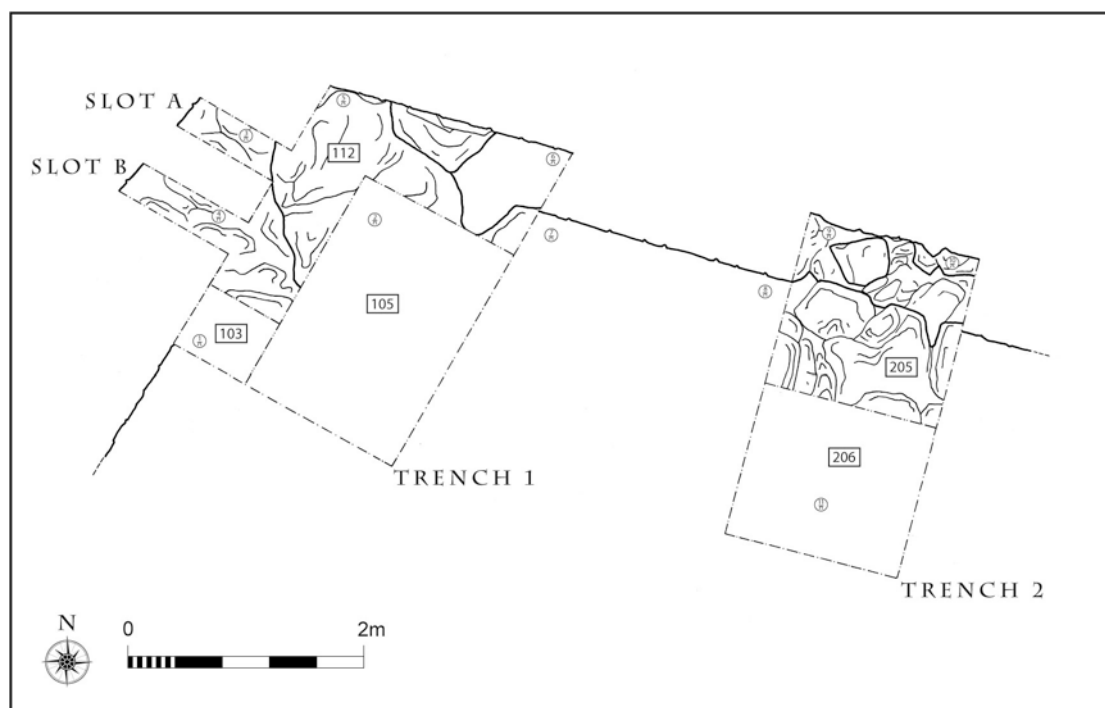


Figure 2: Final plan of Trench 1 and Trench 2.

The N wall again consisted of a rough upper build **113** composed of angular pieces of different stone types, ranging from buff-coloured sandstone (sometimes containing pink or white quartz cobbles and rounded pebbles), grey angular granite/dolerite blocks, mid-brown conglomerate and greenish-grey breccia. The larger pieces of stone had smaller angular pinnars of similar rock types in between them. Several of the sandstone pieces again showed signs of a vertical drill scar, c.2cm wide. The wall was heavily re-pointed and carried a wide angled course of copes (1.05m wide compared to 1.70m in the W wall) at its apex, slanting upwards from E to W. The wall stood approximately 2.10 - 2.15m high internally (at least 4.20m externally) and was affected by a structural crack, up to 3cm wide in places, running in a ragged course from E to W, approximately 0.20m - 0.30m above the ground.

The initial excavation was intended to be to a depth of 0.50m, at which point appropriate levels of recording would be undertaken followed by shoring. The uppermost fill consisted of turf 7-10cm thick overlying a mixed black silty topsoil matrix **101** containing lots of modern material such as glass, metal, plastic, tyres, batteries and modern ceramics – the area had apparently been used as the town dump during the 20th century. The layer was 0.35m - 0.60m deep. Where this layer of modern disturbance met the N wall it overlay a mixed spread of silt and mortar **102**, again full of modern glass and ceramics. This layer was 0.40m thick against the N wall, and appears to be associated with the addition of wall face **113**. Artefacts recovered from the void between the internal and external wall skins in Trench 2 show that this work was carried out during the 20th century. The silt and mortar spread also continued around the corner, where it was shown to be related to the insertion of masonry **109** at the NW corner of the W wall. The modern inclusions within this layer indicate that masonry builds **106**, **109** and **113** are all 20th century rebuilds.

Below the modern dump layer and 20th century pointing was a thick, heavy pungent-smelling organic layer of peat **103** up to 0.70m thick, within which there were no modern finds. Several pipe stems and pieces of ceramic were recovered, sealed within **103**. When first exposed to the air, the layer was a bright orangey-brown which very

quickly oxidised to dark grey. The impression was that this layer was a levelling layer associated with the late-18th century campaign of raising and embellishing the inherited earthwork and walls of the late-17th/early-18th century.

