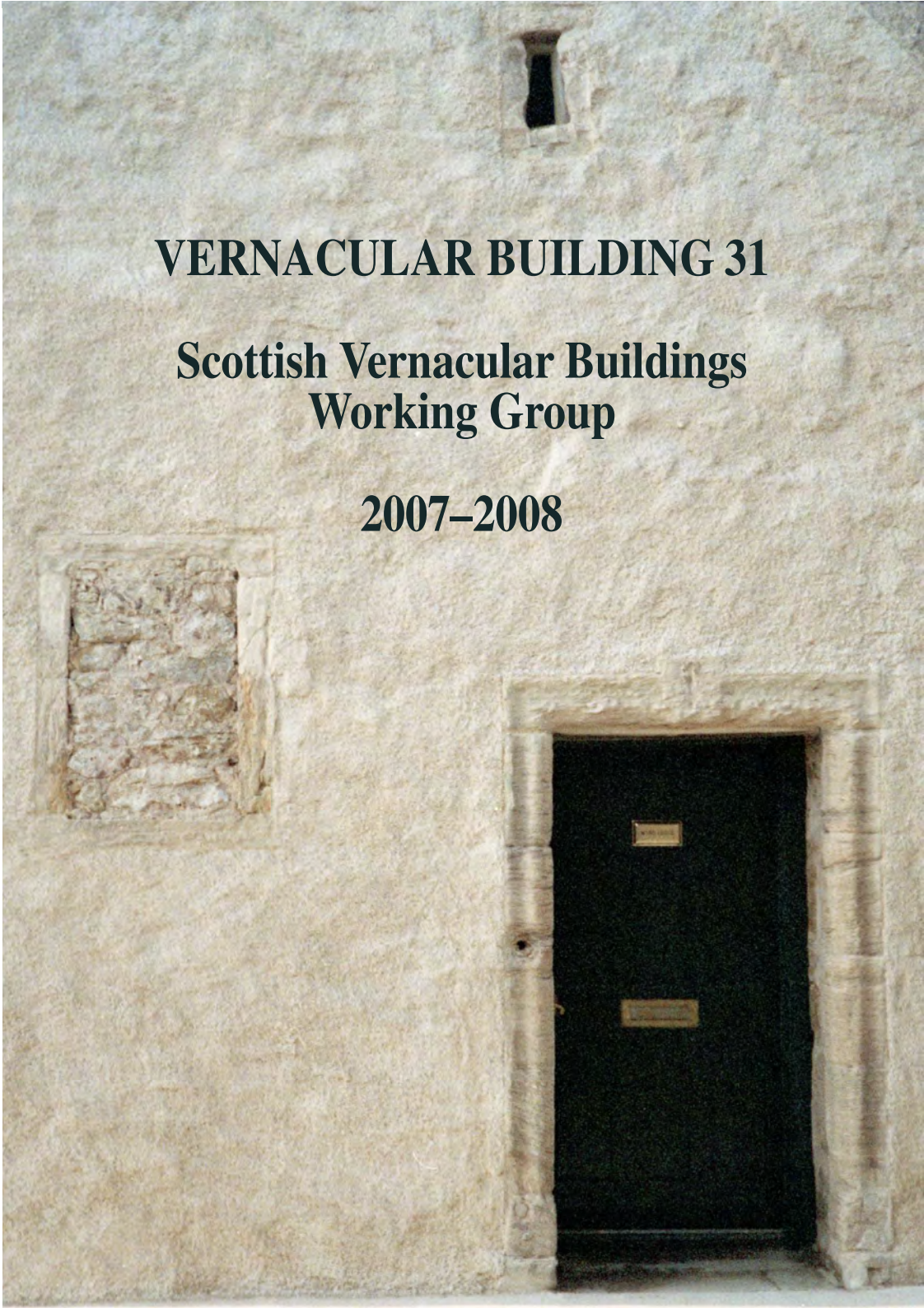
VERNACULAR BUILDING 31

Scottish Vernacular Buildings Working Group

2007–2008



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The SVBWG is most grateful to RCAHMS for its financial support of John Sherriff's contribution.

PREFACE

After a themed 30th issue focusing on 'Furniture and Fittings in the Traditional Scottish Home', *Vernacular Building* returns to its usual widely varying range of subjects for this, its 31st issue.

The opening article is a comprehensive account of Richard Craig's restoration of Wynd Lodge, Elie, Fife in the few years since he purchased the building in 2003. This formidable undertaking has seen the house transformed from a sad, damp, grey, cement-smothered shadow of its original self to what must surely be a faithful recreation of how it appeared in its heyday, complete with a gloriously rich lime render applied by hand-throwing in the traditional manner.

The county of Fife also features prominently in Penelope Walker's exploration of structures and recesses used to house bees during the winter months. To date, more examples of these have been found in Fife than in any other Scottish county, and they provide intriguing reminders of a way of life that is now consigned to the past. It is likely that many remain undiscovered, and Walker is keen to hear from anyone who may have information on examples not already listed in the IBRA Bee Boles Register, a remarkable database which she has been instrumental in creating.

