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# Blackhouse H: Method statement for the repair of collapse on the south gable



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Supported by:



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## 1. Summary

This report comprises the method statement for the repair of an extensive collapse to the south gable of blackhouse H, Village Bay, St Kilda. The location of the structure in question is given in figure 1. A brief background to the structure in question is given, followed by a description of the collapse, the methods to be employed during repairs, and the nature of archaeological monitoring which will be undertaken throughout the course of the works. A short statement of pertinent measures to be taken to ensure Health and Safety during the works is also included. In summary, the key points of the methodology are:

- Repairs will be undertaken by professional drystone dykers with experience working on the vernacular architecture of St Kilda.
- The repair shall be 'stone-for-stone' where possible.
- Where additional materials are required, these will be appropriate to St Kildan building traditions and sourced on-island.
- It may be necessary to increase the structural strength of the main body of the wall for safety reasons and to allow the reinstatement of the gable which rests upon it, if so, this will be done using appropriate local materials and vernacular building styles, and will not be visible externally
- All works will be supervised by an appropriately qualified and experienced archaeologist who will provide advice and undertake 'watching brief' duties.
- The works will be carried in compliance with Health and Safety guidelines.

## 2. Village Bay, the Blackhouse - background.

The archipelago of St Kilda, lying some 64km west of the Outer Hebrides, off the west coast of Scotland, has an internationally significant natural and cultural heritage resource recognised by its dual World Heritage Site (WHS) status. The islands have a number of national and international designations including as a Site of Special Scientific Interest, Special Area of Conservation and National Nature Reserve. Archaeological remains over extensive areas on the largest island, Hirta, are Scheduled Monuments (SM). The islands are owned by the National Trust for Scotland (NTS) and managed according to a Management Plan agreed to by key stakeholders Historic Scotland (HS), Scottish Natural Heritage, the Ministry of Defence, and Comhairle nan Eilean Siar.

The primary settlement area on St Kilda historically was in Village Bay, Hirta, much of which now lies within an extensive area designated as a Scheduled Monument. St Kildan dwellings from the 19<sup>th</sup> and 20<sup>th</sup> centuries lie along an informal street which roughly bisects the agriculturally productive lands in Village Bay from east to west – a large head dyke encloses these infield areas and the settlement. It is this street with its evocative abandoned buildings which is perhaps the most iconic image of the World Heritage Site. Although perhaps not particularly well understood in social and cultural terms or in the wider context of the Hebrides and north Atlantic sea region as a whole (Fleming 2005), the nature, dating, and use of these structures is well documented (Harman 1997 & Stell and Harman 1988). There were two primary phases of 'Improvement' on St Kilda, the first of which, starting around 1830, resulted in an extensive transformation of the landscape from a nucleated settlement set within agricultural lands shared using the runrig system to a more formalised linear settlement with distinctive 'crofts' where land was owned individually (Fleming 2005, 128-138; Gannon 2015, 92-115 & Harman 1997, 149-150). It was during this phase that blackhouse H was constructed. A second phase of improvement in the first few years of the 1860's saw the introduction of 'houses' on each croft – these were cottages of a more standardised and non-vernacular design, often incorporating out-sourced materials (Harman 1997, 150-152). After the construction of these cottages, the earlier blackhouses continued to play a role as ancillary croft buildings, and many blackhouses saw significant alterations during this later period – including blackhouse H.

The blackhouse is a type of dwelling specific to the western coasts and islands of Scotland, although it is part of a wider and highly regionalised tradition (Grant 1960: chapter 7). The character of blackhouses is relatively well understood and has been discussed elsewhere in terms of appearance (Ferguson 2009), use, and construction (Grant, Isobel Frances 1960: chapter 7; Holden 2004; Walker and McGregor 1996) even with specific examples from St Kilda (Fleming 2003: 130). On St Kilda itself there have been a number of excavations to blackhouses and other 19<sup>th</sup> century structures (Emery 1996; Quine 1983). Several repairs to blackhouses in recent years have yielded archaeological information described in St Kilda Archaeologist's annual reports (Bain 2003; Grant, 2013 & 2014), and in dedicated Data Structure Reports (DSR) (McHardy 2011 and Grant 2014). It is therefore fair to say that the blackhouses of St Kilda, including Blackhouse H, are fairly typical of those found in other places in the western isles (Holden 2004; Walker and McGregor 1996), although one significant difference is that there is currently no evidence for the blue clay capping found at the top of the walls on Lewis on St Kilda (McHardy 2011).