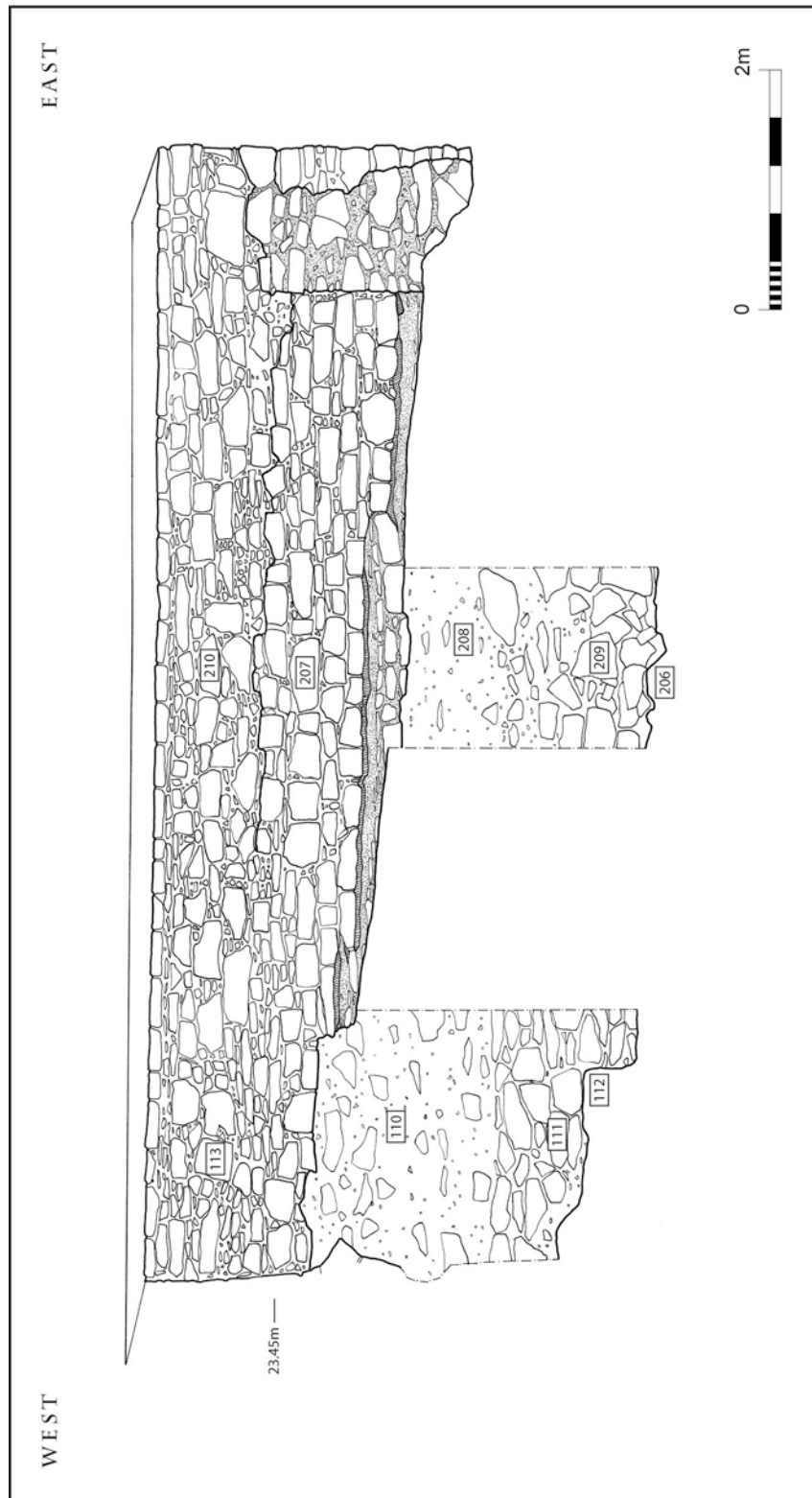


Figure 4: S-facing elevation of N wall with Trench 1 and Trench 2.

On the N wall a clear division became visible when the peat layer **103** was excavated. The wall layer **110** associated with the build up of the peat was heavily pointed with lime mortar, again with a build of angular rock pieces - although these were largely obscured by the pointing. The interface below the pointed wall and the peat had a layer of mixed lime pointing, silt and peat **104**, which was completely free of artefacts, and was up to 0.20m thick, thinning back from the wall itself. Below this and the turf **103**, was a further, more compact turf bank **105**, up to 0.90m thick. This layer was again a thick, heavy pungent-smelling organic layer. No artefacts were recovered from it. This is likely to be the original 17th century earthwork. Associated with it (and most easily observables on the N wall) was a build of angular pieces of sandstone and granitic rock up to 1.2m high, bonded in lime mortar **111**. The precise form of the fort of 1665 is not clear in terms of whether it originally had stone walls or whether these are a later addition. Typically there was enough of a void between the wall and peat layer **105** to make this relationship indistinct. The turf bank itself cleared on to an undulating layer of bedrock **112**, containing several natural clefts within which there was a mixture of sand and shale. No artefacts were recovered from this layer.

The difficulties of working amongst the shoring in Trench 1 meant that after the initial excavation of 0.50m, the depth then dropped to 1m, and an L-shaped sondage was used to expose the relationship between the wall and the bedrock. This sondage was 0.70m wide against the W wall, and up to 0.85m wide against the N wall. The sondage was dug in spits and shored as it was excavated. The total excavated depth in Trench 1 was 2.35m. In addition, a portion of the N wall (20th century rebuild/repair **113**) that measured 1.80m E/W x 0.30m high had to be removed as part of the works. This was photographed beforehand, and was in such poor repair that the removal of the deposits below it would have rendered it unsafe to work beneath. After an on-site consultation with the Historic Scotland engineer, it was decided that the structural instability of the W wall could be solved by cutting two slots through the peat deposits **103** and **105**. Each slot was 0.30m wide and they were 0.40m apart. This allowed two brick pillars to be bedded on the exposed bedrock, immediately adjacent to the

battered internal wall, and up and under foundation **108**. Their installation should prevent further movement.



Figure 5: N-facing section and profile through the W wall (Trench 1).

TRENCH 2

Trench 2 was located against the N wall of the W bastion, some 2.20m E of Trench 1. This trench was intended to allow an examination of the central portion the N wall together with the fall of the bedrock between the two trenches. In plan the trench measured 1.50m E/W by 2.20m N/S (at ground level). The W wall consisted of a rough upper build **210** of angular pieces of different stone types, ranging from buff-coloured sandstone (sometimes containing pink or white quartz cobbles and rounded pebbles), grey angular granite/dolerite blocks, mid-brown conglomerate and a greenish-grey stone, possibly some form of breccia. The larger pieces of stone had smaller angular pinnars of similar rock types in between them. The build was heavily re-pointed and

carried a wide angled course of copes (1.05m wide compared to 1.70m in the W wall) at its apex, slanting upwards from E to W. The wall stood around 2.10m - 2.15m high internally (at least 4.20m externally) and was affected by a structural crack, up to 3cm wide in places, running in a ragged course from E to W through a protruding, added, masonry build **207**, approximately 0.20m - 0.30m above the ground. Within this added build, several of the sandstone pieces carried a vertical drill scar on their faces 2cm wide. This echoed similar scarring on the bedrock outcrop supporting the exterior W and SW corners of the bastion.