From Fife we pass to the village of Cousland, just south of Edinburgh, with David Connolly's report on his research into the origins of the mysterious building known locally as 'the Nunnery'. SVBWG members who attended the 2007 Autumn Meeting may recall his fascinating tour of the area; his work there to date has yielded both answers and further conundrums. Investigations are ongoing, and a full-scale building record is in progress as this journal goes to press.

The survey of Sliabhclachd kilnbarn and Fae limekiln (both in Speyside), described in John Sherriff's essay, has likewise thrown up questions as well as answers. Sherriff gives a detailed account of both structures, highlighting their distinctive features which include arched drawholes and, at Fae, an unusual range of granite and stone employed in its construction for decorative effect.

Further architectural and historical detective work is presented in Hilary K Murray's examination of several ruinous structures

which formed a small rural settlement near Urquhart and were all built using the 'clay and bool' technique typical of this area of Morayshire. The method, which employs clay and stone, was used not only for small crofters' buildings but also for the far more extensive nearby farmhouse, also briefly described.

We continue our journey northward as Graeme Collie introduces us to the subject of Orcadian corn mills. Collie's extensive research into this building type has revealed a surprising variety of architectural form. In this issue he focuses on the more common type – that with a vertical water wheel; his investigation will continue next issue with an essay on the more unusual horizontal mills.

From here we venture overseas to the Estonian Islands, where SVBWG member and stone worker Charles Hazard examines the region's rich heritage of dry stone walls. His piece offers an interesting comparison to Scottish examples and a fascinating insight into how geological and climatic conditions lead to regional variations in the form of structures which are – or were – ubiquitous in many geographical areas, as well as highlighting creative new ventures in the field.

Lastly among the main articles, we bid a fond farewell to long-time SVBWG member and engineer Kenneth McCrae, who passed away in September 2007 at the age of 92. Geoffrey Stell, our Founder-Secretary, reminiscences about the McCrae he knew, and his own recollections are complemented by extracts from interviews he held with McCrae four years ago, focusing on McCrae's apprenticeship in the engineering firm of Babtie, Shaw & Morton of Glasgow in the 1930s.

A short article by Andrew Young on the intriguing concrete-built horizontal mill of Sandness, Shetland is followed by general notes, including details of recent and future SVBWG events and publications. The issue is rounded up by reviews, predominantly by Veronica Fraser, of a fascinating selection of recent books on vernacular building-related topics.

Abigail Grater

THE RESTORATION OF WYND LODGE, ELIE

Richard Craig

Introduction

> Rankeillor Street goes S towards the sea … and the hapless Wynd Lodge, covered with C20 cement 'masonry' except for the early C17 doorpiece in its projecting jamb.[1]

This description by John Gifford in his book *The Buildings of Scotland: Fife* (1992) sums up exactly what I found when I bought Wynd Lodge in 2003. I knew it was one of Elie's earliest houses by virtue of its doorpiece and crawstanes (crow-stepped gables), but it was smothered in cement rendering at the time (see figs 2

Figure 1. Rankeillor Street c.*1900. (Source: Elie Historical Society)*

Figure 2. Wynd Lodge in 2003: view from south-east.

Figure 3. Wynd Lodge in 2003: view from north-east.

and 3). I wanted to chip this off immediately, but my lack of funds meant that that this would not be possible until the summer of 2006. Nevertheless, the delay allowed me time to research the history and restore the interior of the house – although, as a rule, the roof and exterior of a building should be made sound before starting on the interior. Time and effort would have been saved if I had abided by this guideline. This paper will firstly look at Wynd Lodge's history before discussing in detail its restoration.

Wynd Lodge's history

The first stage in the research was to read through articles and books about historic Elie looking for leads. This was pretty fruitless except for an article on the 'The houses o' the Ailie' in the November 1972 issue of *Scotland's Magazine*, which states: 'the house in Rankeillor Street with the projecting stair was Paisley's Inn, the oldest hostelry in Elie.'[2] This clearly refers to Wynd Lodge; but would the deeds, which date back to 1810, shed more light on this revelation?