Given the wider research context of such structures, the value of the blackhouses on St Kilda such as blackhouse H is perhaps more cultural than archaeological. The important cultural values of the built structures of St Kilda are widely recognised (Scottish Executive 2003) – guidance concerning the preservation and conservation of such structures is an important part of the management of the St Kilda World Heritage site as outlined in the St Kilda management plan, it is these principles which inform the methodology given below.

### **3. Blackhouse H - Current condition and collapse**

Blackhouse H, like all the blackhouses on Hirta is unroofed but has been in a reasonably stable condition since at least 1995, when regular, detailed condition monitoring began. It was surveyed in 1998 as part of a wider programme of condition monitoring in village bay (Johnstone 1998b). The detailed description given then is reproduced below:

#### *“Blackhouse ‘H’*

*This blackhouse does not have a northern abutting annex but stands in isolation from other structures. This structure faces to the west which initially seems unusual, however, on examination of Sharbau's map the differences between that time and the plan of the current village layout are quite striking. On Sharbau's map blackhouse 'H' does not appear to exist, however there is a building marked as a 'manure house'. Whether they are one in the same or a blackhouse was built on the site at a later date is unclear. In 'Buildings of St Kilda' (RCAHMS) the structures are marked as being one in the same but the differences in scale between blackhouse 'G' and blackhouse 'H' on the map when compared with the true dimensions of the buildings as they stand today would suggest that this is not necessarily the case. Blackhouse 'H' is on the McDonald croft, that is, croft number eight on Sharbau's plan. We can further note from the 1861 plan that a further blackhouse was destroyed to make way for the construction of house No 8. This was the house of the McDonalds and the eastern section has since been excavated by Norman Emery of the University of Durham. It is possible that blackhouse 'H' is an adaptation of the manure house indicated on Sharbau's plan. The doorway faces to the west presumably because of the drainage channel between structures 'G' and 'H' and the fact that that some shelter was given by the now destroyed blackhouse. Alternatively blackhouse 'H' could be a later structure built on the site of the manure house which faces to the west simply because the drainage channel was already in existence. To remove the deep drainage channel simply in order that blackhouse 'H' could face to the east may have seemed more trouble than it was worth.*

*This structure is gabled at both the northern and southern ends and, as previously stated, the doorway and window are within the western facing wall. The blackhouse measures*

approximately 6.25m by 2.90m and within the south-western corner there is evidence of a drainage channel. The doorway is approximately 1.75m in height and 1.0m in width and remains lintelled. The window which is to the north of the doorway, measures 0.60m by 0.60m and is roughly 1.0m from the current ground level. The interior walling varies in height. The southern gable end is approximately 3.10m in height while the northern gable survives at a height of 2.50m. The northern gable is largely subterranean on the exterior side. The western and eastern walls are 1.75m and 1.90m in height respectively and all walls are tied except in the south-west corner where the walls abut at ninety degrees. Within the eastern wall (approximately 1.75m from the south-east corner) there is evidence of an eroded tethering pin while further to the north in the same wall is a blocked vent or drainage channel. This blocked feature was more likely to have been for drainage purposes as it would seem to lead to the stream like channel which runs between blackhouses 'G and 'H'. Some areas of walling exhibit the remains of mortar, particularly the gables. Within the northern gable there are the remains of wooden roofing rafters protruding from the exterior of the structure.