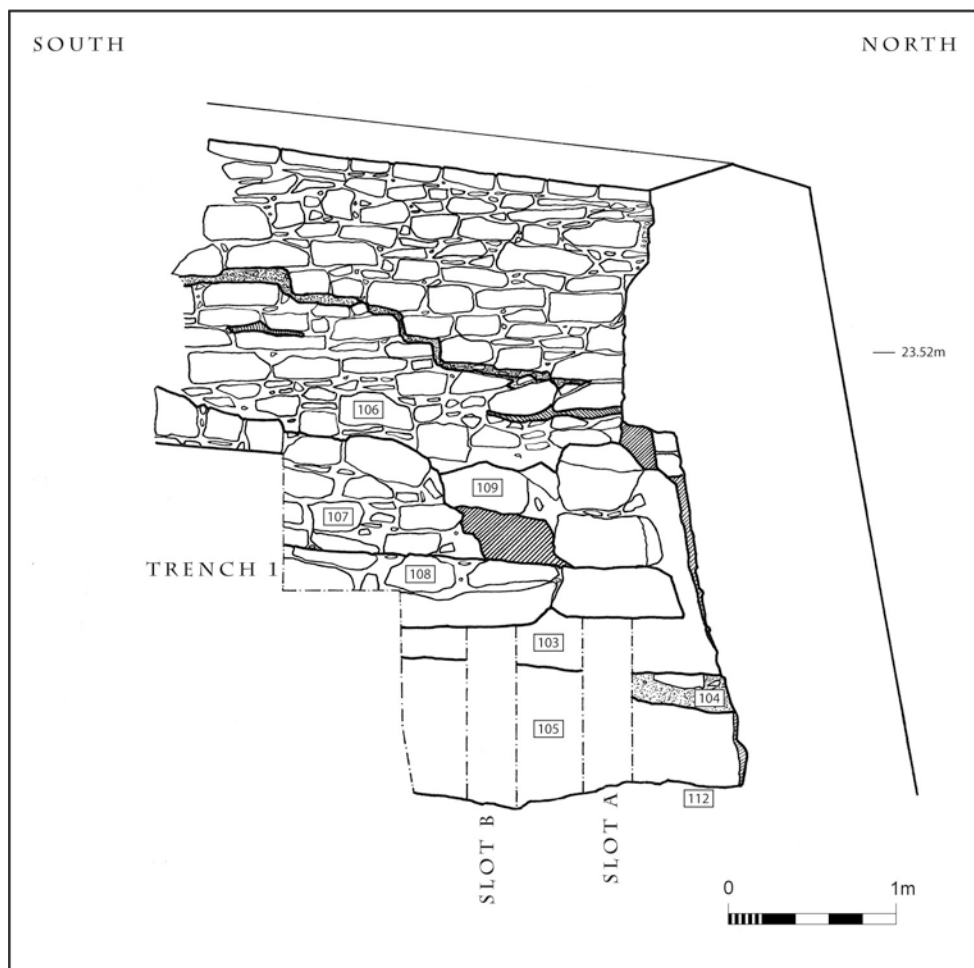


Figure 6: E-facing section and elevation of the W wall (Trench 1).

The initial depth of excavation was to be 0.50m, at which point appropriate levels of recording would be followed by shoring. The uppermost fill consisted of turf, 7cm - 10cm thick, overlying a mixed black silty topsoil matrix **201** containing lots of modern material such as glass, metal, plastic, tyres, batteries, modern ceramics and part of a

Hoover – again associated with the 20th century town dump. This layer was 0.30m - 0.40m thick. Where this layer of modern disturbance met the N wall it overlay a mixed spread of silt and mortar **202**, again full of modern glass and ceramics. This layer was 0.30m - 0.40m thick against the N wall, and appears to be associated with the addition of the wall face **207**. Artefacts (such as a modern-style, paper-labelled whisky bottle) recovered from the void between the internal and external wall skins showed that this work was carried out sometime during the 20th century. Below the modern dump layer and 20th century pointing was a thick, heavy pungent-smelling organic layer of peat **203**, some 0.30m - 0.70m thick, within which there were no modern finds. When first exposed to the air, the layer was a bright orangey-brown which very quickly oxidised to dark grey. The impression again was that this deposit was a levelling layer associated with the late-18th century campaign of raising and embellishing the inherited earthwork and walls of the late-17th/early-18th century.

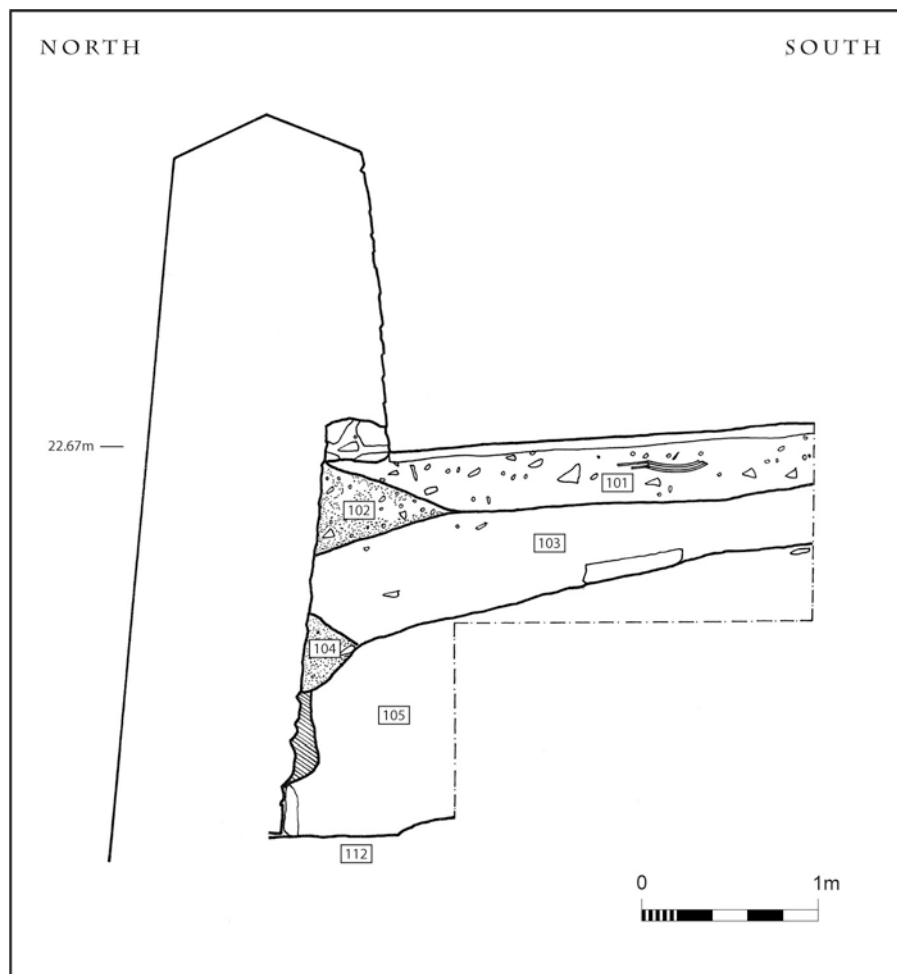


Figure 7: W-facing section and profile through the N wall (Trench 1).