Ownership

The previous owner to me was Mrs Ritchie who had inherited the house from her husband, Mr William Heddle Ritchie, who in turn had purchased it from a Mrs Helen Proudfoot in 1966. These people had cared for the house, ensuring that it was kept water-tight, with the most significant modernisation being the blocking up of fireplaces. Mrs Proudfoot only owned the house for six years, having purchased it in 1960 from the Mather family who had bought it in 1945. One of the first things Mrs Mather did when she bought the house was to contact the local builders,

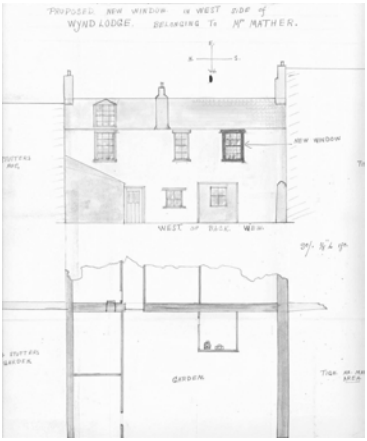

Figure 4. Drawing of the rear (west) elevation with proposed new window, c.*1945. (Source: Elie Historical Society)*

David Garland & Sons, and ask them to look into inserting a new first-floor window on the west (rear) elevation. David Thomson of the Elie Historical Society saved the drawing for this work (fig.4), along with many other Elie drawings from the Dean of Guild. However this window was not inserted on the first floor but on the ground floor, perhaps because the former would have overlooked a neighbouring property. The McCallum family, prior to 1945, owned the house for 15 years after purchasing it in 1930. The McCallums were probably responsible for the cement cladding as it is shown as very clean on the architect Ian Lindsay's photograph of *c*.1937 (fig.5).

Ian Lindsay surveyed 1,047 buildings in 92 burghs between 1937 and 1939, and produced map-based lists which were given to the Department of Health. The purpose of this was to highlight important buildings which should be given a second chance in the

Figure 5. Photograph of Wynd Lodge c.*1937, by Ian Lindsay. (RCAHMS (Ian G Lindsay Collection); © RCAHMS)*

Figure 6. Wynd Lodge c.*1900. (Source: Elie Historical Society)*

event of a local authority submitting a slum clearance plan.[3] Ian Lindsay went on to have a very successful career championing the restoration of burgh houses, and was very involved with the National Trust for Scotland's Little Houses Improvement Scheme.

Members of the Wood family had owned Wynd Lodge prior to 1930. The Woods are a famous Elie family who have connections with the burgh dating back to 1650, with the most famous ancestor being Admiral Sir Andrew Wood of Largo who won two sea battles against the English in 1481. This led to King James III rewarding him with land at Largo and a knighthood.

Miss Catherine Hunter Wood originally bought Wynd Lodge with Miss Agnes Grierson in 1902 before taking over sole ownership in 1908. Prior to her, Alexander Wood had bought the house at public roup in the Aitken's Hotel in 1868. He had employed John Jack (writer) to bid on his behalf, presumably because he was living in Scarborough, England.

It is worth pointing out that the owner of a house does not necessary live in it. My mother owns a house in the neighbouring Royal Burgh of Earlsferry and she found a death certificate for a domestic servant, Ann-Hutcheson Turner, in the deeds for her

home. Ann lived with her parents, was unmarried, and died of heart disease at the age of 38 on 7 February 1900 in Wynd Lodge. The Turners did not own the house, which means they rented it, and a photograph of Wynd Lodge *c.*1900 shows a 'To Let' sign in the upstairs window (see fig.6). I suspect the reason why my mother's house has this deed is due to the fact that at the time people were borrowing money from each other, and this was recorded with house deeds. However it is nice to think that the connection between the two houses has been re-established 100 years later.

Prior to the 1868 auction, the building had been given in 1867 to William Wood (merchant in New York) and his son John Walter Wood by the Reverend Walter Wood. The Reverend was a very successful man and published many articles relating to religion and history, with his magnum opus being the book *The East Neuk of Fife* (published by David Douglas in 1887). According to members of the Elie Historical Society he was also a moral crusader and liked to close down inns because of the immoral shenanigans that happened within them. Could this be the reason why he bought Wynd Lodge from Andrew Beale (merchant) in 1848? Mr Beale was a trustee for William Adamson whose occupation was inn-keeper. In 1810 when he bought the house from Alexander Wood his occupation was vintner. It therefore seems likely that Wynd Lodge became the Paisley Inn during William Adamson's ownership, although as yet I have not found documentary evidence that proves this. The 1810 deed was the earliest deed which came with the house, but David Thomson gave me access to neighbouring property deeds from which it is possible to ascertain that Alexander Wood inherited half of the house from his father (James Wood) and in 1802 bought the other half from John Wood who had inherited his share from his father (William Wood). Interestingly in 1806 Alexander Wood had to pay Sir Philip Anstruther (feu superior) the sum of six shillings and eight Scots pence in feu duty.