*The overall condition of this structure is fairly good, however there are areas of weakness. Within the structure there are considerable amounts of ladyfern particularly within the northern wall. Although not as destructive as bracken the presence of foliage within the walls can only serve to weaken the structure. Despite the ladyfern the earthen core of the structure appears to be in good overall condition and has not leached as badly as in other blackhouses. The window only retains one of its original lintel stones towards the interior of the feature. The other lintels appear to have been removed or fallen away at some point in the past. The exterior of the structure has suffered from a degree of collapse in the south-eastern corner. Stonework has tumbled from the upper levels on the structure exposing the earthen core to the elements. The eastern wall is situated above a deep drainage channel and if further collapse were to occur there would be great difficulty working on the reconstruction of the building.'*

The southern gable end of this building collapsed on the 23<sup>rd</sup> July 2016 following a period of heavy rain. In the absence of the St Kilda Archaeologist, the site was made safe by the St Kilda Ranger, Kirsten Dallas and the appropriate authorities, including Historic Environment Scotland, informed. There had been no prior suggestion that this wall was any more unstable than others along the street, but given that the adjoining southern gable of blackhouse G collapsed in 2014 and that of blackhouse B in 2011, this collapse is not unexpected. The clean interior of the blackhouse and presence of two squared timbers, respectively 1.10m by 120mm by 60mm and 0.40m+ (one end being buried in the stone tumble) by 100mm by 70mm, within the collapsed stone suggests this gable of the blackhouse has already been altered by NTS work parties. It is probable that these timbers originally formed part of the roof framework, as the larger piece has a fragment of tarred felt adhering to it.

### **Phasing**

Croft No 8 was owned by John McDonald (1811-1889) and remained with his family until Malcolm Macdonald died in 1929 (Lawson 1993, 24). It was unoccupied at the time of the evacuation the following year.

Blackhouse H lies immediately east of outside House 8 the significant excavations were carried out here by Durham University to examine the remains of a blackhouse demolished to build House 8. The excavations of this blackhouse and deposits below revealed material evidence suggesting occupation dating to both the Iron Age and Norse periods, as well as more recent times (Emery 1996, 39-105).