On the N wall a clear division became visible when the peat layer **203** was excavated. The wall layer **208** associated with the build up of the peat was heavily pointed with lime mortar, again with a build of angular rock pieces, although these were largely obscured by the pointing. This was first exposed when the initial slots were cut in order to fit the primary shoring. The interface below the pointed wall and the peat had a layer of mixed lime pointing, silt and peat **204** which was completely free of artefacts and was up to 0.40m thick, thinning back from the wall itself. Below this and the turf **203** was a further, more compact turf bank, **205**, up to 1m thick.

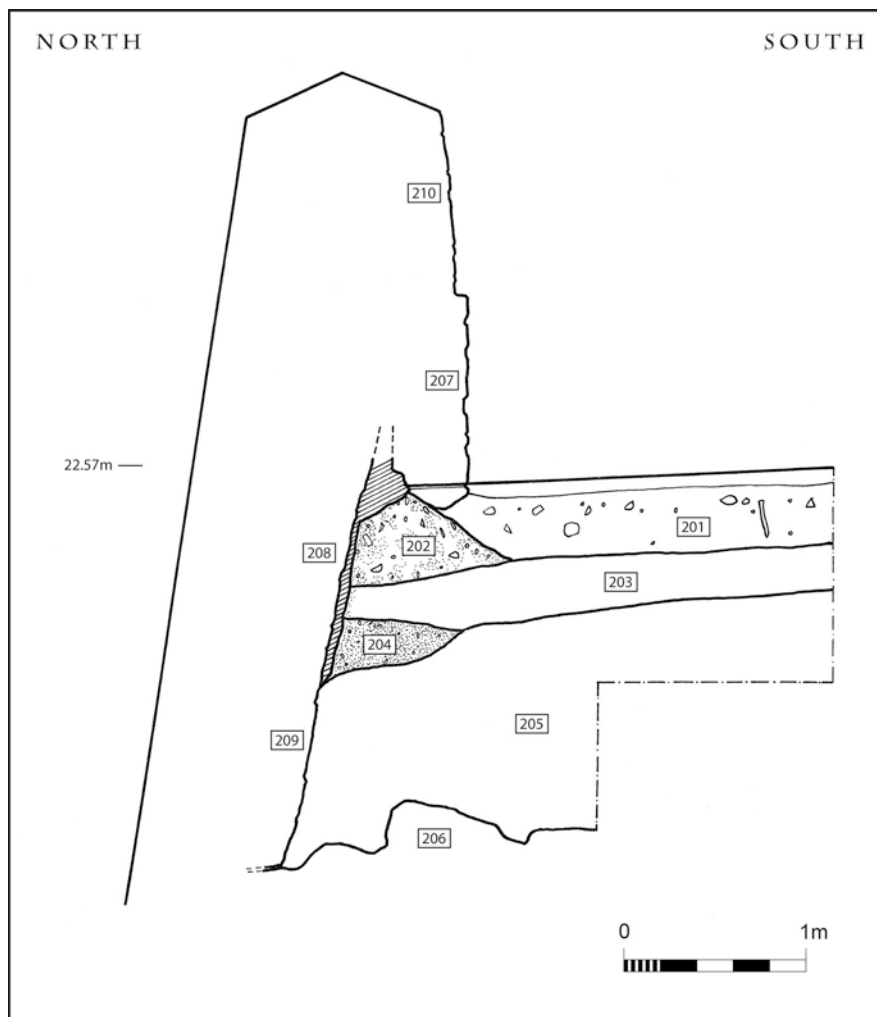


Figure 8: W-facing section and profile through the N wall (Trench 2).

This layer was again a thick, heavy pungent-smelling organic layer. No artefacts were recovered from it. This is likely to be the original 17th century earthwork – associated with it (and most easily observed on the N wall) was a build of angular pieces of

sandstone and granitic rock, up to 1.2m high, bonded in lime mortar **209**.

Unfortunately, there was enough of a void between the wall and peat layer **205** to make this relationship indistinct – it is not clear if the fragments of mortar are falling from the wall to fill the void or whether they are part of the process of the wall and bank being brought up together and therefore being contemporary. The turf bank itself cleared on to an undulating layer of bedrock **206**, containing several natural clefts within which there was a mixture of sand and shale. Unfortunately no artefacts were recovered from this layer and although it was difficult (nearly impossible) to get clean, it was possible that the angular, clefted surface exposed indicated that the bedrock had been partially quarried prior to the installation of the earthwork. This may in turn suggest that the stone was either being quarried for a contemporary wall, or possibly for buildings within the fort.