The foresaid William and James Wood were merchants who bought the house in 1776 from Angus Macdonald (house surveyor in Elie). The trail went dry at this stage but Dr Geoffrey and Vivien Millar who own the neighbouring property, Tighnamara, to the south very kindly lent me a collection of eighteenth-century deeds in their possession. From these deeds it was possible to ascertain that their house and mine were sometimes owned by the same people in

the eighteenth century – Angus Macdonald and latterly William and James Wood. Angus Macdonald, described this time as a flax raiser and tacksman at Sir John Anstruther's Elie lint mill, owned Wynd Lodge by 1766. The house is recorded as having no owner in 1762 and is described as 'the tenement formerly of Alexander Dempster's heirs'. This means that Angus Macdonald took ownership of the building sometime between 1762 and 1766. A 1745 deed also describes Wynd Lodge as 'formerly of Alexander Dempster's heirs', which suggests that the house may well have been ownerless for a good number of years. Another document, a 1778 disposition to James and William Wood from Angus Macdonald, discusses the sale of Wynd Lodge and Tighnamara. It states: 'the new house lately built by me and the old walls'. This relates to Wynd Lodge and suggests that Angus Macdonald rebuilt the house in the shell of the original building. Perhaps the lack of a previous owner meant Wynd Lodge was in a very poor state of repair when he took it over. There is still a possibility of going further back if deeds for neighbouring properties are found.

Clearly if Walter Wood or indeed any of the previous owners had not bought the house then the line of ownership would have been different, and Wynd Lodge may well not have fallen into my hands and been restored. We can only speculate as to what its fate might have been, but it would most probably have been shelled and unsympathetically modernised like so many of the Elie houses.

The restoration of the interior

The owners and occupants of the house have each made decisions about alterations and interior decoration. My restoration was guided by evidence found within the house, with the aim of repainting each room in the earliest colour found on the existing plasterwork. Equally original Victorian gaslights would be reinstated, although not connected to the mains, where evidence dictated. The existing decoration of the rooms very much reflected the styles of the 1960s and 1970s.

The chimneypiece of the first-floor room, for example, had been blocked up, although with an attractive wallpaper covering, and had a 1970s mantelpiece (see fig.7). The paper was carefully peeled off, archived, and the boarding removed to expose a beautiful fireplace (see fig.8). The grate had most likely been put in by Alexander

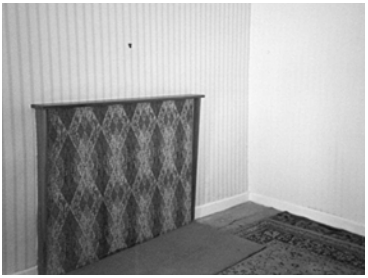

Figure 7. The chimneypiece of the first-floor room in 2003.

Figure 8. The first-floor chimneypiece, stripped down but unrestored.

Wood, because an 1895 sixpence and 1896 halfpenny were found in a crevice when the 1970s mantelpiece was removed. The coins were probably meant as good luck charms, placed there by workmen who installed the fireplace. Coins have been found in many houses in the East Neuk during renovation work. The Victorian grate had been set into an early-seventeenth-century stone fireplace with a small wooden surround. The stone fireplace continues for about a foot (30cm) under the floor, which means the ceiling on the ground floor has been raised (see fig.9). Old wallpaper is also evident, and the colour found on the plaster was copied and used as the décor for the whole room. The fireplace was stripped of its paint, and a cement mix was used to repair the damage caused by the wooden batons. A stonemason would have been employed to restore the fireplace if money had been no object; this could still happen in the future. The fireplace was black-leaded for use (see fig.10).

Figure 9. Detail of the first-floor room, showing part of a stone chimneypiece and wallpaper beneath floor level.

Figure 10. The first-floor chimney-piece after restoration.

The restoration of the exterior

By 2006 the hallway in the projecting jamb had been restored, but unfortunately large damp spots were showing on the décor. I removed the skirting boards and cleaned out the sand – amounting to bucket loads – which had accumulated between the plaster lath and sandstone walls of the house. This should have solved the dampness problem, but unfortunately it did not. The root cause turned out to be that the cement rendering on the façade was badly cracked, which was letting water penetrate the building.

I obtained planning permission and listed building consent to remove the cladding by the summer of 2006. The quickest way to remove the cement rendering would have been with a machine, but I felt that this might damage the building. I started on the projecting jamb with a hammer and chisel and was quickly rewarded by finding a blocked-up window (see fig.11). This window had been hiding under harling for well over 100 years, as it is not shown on any nineteenth-century photographs of the house. This find caused me great excitement; but the work had caused pinning stones to fall, and earth was pouring out from behind the lime pointing. It was time to call in the professionals. I later found out that many old buildings in Fife were built of earth and stone, with lime only being used to point

Figure 11. Removing the cladding, 2006.

Figure 12. The house without cladding.

Figure 13: An unusual vertically aligned stone.

the joints. The local builder, Mr William Anderson, quickly came to my aid with scaffolding and he left me his labourer, Gary Main, to help with the chipping off.

The exercise uncovered some excellent architectural features: a small opening was found in the attic of the projecting jamb, and stone window sills and margins were found around two of the windows. One of the most curious finds was a stone turned on its end with a small hole from which something was attached (see fig.13). Perhaps this was where an inn sign or a ring to tie a horse pulling a cart laden with beer barrels hung? A stone margin from a smaller,

earlier window was found to the right of the existing Georgian hall window. This suggests that all the windows in the house were once the size of the blocked-up window. The lintel above the existing hall window was rotten but a replacement stone lintel was sourced.