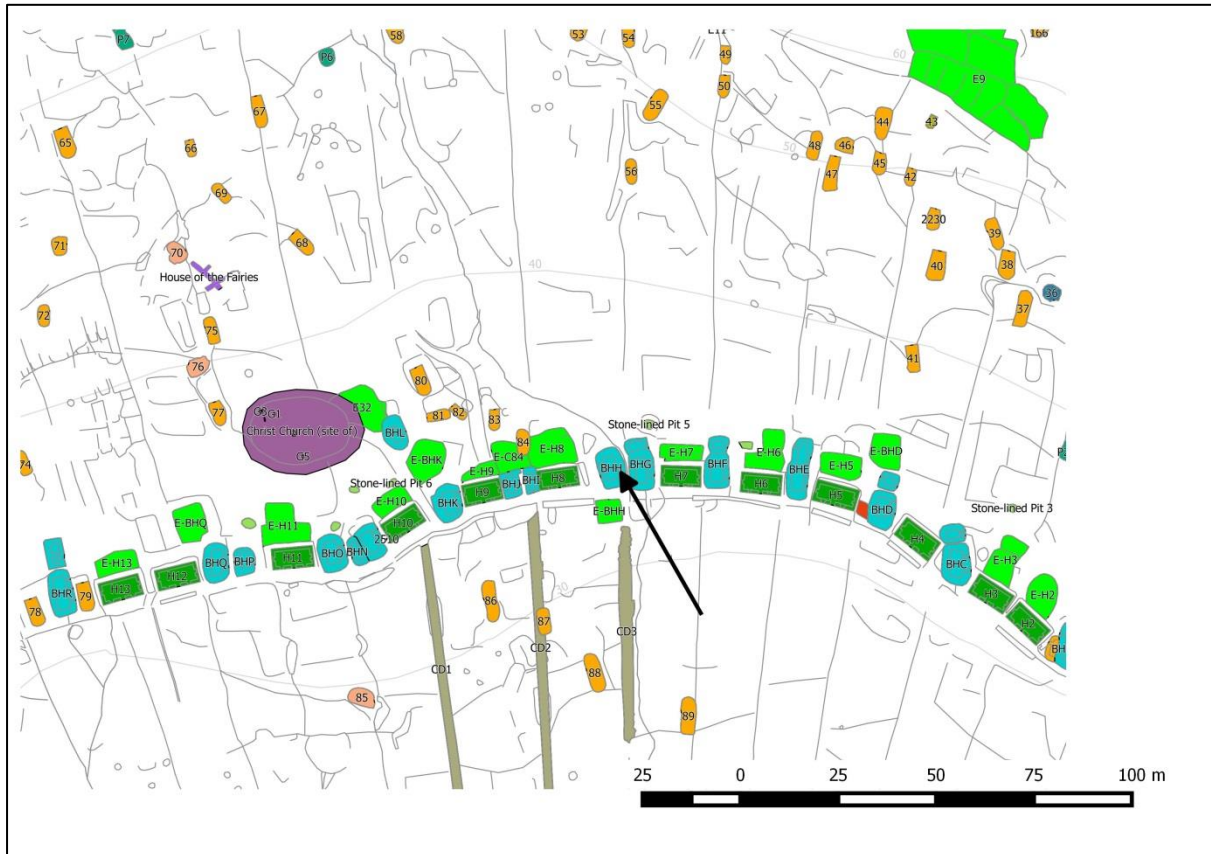


Figure 2 Location of Blackhouse H within Village

It is presumed to have been constructed around 1830, around the same time that the street was constructed and the land was apportioned into crofts. Johnstone's analysis above, based on the Sharbau map, suggests that the form of the Blackhouse was significantly altered after 1858 from a 'Manure House' to its present form. The iron (?) tethering pin in the east wall and drain in the south west corner suggest it may have been used latterly as a byre, but there are no other indications of its earlier use. It has always remained smaller than blackhouse G to the east as can be seen in Mathieson's survey of 1928. Indeed the current reference to it as a blackhouse is perhaps misleading, referring more to the building style than the building's use.



Figure 2 Blackhouse H as recorded by Norman Emery in 1987 (?)