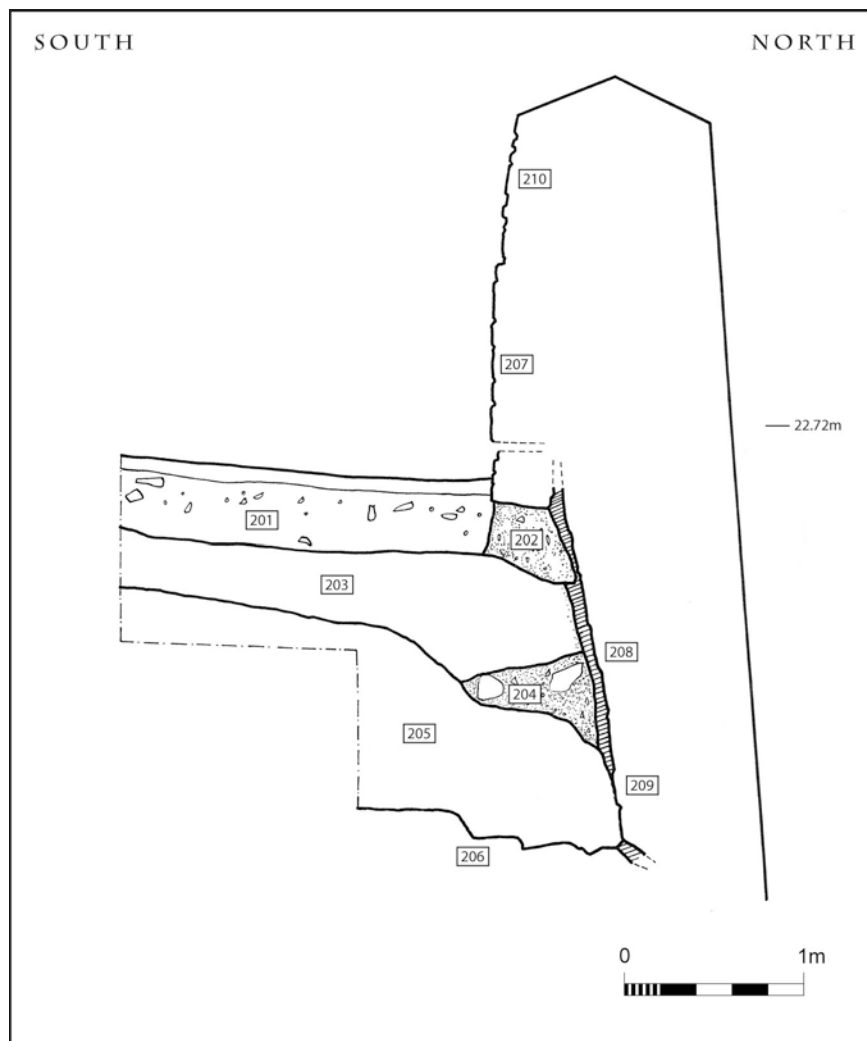


Figure 9: E-facing section and profile through the N wall (Trench 2).

After the removal of the initial 1.2m of fill, the Historic Scotland engineer requested that the work concentrated on the exposure of the relationship between the wall and the bedrock. Thus the southern 1.3m of the trench were excavated to a depth of c.1.2m, while the northern end of the trench was 2.2m deep. The exposure of the angled N wall and the bedrock in Trenches 1 and 2 allowed the instability problem to be solved by building a brick wall directly on the bedrock to support the bastion wall.

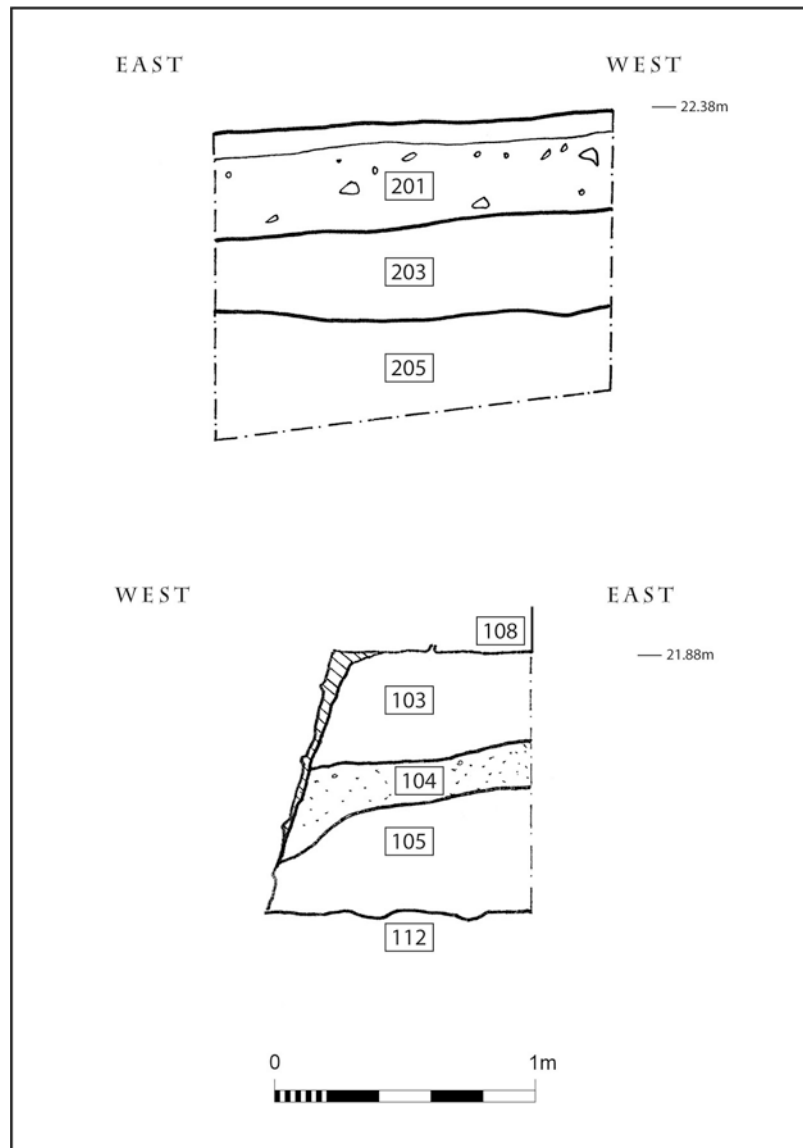


Figure 10: N-facing section in Trench 2 (top),
and S-facing section in Trench 1.

CONCLUSIONS

The root of the structural problems in the West Bastion appeared to be threefold:

- 1 Modern additions which have sought to dress the battered wall have been ineffective and there is often no core between the internal and external masonry skins. This means that the weight of the masonry is not being properly distributed, and the uneven load has therefore caused structural fissures.
- 2 These fissures allow water to percolate through the wall and gather at the junction of the peat and bedrock. If the water can exit through the wall it can generally carry off pointing with it. Voiding is quite common at the base of the wall but it is not in as poor a condition as the exposed masonry added much more recently at ground level.
- 3 The peat bank, while doing a good job of generally backing up the wall, goes into compression as the wall above ground starts to list back in to the fort. This again allows movement ,which in turn causes structural cracks to appear.

The engineering solutions so far suggested take the onus off the peat as a structural support, and instead would see the wall propped from bedrock to masonry on brick pillars cut through the peat (in the case of the W wall) and on a wall built from bedrock to masonry against the N wall. This still requires the removal of the archaeological deposits in order to allow enough room for this work to occur. By its very nature this will divorce the deposits from the historical structural elements. It is therefore recommended that the remaining excavation be carried out archaeologically in order to retrieve the maximum amount of information from the site.