I was fairly sure that the building would originally have been covered in lime as many early houses were. Remains of lime were found under the cement and a photograph of the house *c.*1900 (see fig.6) shows the harling before the cement rendering. The stone is beginning to show where the harling has worn away, which is a feature of lime-covered buildings. Lime harling also allows the building to breathe as water that penetrates the surface is released back out, whereas with cement harling the water would be trapped on the inside. Mr Anderson was against using lime as he felt it would not last and it would be more time-consuming and expensive to apply than cement. He felt the house should be pointed to show the stone. I contacted Mr Craig Frew at the Scottish Lime Centre and he reassured me that I was correct. Armed with this knowledge, I persuaded Mr Anderson to use lime. Without his expertise and hard work, the job would never have been done. Masons Mortar supplied the sand (Broomhead Coarse Sand) and lime (Natural Hydraulic Lime 3.5) for the next stage.

Applying the lime

The house was pointed and 'dubbed' with a mixture of lime, sand and water. Dubbing is an important stage where broken pantiles are used to build out areas on the façade which are holey or uneven (see figs 14 and 15). Three coats of lime harling were hand thrown by Mr Anderson onto the house – the undercoat on a ratio of 2 parts sand to 1 part lime and thereafter 2 ½ parts sand to 1 part lime. There was a week's gap between each coat, and the final coat was protected from

Figure 14. Dubbing and pointing: left side.

Figures 15. Dubbing and pointing: right side.

Figure 16. Applying the lime.

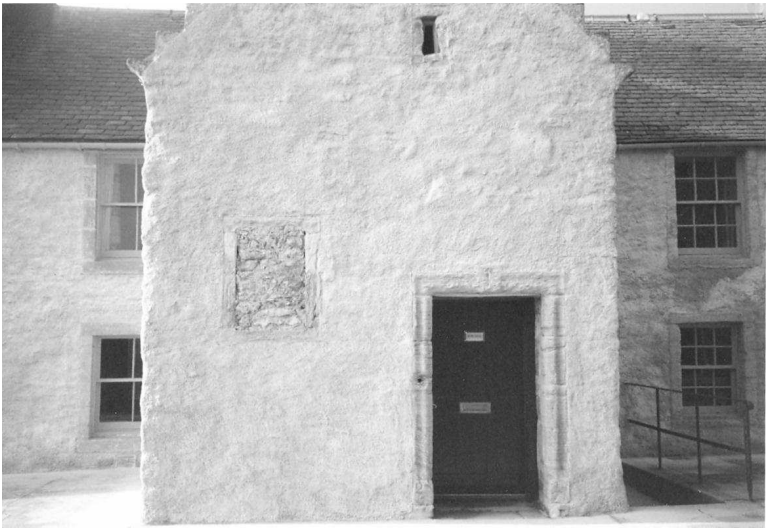

Figure 17. The lime-rendered house, with window still blocked up.

drying out too quickly by hanging sacking from the scaffolding. The scaffolding was hosed down daily.

Planning permission and listed building consent had to be sought to reinstate the blocked-in hall window (see fig.17). The window frame was made in Musselburgh and the local joiner, Frazer Thomson, fitted the window (see fig.18). The Musselburgh firm also supplied astragals which I cut and fitted over the plate-glass window on the ground floor. This restored the missing astragals without having to replace the glass or window frame. The final job for the façade was to replace the glass front door with a Georgian door found in a salvage yard in Wooler.

Figures 18 and 19. The finished look, with re-instated window.

The Cottage

At the rear of the house were the remains of an old outhouse which had a very unusual 'partition wall'. This wall consisted of a wood frame in which stones were laid on their ends, producing a much thinner wall than usual (see fig.20). The wall was beginning to deteriorate (see fig.21), so the decision was made to rebuild the front wall and re-roof the structure. Mr Anderson sourced a stone window frame, and the façade was built up in lime, with a pantiled roof being fitted in 2007. The partition wall has been saved and the cottage looks as though it has always been there (see fig.22).

The back yard also contained another feature: a blocked-up well was discovered whilst clearing away gravel. The partial digging out of this well has yielded 1950s jam jars and bottles, but there must be some earlier artefacts waiting to be discovered.

Figures 20 and 21. Partition wall and collapsed wall of outbuilding.

Figure 22. The finished look of the outbuilding.

Conclusion

The restoration of Wynd Lodge has been a steep learning curve for me intellectually and has given me lots of new building skills. The house is only in my guardianship and it is my responsibility to ensure that it has a good start to its fifth century of existence. The house is now one of the few buildings in Elie covered in lime, and it certainly is no longer hapless. My hard work was rewarded in 2007 by the East Neuk of Fife Preservation Society giving me a Building and Environmental Award.

Notes

[1] J Gifford, *The Buildings of Scotland: Fife,* Penguin, London, 1992, p.209.