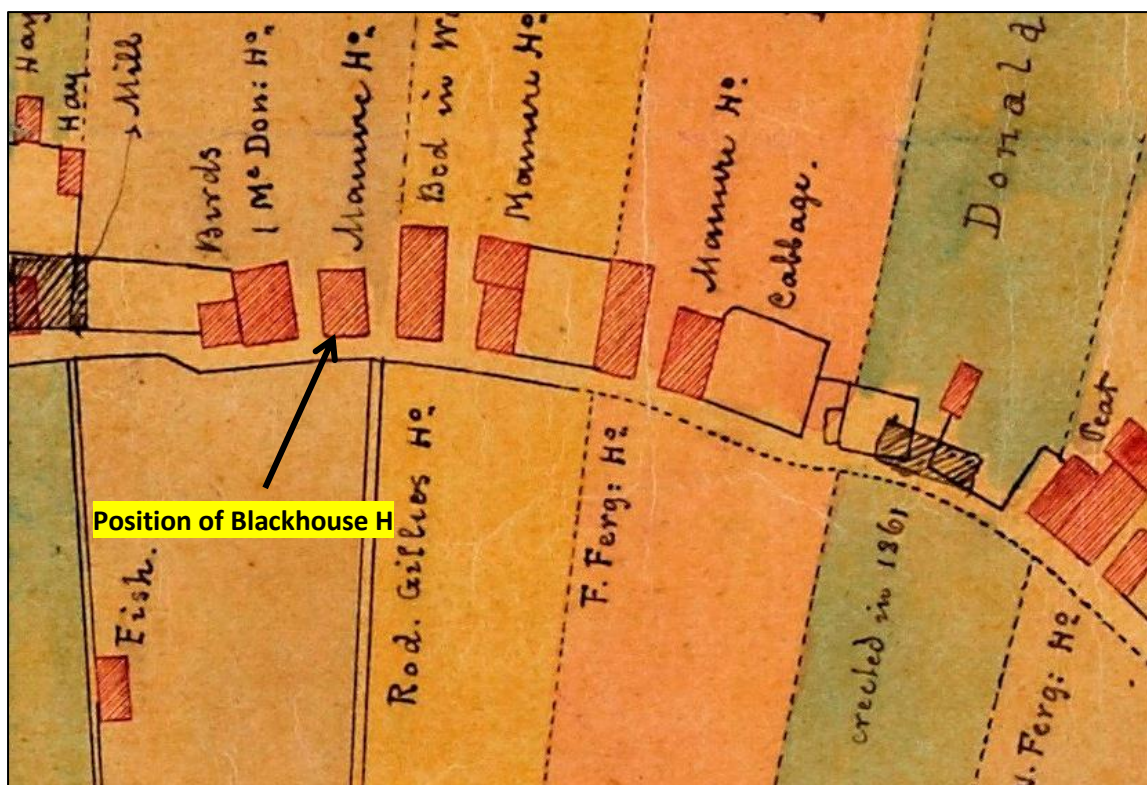


Figure 3 Sharbau 1858 Plan of St Kilda

It also appears in the background of a photograph of House 8 taken in 1883 by D Whyte (reproduced in Ross A 1893, 84 and also shown in Emery, 103) as a well-coursed thatched building held down by a neat pattern of ropes weighted by stones. Though some stones are similar to those currently surviving in the west wall of the building, the southwest corner is not identical to the stonework prior to the current collapse. Indeed it is possible the current doorway has been inserted or altered to its current form. The pitch of the roof, though confused with the form of the roof of blackhouse G behind is sharper than might be anticipated for a blackhouse-style of building and appears to reach the same height as the nearby, more modern mortared buildings. It is possible, therefore, that the current pitched gable head was already extant at this date. Emery (p186) suggests the chinks between the stones of this building were plastered with manure and records a sample (101-2) from the south wall of blackhouse H also contained human excrement.

The building is also shown in 1938 and is here still roofed with a more ruinous blackhouse G behind House 8 (Atkinson *Illustration 10*). This shows a felted roof over sarking and possible evidence of corrugated iron, though the latter might have been limited to the gable end. The felting was tarred as still evidenced above the door and on occasional stones on the wallhead, The photograph also shows a fragment of turf and possible thatching in the south west corner and a line of large stones along the gable edge.

There are no records of repair or reconstruction works carried out to blackhouse H since the National Trust for Scotland's ownership (1957), although detailed recording did not occur until the late 1990s. However a monitoring photograph taken in 1987 (fig7), appears identical to one taken in 2008 and so it is assumed that no works have taken place since at least 1987, however the presence of squared timbers in the collapse may indicate intervention in the late 20<sup>th</sup> century

Atkinson, writing about his visit in 1938, (p235) states 'Each house had its byre beside it, end-on to the street.. The byre roofs were usually thatched and most of them had fallen in by now. The interior was often filled up with a heap of manure-like thatch, black, sodden and nourishing weeds grown rank from the richness at their roots. Fallen rafters were tumbled anyhow, though the byres roofed with planking and felt had lasted better. The floors were beaten earth which remained hard though wet and slimy. The walls were drystone, sometimes plastered in the common mud-pie style of peasantry; in this case cow manure slapped into the chinks and still showing the plasterers' fingerprints.'

When this change occurred is not known, but is likely to have had a significant impact on the structural form of this building.