LIST OF CONTEXTS

No.	Description	Phase
101	Turf and modern black silty topsoil	7
102	Upper mortar and silt spread	5/ 6
103	Upper peat layer	4
104	Lower mortar and silt spread	4
105	Lower peat layer	2
106	Upper portion of W wall	5/ 6
107	Stepped portion of W wall	5
108	Recessed portion of W wall below 107	5
109	Slumped corner masonry of W wall	5/ 6
110	Upper heavily pointed angled masonry of W wall	4
111	Lower lightly pointed angled masonry of W wall	2/3
112	Bedrock, sand and shale	1
113	Masonry build of N wall in Trench 1	5/ 6
201	Turf and modern black silty topsoil	7
202	Upper mortar and silt spread	5/ 6
203	Upper peat layer	4
204	Lower mortar and silt spread	4
205	Lower peat layer	2
206	Bedrock, sand and shale	1
207	Added masonry skin	5/ 6
208	Upper heavily pointed angled masonry of W wall	4
209	Lower lightly pointed angled masonry of W wall	2/3
210	Upper wall masonry over 207	5/6

LIST OF DRAWINGS

No.	Type	Description	Scale
001	Elevation	E-facing elevation of W wall in Trench 1	1:20
002	Section	N-facing section and profile through W wall in Trench 1	1:20
003	Section	W-facing section and profile through N wall in Trench 1	1:20
004	Plan	Initial plan of Trench 1	1:20
005	Elevation	S-facing elevation of N wall with Trenches 1 and 2	1:20
006	Section	E-facing section and profile through N wall in Trench 2	1:20
007	Section	N-facing section of Trench 2	1:20
008	Section	W-facing section and profile through N wall in Trench 2	1:20
009	Plan	Initial plan of Trench 2	1:20
010	Plan	Final plan of Trench 2	1:20
011	Plan	Final plan of Trench 1	1:20
012	Section	S-facing section of Slot A in Trench 1	1:20
013	Section	S-facing section of Slot B in Trench 1	1:20

LIST OF DIGITAL PHOTOGRAPHS

No.	Description	From	Date
1	Pre-excavation shot	S	15/8/2011
2	NW angle and N wall of W bastion	S	15/8/2011
3	Interior W bastion wall	SE	15/8/2011
4	Interior W bastion wall	NS	15/8/2011
5	Interior W bastion wall	N	15/8/2011
6	Pre-excavation shot	S	15/8/2011
7	Pre-excavation shot	SE	15/8/2011
8	N wall of W bastion E end	S	15/8/2011
9	N wall of W bastion W end	S	15/8/2011
10	W wall of W bastion from N/S	E	15/8/2011
11	W wall of W bastion from N/S	E	15/8/2011
12	W wall of W bastion from N/S	E	15/8/2011
13	W wall of W bastion from N/S	E	15/8/2011
14	W wall of W bastion from N/S	E	15/8/2011
15	W bastion	NW	15/8/2011
16	W bastion	W	15/8/2011
17	Exterior of W bastion W wall	NW	15/8/2011
18	Exterior of W bastion W wall	SW	15/8/2011
19	Trenches 1 and 2 de-turfed	SE	15/8/2011
20	Work in progress, Trench 2	S	15/8/2011
21	Work in progress, Trench 1	E	15/8/2011
22	Trench 2 with prop holes	S	16/8/2011
23	Trench 2 with prop holes	S	16/8/2011
24	E-facing section of Trench 2 prior to shoring	E	16/8/2011
25	Prop holes and E-facing section of Trench 2 prior to shoring	SE	16/8/2011
26	Trench 2 W prop hole, mortar layer, outer masonry skin and battered inner masonry	SE	16/8/2011
27	Trench 2 W prop hole, mortar layer, outer masonry skin and battered inner masonry	S	16/8/2011
28	Trench 2 E and W prop holes	S	16/8/2011
29	Trench 2 E prop hole and battered inner masonry	S	16/8/2011
30	Trench 2 view of inner masonry and void to exterior wall	S	16/8/2011
31	Trench 1 prior to shoring	E	16/8/2011
32	Trench 1 N-facing section prior to shoring	N	16/8/2011
33	Trench 1 and N wall prior to shoring	S	16/8/2011
34	Original masonry at the SE angle of the NW bastion	S	17/8/2011
35	Original masonry at the SE angle of the NW bastion	W	17/8/2011
36	Reduced fort wall, lowered in the 1960's to light the Fisherman's Mission	SW	17/8/2011
37	Gate and buttresses in W wall between the W and N bastions	E	17/8/2011

No.	Description	From	Date
38	Angled masonry in the SW wall of the W bastion	SE	17/8/2011
39	Angled masonry in the SW wall of the W bastion	N	17/8/2011
40	Buttresses and wall at the SW gate	NE	17/8/2011
41	Angled masonry and added outer skin in the NW wall of the SW bastion	SE	17/8/2011
42	Angled masonry and added outer skin in the NW wall of the SW bastion	E	17/8/2011
43	Angled masonry and added outer skin in the NW wall of the SW bastion	S	17/8/2011
44	SW bastion and buildings behind	SE	17/8/2011
45	SW bastion and buildings behind	E	17/8/2011
46	S facing elevation of the barracks	S	17/8/2011
47	S facing elevation of the prison	N	17/8/2011
48	Batons and shoring in Trench 2	SW	18/8/2011
49	Batons and shoring in Trench 2	S	18/8/2011
50	Batons and shoring in Trench 2	S	18/8/2011
51	E-facing section of Trench 2	E	18/8/2011
52	N-facing section of Trench 2	N	18/8/2011
53	W-facing section of Trench 2	W	18/8/2011
54	W-facing section of Trench 1	W	18/8/2011
55	W-facing section of Trench 1 N end	W	18/8/2011
56	W-facing section of Trench 1 S end	W	18/8/2011
57	N-facing section of Trench 1	N	18/8/2011
58	S-facing section of Trench 1	S	18/8/2011
59	Void between walls in Trench 2	W	19/8/2011
60	Void between walls in Trench 2	W	19/8/2011
61	Void between walls in Trench 2	E	19/8/2011
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63	Exposed peat layer in Trench 2	S	19/8/2011
64	Exposed peat layer in Trench 2	S	19/8/2011
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66	Exposed battered wall in Trench 2	S	19/8/2011
67	Exposed battered wall in Trench 2, W side	S	19/8/2011
68	Exposed battered wall in Trench 2, E side	S	19/8/2011
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70	E-facing elevation of Trench 1 and slipped masonry	E	20/8/2011
71	E-facing elevation of Trench 1 and slipped masonry	SE	20/8/2011
72	S-facing elevation of Trench 1	S	20/8/2011
73	S-facing elevation of Trench 1	S	20/8/2011
74	Working shot, drawing Trench 2	SW	22/8/2011
75	Shoring in Trenches 1 and 2	SE	22/8/2011
76	Spoil heap	NE	22/8/2011
77	Large stone and mortar spread in Trench 2	S	22/8/2011
78	Large stone and mortar spread in Trench 2	S	22/8/2011