[2] G Allan Little, 'The houses o' the Ailie', *Scotland's Magazine*, November 1972, pp 9–13.

[3] D Watters and M Glendinning, *Little Houses: The National Trust for Scotland's Improvement Scheme for Small Historic Homes*, RCAHMS and National Trust for Scotland, Edinburgh, 2006, p.20.

RECESSES USED BY TRADITIONAL BEEKEEPERS IN SCOTLAND TO PROTECT SKEPS IN WINTER

Penelope Walker

Protective structures used for skeps

Until the late nineteenth century, beekeepers in northern Europe kept their honeybees in traditional hives called 'skeps' which, in Britain, were usually made from coiled straw. Most beekeepers stood their skeps in the open on stools or benches, with a protective covering to keep the rain off. Some beekeepers, however, made recesses in a wall (bee boles) for year-round protection of their skeps – or 'ruskies', as they were called in Scotland. The IBRA Bee Boles Register for Britain and Ireland keeps records of these walls and of other types of protective structure.[1] These include:

(a) open-fronted, roofed bee shelters, with one or two shelves to hold several skeps;

(b) bee houses – each a small building with a door for the beekeeper to enter – inside which the skeps or wooden hives stood on shelves (occasionally in recesses), each hive having a bee flight hole through the wall to the outside;

(c) buildings used for the winter storage of skeps of bees.[2]

In an earlier article, I gave some information on past beekeeping in Scotland and discussed the characteristics and distribution of the 187 bee bole walls recorded there by 1988.[3] The total has now increased to 226, but the conclusions drawn 20 years ago remain generally unchanged. Figure 1 gives an example of a typical row of bee boles, and Figure 2 shows a less common arrangement, with skeps in four of the bee boles.

The present article will concentrate on winter storage buildings, and particularly those found in Scotland.

Figure 1. Typical row of three bee boles, Cliffburn Hotel, Arbroath, Angus (IBRA Register No.0384). (Photo: E C Willsher, 1980)

Figure 2. Two tiers of bee boles, Edenshead, Gateside, Cupar, Fife (IBRA Register No.0297); note that three skeps have 'caps', i.e. coiled-straw extensions, on top. (Photo: P Walker, 2006)

Buildings used in the past for wintering bees

It is known that some beekeepers in Britain and Ireland moved their skeps into a dark building for winter so that the bees were kept at a comparatively equable temperature and were inactive, thus conserving their energy and food stores. The skeps were also well protected from winter wind and rain. William Cotton, an Oxford beekeeper writing in 1842, gave advice on wintering bees: 'The best place to put Bees in is a dry, cold, and dark room, or out-house … . Put your Bees there the last week of November, and let them sleep quietly till the flowers begin to come out at the end of February.'[4] Some years earlier, in 1811, G S Keith wrote in his survey of Aberdeenshire: 'An ingenious friend … has contrived to keep [bees] in an *ice-house*, in a state of insensibility, which is a *saving of their winter provisions*' (original italics; one assumes that the ice-house did not contain ice at the time!).[5] So it may have been quite common for bee-keepers to take their skeps on stands into an outbuilding; but it is impossible to know which buildings might have been used in this way.

However, some windowless buildings have been found which contain roughly cuboid internal recesses (see fig. 3), like bee boles, and for some of these there is evidence that they were used for skeps. This implies that other similar internal recesses were built for the same purpose.[6] The Register now contains records for 54 of these windowless buildings with recesses on the inside

Figure 3. Winter bee house, Old Dairsie Manse, near Cupar, Fife (IBRA Register No.1364). (Photo: P Walker, 2004)

Country	Winter bee houses	Cellars with recesses	Average no. of recesses
England	22	16	9.3
Ireland	5	0	22.0
Scotland	8	0	27.1
Wales	3	0	17.3

Table 1. Winter storage buildings for bees in Britain and Ireland.

(see table 1); 16 of these are cellars below dwelling houses (all – except one in Staffordshire – in southern England) and the rest are outbuildings which we call winter bee houses. The earliest, in Devon, was built *c.*1450, but most are dated to the eighteenth or nineteenth centuries; they were no longer used for bees after skeps were replaced by wooden hives in the late nineteenth century.

Characteristics of the winter bee houses in Scotland

To date, eight winter bee houses have been reported in Scotland, in five counties (see table 2). All are stone outbuildings, and some are remarkable for the number of recesses they contain; for example, the winter bee house in Aberdeenshire,[7] although ruined by 1953 when it was recorded, had contained a total of 40 internal recesses on its east, north and west walls. It was dated to the late eighteenth century, and there were also four bee boles at this property. When visiting a farm at Kingskettle, Fife, I was amazed to find an outbuilding with 41 internal recesses compactly arranged in five tiers on two adjacent walls (see fig.4). Also in Fife, at Ceres, I have recently recorded an outbuilding which originally had about 72 recesses in three rows on three walls.[8] These are unusually large numbers, and the buildings were probably constructed for large-scale beekeepers. The more modest winter bee houses have between seven and 24 recesses.