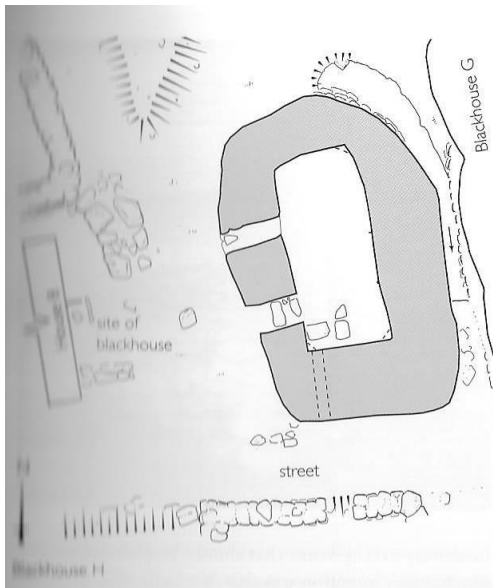
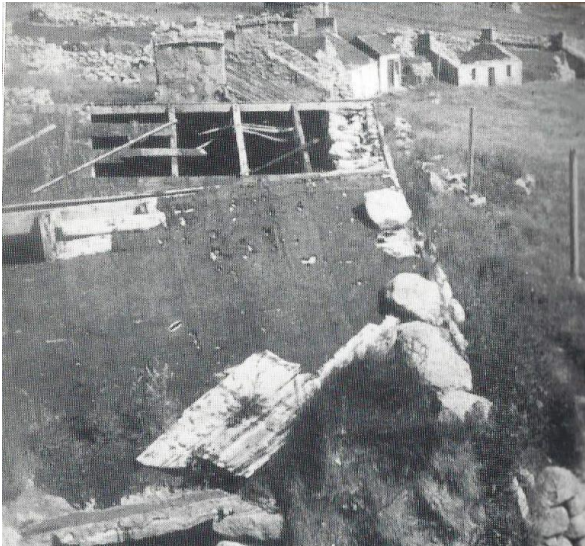


Figure 4 Blackhouse H as surveyed by RCAHMS (scanned image from Gannon & Geddes, p101)



Figure 5 House 8 with blackhouses H and G behind 1883 (D Whyte in Emery p103)



*Figure 6*        *Roofs of blackhouses G and H as surviving in 1938 (Atkinson Illustration 10 - see also Emery p105).*

#### **4. Repair methodology**

The collapse presents two immediate problems:

1. The obstruction caused to the path by the rubble and the health and safety danger this presents to the public.
2. The damage to the historic fabric of the building and the visual obtrusiveness of the collapsed material on the street.

The methodology suggested here is derived from similar experience and practice carried out following other blackhouse structural collapse within the Village on Hirta by the preferred contractor, Innes Watson of Highland Stonecraft. This company has completed a number of repairs to similar structures on St Kilda, including repairs to blackhouse G (Grant 2014 – see Appendix A) and blackhouse B (McHardy 2011) . Advice was also sought from the St Kilda archaeological consultant Kevin Grant who devised the methodology for the 2014 works and from which this methodology is derived. The works are subject to Scheduled Monument Consent and conform to agreed procedure as described in the NTS and Historic Environment Scotland Management Agreement for St Kilda. For this purpose the works will aim to reinstate the collapsed stonework or at the very least stabilise it in advance of the tourist season beginning in 2017. The external stonework of the blackhouse will be replaced stone-for-stone where possible, using a collection of several monitoring photographs of the blackhouse from the 1990s and 2000s as reference. The repair will be undertaken re-using the original materials, but where additional materials are needed they will be sourced on island.

There are several areas of concern regarding the repairs. Innes Watson, the contractor, has concerns that the collapse was partially caused by the added weight of the dry stone upper gable resting on top of the end-wall of the blackhouse. This structure is possibly a later addition and is in some ways contrary to the blackhouse building tradition (Walker and McGregor 1996), although certainly it is within the a vernacular tradition of drystone building on St Kilda. As a result of the concerns from the contractor, it is intended that there will be a concerted attempt to strengthen the load-bearing capacity of the main body of the blackhouse wall during repairs. This may be undertaken by giving the infill of the wall a

higher component of rubble or a greater number of packing stones than would originally have been utilised. If this is the case, the materials will be locally sourced and the change will not be visible externally. This has proved a satisfactory process for the reconstruction of blackhouse G.