No.	Description	From	Date
79	Mortar and peat in E-facing section of Trench 2	E	22/8/2011
80	E-facing section of Trench 2 and shoring	E	22/8/2011
81	Trench 2 and shoring	S	22/8/2011
82	S-facing elevation of Trench 1 before removal of damaged masonry	S	22/8/2011
83	S-facing elevation of Trench 1 before removal of damaged masonry	S	22/8/2011
84	E-facing elevation of Trench 1	E	22/8/2011
85	E-facing elevation of Trench 1	E	22/8/2011
86	E-facing elevation of Trench 1	E	22/8/2011
87	Masonry slippage in the S-facing elevation of Trench 1	S	22/8/2011
88	Clearance of slipped masonry in the S-facing elevation of Trench 1	S	22/8/2011
89	Clearance of slipped masonry in the S-facing elevation of Trench 1	S	22/8/2011
90	E-facing elevation of Trench 1	E	22/8/2011
91	S-facing elevation of Trench 1, shoring being fitted	S	22/8/2011
92	Shoring in Trench 1	SE	22/8/2011
93	Shoring in Trench 1	SE	22/8/2011
94	Trench 2, working shot	S	22/8/2011
95	Trench 2, working shot	S	22/8/2011
96	Trench 1, shoring and L-shaped sondage	S	23/8/2011
97	Trench 1, shoring and L-shaped sondage	S	23/8/2011
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100	E-facing section of Trench 2 showing mortar and peat	E	23/8/2011
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102	Trench 2, lower face of N wall	S	23/8/2011
103	Trench 1, working shot	SE	23/8/2011
104	Trench 1, working shot	SE	23/8/2011
105	N end of the W-facing section (upper) in Trench 1	W	23/8/2011
106	N end of the W-facing section (lower) in Trench 1	W	23/8/2011
107	N end of the W-facing section (lower) in Trench 1	W	23/8/2011
108	N wall and void in Trench 1	S	23/8/2011
109	N wall, E-facing section and void in Trench 1	SE	23/8/2011
110	Void in N wall in Trench 1 (W end)	SE	23/8/2011
111	Void in N wall in Trench 1 (W end)	SE	23/8/2011
112	Void in N wall in Trench 1 (E end)	S	23/8/2011
113	E-facing section in sondage in Trench 1	E	23/8/2011
114	Interface of N and W walls in Trench 1	SE	23/8/2011
115	N wall and bedrock in Trench 2	SE	23/8/2011
116	Props, voided wall and sondage in Trench 1	E	23/8/2011
117	Trench 2, cleaning bedrock	S	25/8/2011
118	Looking S at N wall of W bastion	N	25/8/2011

No.	Description	From	Date
119	Looking S at N wall of W bastion	N	25/8/2011
120	NW wall of W bastion (exterior)	W	25/8/2011
121	NW wall of W bastion (exterior)	W	25/8/2011
122	NW wall of W bastion (exterior)	W	25/8/2011
123	NW wall of W bastion (exterior)	NW	25/8/2011
124	NW wall of W bastion (exterior)	SW	25/8/2011
125	Pointing dated '1930' on exterior of the NW wall of the W bastion	W	25/8/2011
126	Pointing dated '1930' on exterior of the NW wall of the W bastion	W	25/8/2011
127	Location shot of pointing dated '1930' on exterior of the NW wall of the W bastion	NW	25/8/2011
128	NW wall of W bastion (exterior)	SW	25/8/2011
129	SW wall of W bastion (exterior)	S	25/8/2011
130	SE wall of W bastion (exterior)	SE	25/8/2011
131	Drilled bedrock at SW corner of W bastion (exterior)	SW	25/8/2011
132	SE exterior wall of W bastion (lower)	SW	25/8/2011
133	SE exterior wall of W bastion (upper)	SW	25/8/2011
134	Masonry build of SE exterior wall of W bastion	SE	25/8/2011
135	Wall and cannons of E bastion	N	25/8/2011
136	E bastion and bedrock outcrop	NE	25/8/2011
137	Barrack block from E bastion	E	25/8/2011
138	Looking N from E bastion	S	25/8/2011
139	W corner of the W bastion	NE	25/8/2011
140	Buttresses at the W gate	NE	25/8/2011
141	Interior of the SW wall of the W bastion	NE	25/8/2011
142	W corner of the W bastion	E	25/8/2011
143	NW corner of the W bastion	SE	25/8/2011
144	NW wall of the W bastion (interior)	SE	25/8/2011
145	E-facing section and bedrock in Trench 2	E	25/8/2011
146	E-facing section and bedrock in Trench 2	E	25/8/2011
147	W-facing section and bedrock in Trench 2	W	25/8/2011
148	Interface of battered wall and bedrock in Trench 2	S	25/8/2011
149	Interface of battered wall and bedrock in Trench 2	S	25/8/2011
150	Post-excavation shot of bedrock and wall in Trench 2	S	25/8/2011
151	Post-excavation shot of bedrock and wall in Trench 2	S	25/8/2011
152	Post-excavation shot of bedrock and wall in Trench 2	SE	25/8/2011
153	Post-excavation shot of bedrock and wall in Trench 2	S	25/8/2011
154	Post-excavation shot of bedrock and wall in Trench 2	S	25/8/2011
155	Wall and peat layer in the E-facing section of Trench 1	E	25/8/2011
156	Wall and peat layer in the E-facing section of Trench 1	E	25/8/2011
157	Voided wall in the E-facing section of Trench 1	E	25/8/2011
158	E-facing elevation of Trench 1	E	25/8/2011
159	E-facing elevation of Trench 1	E	25/8/2011