As wall space might be limited, the winter recesses are often arranged in three rows, one above the other, on one or more walls (see, for example, figs 3 and 4), but preferably not on the south

County; IBRA Register No.	Address (all private)	Probable date	No. of internal recesses	Dimensions (height × width × depth, inches)	Layout
Aberdeenshire					
0115a	Manor House, Midmar, Inverurie	1700s	40	12–24† × 17 × 15	N wall: 2 rows: 10?,10; E wall: 4 rows: 3,3,3,1; W wall: same as E
Angus					
1015	Drumshade Farm, nr Glamis	house 1781	7	*c.*15 × 12 × 12	2 rows, N wall: 4,3
Argyll & Bute					
0703	Inverlussa House, Achnamara, Lochgilphead	*c.*1800	24	11–15 × 11 × 12–13	4 rows: 4,4,4,12
Fife					
1232	Glenorkie, Kingskettle, nr Cupar	late 1700s	14	13 × 13 × 13	S wall, 2 rows: 7,3; E wall: 2; N wall: 2
1248	Burnturk Farm, Kingskettle, nr Cupar	1851?	41	17 × 19 × 16	S wall: 3 rows, 4,4,3; W wall: 5 rows, 5 each; E wall: 1
1364	[was] Dairsie Manse, nr Cupar	1749 or later	10	14½ × 13–14½ × 13–15	3 rows, E wall: 4,4,2
1379	Ben Logie, Ceres	1812	72? (now 33)	15½–18 × 18 × 16–17½	3 rows; were in N,E, S walls
Perth & Kinross					
0947	Polcalk Farm, Alyth	*c.*1750	9	*c.*12 × 9-13 × *c.*12	1 row, N wall (5ft a.g.)

Table 2. Winter bee houses recorded in Scotland (all at private properties – before visiting, the owner's prior permission must be obtained).
† The taller recesses were probably for skeps with caps, as shown in the upper bee boles in fig. 2.

Figure 4. Many winter recesses in an outbuilding now used for general storage at Burnturk Farm, Kingskettle, Fife (IBRA Register No.1248). (Photo: P Walker, 2004)

wall which might become warm on sunny winter days. The recesses are generally 12 to 18 inches (30–45cm) high and wide, and 12 to 15 inches (30–38cm) deep, with just a few outside these ranges.[9] Most of the winter recesses I have seen are rather regular in appearance, with slight differences between the dimensions of recesses in different rows. Stone slabs are often used as horizontal and vertical dividers.

In Scotland we have rather little direct evidence of the use of these recesses for skeps, but at Polcalk Farm in Perthshire[10] a building dating from *c*.1750 contains a row of nine small recesses, and these are just the right size to hold the small skeps found in another outbuilding. The outbuilding at Ceres mentioned above had been part of a steading, next to a large fruit orchard. It seems very likely that in the early nineteenth century the owners of Woodburn House had kept many bees for pollinating the fruit trees, and when they built the steading in 1812 they made a place to keep their bees in winter. (By the 1990s, many of the recesses had fallen into disrepair; the current owners retained and restored 33 of them when converting the steading to a dwelling house.)

However, one cannot always be confident that internal recesses were used for skeps. The 14 recesses at Glenorkie[11] are of suitable dimensions, but are unusual in all being at or near ground level, and so were possibly built for hens to nest in. The single row of recesses at Polcalk Farm, although originally for skeps, had been used later for hens; a wooden structure had probably been in place to help the hens reach the holes 5 feet (1.5m) off the ground.

The distribution of the winter bee houses is interesting: all are on the eastern side of Scotland except the one in Argyll.[12] This is similar to the distribution of bee boles.[13]

Information needed about winter bee houses

The fact that three previously unrecorded winter bee houses have recently come to light in Fife, all in the Cupar area, suggests that there may be more in this and perhaps other parts of Scotland. By their nature, internal recesses are hidden away, often in little-used outbuildings, so they are less easy to find and recognise than, say, bee-bole walls. Some owners themselves have no idea why such recesses were built. It is not uncommon for winter bee houses to have been dual-purpose buildings, used for skeps in winter and also for storing tools and equipment, or animal food. Others have changed use: a building in Cumbria[14] which was most probably built as a winter bee house was referred to as the 'potato house' in 1910, and the owners in 1999 knew it as 'the dairy'.

I would be very interested to hear of winter bee houses (and, indeed, bee boles or other structures) not yet on the Register. Any windowless or dark outbuildings with internal recesses of dimensions similar to those in table 2 are worth recording and photographing – with the owner's permission. A useful record contains: date of recording; address; grid reference; location of building in relation to house and garden; material and approximate dimensions of the building; number and dimensions of recesses, and height above ground; internal layout of the building; exact or probable date/century; any evidence of use. Sketches and photographs (prints or JPEGs) are also valuable. Please send any records or enquiries (marked IBRA Register) to International Bee Research Association, 16 North Road, Cardiff, CF10 3DY, or mail@ibra.org.uk. I would also like to hear of internal recesses known to have been built for other purposes.