In addition, the main body of the wall will be constructed first, and then its stability assessed by the contractor. Bearing in mind the height of the structure (3.1m) and its position adjacent to the street, any instability in the structure presents an unacceptable health and safety risk to the public. If the contractor believes the main structure is stable enough to support the weight of the extended gable, then it will be constructed. If not, the stonework used for the gable will be organised and stored in a fashion which will preserve the lichen patina and allow for stone-for-stone replacement at a later date, and discussions will then take place with partners to find a method of increasing structural stability of the blackhouse wall.

There are also some unknowns in regard to the fabric of the blackhouse structure. Johnstone and the RCAHMS plan above record the line of a drain under the south gable – the condition of this feature and its impact on the structural integrity of the building are not known. There is also a lack of knowledge regarding the extent of previous work party repairs to the structure – if these are indeed present, it is likely that this will become quickly apparent. If areas of 1980's repair for example can be identified, there will be less onus to repair the structure stone for stone, and instead it may be more appropriate to repair the structure in such a way as to improve structural stability whilst also maintaining a 'St Kildan' vernacular style to the stonework, this will of course be subject to consent and advice from the St Kilda Archaeologist. With these points in mind the basic 'steps' to be followed during the repair are listed below.

**1. Clearance of rubble.** Rubble to be sorted and laid out to allow for identification of stones to allow for stone-for-stone repair.

**2. Stabilising of collapse.** Further removal of stones may be necessary to create a stable foundation for repair

**3. Rebuild of collapse to main body of blackhouse.** This will be undertaken using a stone-for-stone rebuilt where possible. Any additional material such as core material will be sourced locally and will be made visually unobtrusive.

**4. Assessment of stability of main structure.** Contractor will assess the structure to decide if it is structurally stable enough to take the weight of the gable. **If the structure is suitably stable then 5a, if not 5b.**

**5a. Rebuild of gable.** Following stone-for-stone method where possible, any changes or addition of material needed will be completed using locally sourced materials and will be visually unobtrusive.

**5b. Store stone for gable appropriately.** The gable stones will be stored nearby, lichen-face up, to preserve lichen patina and ensure stone is kept collated and can be easily identified at a later date. Suggestions for making the structure more stable will be discussed with partners to allow for full repair.

## **5. Archaeological monitoring**

All works will be overseen by the St Kilda Archaeologist (SKA) who will provide advice and archaeological oversight. The works are not expected to be invasive – as it is not likely to be necessary to remove further parts of the structure.

The condition of the collapse initially will be recorded using photography and note-taking, and the structure will be assessed after the clearance of rubble. Although the in-fill will be trowel-cleaned to assess the nature of the deposits, there is no intention towards formal archaeological excavation. The deposits as exposed by the collapse will be recorded through note-taking, photography, and measured sketching. If more archaeologically significant deposits are discovered to be present, more formal drawings will be completed,

with the option of sampling available in exceptional circumstances. The archaeological monitoring, excavation, and recording will be undertaken in accordance with the standards suggested by the Institute for Archaeologists. Finds will be disposed of in accordance with the St Kilda finds policy, which has been agreed by appropriate stakeholders and curatorial bodies.

The results of the archaeological watching brief are intended to be reported in detail in the St Kilda Archaeologist's annual report, with the option of a dedicated DSR available if the results are more archaeologically informative or the works more extensive than anticipated. The works will be reported in Discovery and Excavation in Scotland (DES). More generally, the entirety of the repair process will be extensively recorded using photography and note-taking for posterity.

## **6. Health and Safety Concerns**

All works will be carried out to an approved method statement and in compliance with the Trust's Safe Systems of Work. This will include the use of scaffolding and appropriate protective clothing where needed. Any archaeological works will be undertaken in compliance with policies for Health and Safety outlined by the Institute for Archaeologists.

J Wordsworth  
St Kilda Archaeologist  
16<sup>th</sup> August 2016



Figure 7 *Blackhouse H west gable as surviving in 1987 & 2008*



Figure 8 *Blackhouse H interior view of south gable as surviving in 2008 and August 2016*



Figure 9 Detail of collapsed stonework of south gable of blackhouse H in July 2016



Figure 10 South gable of blackhouse G, as reconstructed in 2014 after its collapse, with image from 2008 above of gable before its collapse

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