No.	Description	From	Date
160	Shoring over the E-facing elevation of Trench 1	E	25/8/2011
161	N-facing elevation of Trench 1	N	25/8/2011
162	Baulk in SW corner of Trench 1	N	25/8/2011
163	Peat and mortar in E-facing section of Trench 1	E	25/8/2011
164	Overhanging masonry in NW corner of Trench 1	E	25/8/2011
165	Props against the E-facing elevation of Trench 1	NE	25/8/2011
166	Props against the E-facing elevation of Trench 1	NE	25/8/2011
167	Baulk in SW corner of Trench 1	E	25/8/2011
168	Peat and mortar in E-facing section of Trench 1	E	25/8/2011
169	Battered wall and added masonry skin in Trench 1	E	25/8/2011
170	N wall with voids in Trench 1	S	25/8/2011
171	N wall with voids in Trench 1, W end	S	25/8/2011
172	N wall with voids in Trench 1, E end	S	25/8/2011
173	Propped masonry at N wall of Trench 1	S	25/8/2011
174	Traverse wall to NW bastion	S	25/8/2011
175	Looking SE from the NW bastion	NW	25/8/2011
176	N sondage cleared to bedrock in Trench 1	S	26/8/2011
177	N sondage cleared to bedrock in Trench 1, W end	S	26/8/2011
178	N sondage cleared to bedrock in Trench 1, E end	S	26/8/2011
179	Post-excavation shot of N wall and bedrock in Trench 1	S	26/8/2011
180	Post-excavation shot of N wall and bedrock in Trench 1	S	26/8/2011
181	Lower portion of the W-facing section at the N end of the N sondage in Trench 1	W	26/8/2011
182	Upper portion of the W-facing section at the N end of the N sondage in Trench 1	W	26/8/2011
183	N wall and bedrock in Trench 1, E part	S	26/8/2011
184	N wall and bedrock in Trench 1, W part	S	26/8/2011
185	Cutting S slot in E-facing section of Trench 1	E	26/8/2011
186	Cutting S slot in E-facing section of Trench 1	SE	26/8/2011
187	Cutting S slot in E-facing section of Trench 1	E	26/8/2011
188	The Kirkdale archaeologists, beside Trench 1	SE	26/8/2011
189	Cutting S slot in E-facing section of Trench 1	E	26/8/2011
190	Cutting S slot in E-facing section of Trench 1	E	26/8/2011
191	Cutting S slot in E-facing section of Trench 1	E	26/8/2011
192	Post-excavation shot of the S slot, in the E-facing section of Trench 1	SE	26/8/2011
193	Battered wall to the rear of the S slot in the E-facing section of Trench 1	E	26/8/2011
194	Bedrock and battered wall in the S slot in the E-facing section of Trench 1	E	26/8/2011
195	Bedrock and battered wall in the S slot in the E-facing section of Trench 1	E	26/8/2011

No.	Description	From	Date
196	Post-excavation shot of the S slot and props in the E-facing section of Trench 1	E	26/8/2011
197	Post-excavation shot of the S slot and props in the E-facing section of Trench 1	E	26/8/2011
198	Post-excavation shot of the N slot in the E-facing section of Trench 1	E	26/8/2011
199	Post-excavation shot of the N slot in the E-facing section of Trench 1	E	26/8/2011
200	Bedrock and battered wall in the N slot in the E-facing section of Trench 1	E	26/8/2011
201	Post-excavation shot of the S slot and props in the E-facing section of Trench 1	E	26/8/2011
202	Post-excavation shot of the N and S slots in the E-facing section of Trench 1	E	26/8/2011
203	Post-excavation shot of the N slot in the E-facing section of Trench 1	E	26/8/2011
204	Post-excavation shot of the N slot in the E-facing section of Trench 1	E	26/8/2011
205	Post-excavation shot of the S slot and props in the E-facing section of Trench 1	E	26/8/2011
206	Post-excavation shot of the S slot and props in the E-facing section of Trench 1	SE	26/8/2011
207	Post-excavation shot of the N and S slots in the E-facing section of Trench 1	SE	26/8/2011
208	Post-excavation shot of Trench 1, with slots and props	S	26/8/2011
209	Post-excavation shot of Trench 1	S	26/8/2011
210	Post-excavation shot of bedrock and N wall in Trench 1	S	26/8/2011
211	Post-excavation shot of the N and S slots and props in the E-facing section of Trench 1	E	26/8/2011
212	Upper shoring and props in Trench 1	E	26/8/2011
213	Post-excavation shot of Trench 1	E	26/8/2011
214	Post-excavation shot of Trench 1	S	26/8/2011
215	Post-excavation shot of Trench 1	S	26/8/2011
216	Copy of the 1878 plan of Lerwick with (detail)	N/A	26/8/2011

LIST OF FINDS

No.	Type	Quantity	Context	Description
001	Ceramic	1	103	Sherd (40mm x 30mm) of a plate or platter with an olive green and yellow glaze on its upper side. Possible 'rim' decoration on its base. Orange fabric.
002	Ceramic	1	103	Sherd (25mmx20mm) similar to 001. Possible plate/platter fragment with a yellow glaze featuring an ochre stripe on its upper surface. Orange fabric.
003	Ceramic	1	103	Basal sherd of unglazed orange fabric (250mm x 300mm).
004	Ceramic	13	101	Miscellaneous fragments of 19th/20th century crockery – transfer wares and plain white ware.*
005	Ceramic	11	201	Fragments from a single mug. White glazed, with the lettering YMCA.*
006	Ceramic	1	105	Fragment of porcelain (20mm x 15mm) featuring a blue decoration on white background.
007	Ceramic	18	102	Miscellaneous fragments of 19th/20th century crockery (identical to 004).*
008	Clay pipe	9	103	Miscellaneous stems.
009	Clay pipe	1	103	Small bowl fragment (17th century).
010	Clay pipe	3	105	Miscellaneous stems.
011	Glass	1	103	Fragment of window glass. Greenish in colour and heavily abraded (700mm x 450mm).
012	Glass	15	101	Miscellaneous modern vessel fragments representing green, brown and clear glass bottles and jars.*
013	Glass	4	102	Clear glass vessel and/or jar fragments.
014	Glass	1	102	Clear glass bottle neck and stopper.*
015	Bone	9	103	Miscellaneous animal bones.
016	Bone	1	103	Bird bone.
017	Bone	1	101	Bird bone.*
018	Bone	1	105	Bird bone.*
019	Bone	15	102	Miscellaneous animal bones.*

* Discarded.

SUMMARY

This assemblage confirms:

- The peat bank (103 / 105) is a sealed context with dateable finds.
- There is extensive evidence of 19th and 20th century activity.

LIST OF SAMPLES

No.	Trench	Context	Description	No. of Bags
1	1	103	Upper peat	1 of 1
2	1	105	Lower peat	1 of 1
3	1	104	Lower silt and mortar	1 of 1
4	2	202	Upper silt and mortar	1 of 1
5	2	203	Upper peat	1 of 1
6	2	204	Lower silt and mortar	1 of 1
7	2	205	Lower peat	1 of 1

LIST OF LEVELS

Drawing	Level Number and Value
001	String = 23.52
002	String = 23.09
003	String = 22.67
004	1=22.92 2=22.89 3=22.67 4=23.02 5=23.00 6=22.85 7=22.57 8=22.93 9=22.59 10=22.42 11=22.40 12=22.53 13=21.32 14=21.53 15=21.86
005	String = 23.45
006	String = 22.72
007	String = 22.38
008	String = 22.57
009	1=22.09 2=21.84 3=20.88 4=20.92 5=20.90 6=20.49 7=22.79 8=22.53 9=20.35 10=20.29 11=21.39
010	String = 21.88