Notes

1 IBRA = International Bee Research Association. The Register, which was started in 1952 to record structures in Britain and Ireland for protecting skeps, now contains entries for 1,427 structures. It is available free online (www.ibra.org.uk/beeboles) and can be searched

for type of structure, county, place-name, century of construction, or public accessibility. Individual records and images can be viewed.

[2] These different types were described and discussed in E Crane, *The Archaeology of Beekeeping*, Duckworth, London, 1983, chapters 6 & 7.

[3] P Walker, 'Bee boles and past beekeeping in Scotland', *Review of Scottish Culture*, No.4 (1988), pp 105–17.

[4] William C Cotton, *My Bee Book*, G K & J Rivington, London, 1842, pp 85 & 87.

[5] G S Keith, *A General View of the Agriculture of Aberdeenshire*, Aberdeen, 1811.

[6] The first 18 of these recorded on the Register are discussed in E Crane, *The Archaeology of Beekeeping*, *op.cit.*, pp 171–6. Information on the 39 known in Britain and Ireland in 2001 is given in E Crane and P Walker, 'Winter bee houses and cellars', *Local History Magazine*, No.86 (2001), pp 10–13 (table incomplete) (also published in *Beekeepers Quarterly*, No.68 (2002), pp 12–14).

[7] IBRA Register No.0115a.

[8] IBRA Register No.1379. I am grateful to Marion Wood for taking me to see this property.

[9] Measurements were made in feet and inches when recording started in 1952, and this continued after metrication. So that comparisons can be made, the dimensions given in the Register database are still all non-metric. (If converting, bear in mind that the metric dimensions obtained are over-exact for the recesses which, in any case, usually show marked variations.)

[10] IBRA Register No.0947.

[11] IBRA Register No.1232.

[12] IBRA Register No.0703.

[13] See map in Walker, 'Bee boles and past beekeeping in Scotland', *op.cit.*, p.107, which discusses the likely reasons for this distribution.

[14] IBRA Register No.1291.

COUSLAND NUNNERY – OR IS IT?

David Connolly

The initial approach

I was approached by members of the Cousland Local History Project to look at a monument that dominates the centre of the village. The local group was interested to know if this structure – known as 'the Nunnery' – was in any way related to an ecclesiastical establishment; or indeed, if not, what it actually was.

A brief history of the village

The village of Cousland itself is an interesting location, hidden to the south of Carberry Hill and only a few miles south of Edinburgh. It is mentioned as a centre for lime production at an early date, as this quote from *Extracts from the Records of the Burgh of Edinburgh: 1557–1571* shows:

> Lindesay, Makdougall. 6 March 1557.
> My lordis presidentis baillies and counsale forsaid ordanis maister James Lindesay baillie, and Sir William McDougall maister of werk, to contract and aggre with the lyme men of Cousland for furnessing of lyme to the wallis of the toun, and thay to be the price makaris thairof allanerlie.

At a still earlier date, in *c*.1177, Alexander II bestowed upon Radulph of Graham the lands of Cousland, Pentland, and Gogger, in Midlothian; and even before that, the Annals of Dunfermline refer to the patronage of Cousland Church being given to Dunfermline Abbey in 1140.

This is the earliest mention of an ecclesiastical institution at Cousland, and subsequent records have perpetuated the myth that the current structures are all that remain of the nunnery. However, there is also interesting evidence for a castle at Cousland taking centre stage in two major events of Scottish history.

The Duke of Somerset crossed the Tweed to 'woo' Scotland into the marriage of Mary and Edward, and during that Black Saturday of 10 September 1547 the Battle of Pinkie saw the Scottish army annihilated and Cousland Castle burnt to the ground. The castle is indicated on diagrams of the Battle of Pinkie in Patten's *Expedicion into Scotlande*, and so must have been constructed at some point prior to that date.

Later, on a hot summer's day in 1567, the ruined castle looked out over the Battle of Carberry Hill, where the Confederate Lords accepted the surrender of Mary Queen of Scots: not a shot was fired, the right flank of the Confederate army sweeping past Cousland Castle. At this time the castle was owned by Patrick Ruthven, a supporter of Mary.

Nearly a century and a half later, on 7 August 1702, Sir John Dalrymple acquired the lands of New Cranstoun, together with those of Cousland and Heriotmuir, as part of his marriage contract with Miss Fletcher, the lands being entailed on the heirs of the marriage. He then began a series of improvements on the estates, and this evidence is an important clue to the 'Nunnery'.

The site

The remains at this site form an enclosure of around 76 yards (70m) square with some walls over 20 feet (6m) high. The north-east corner contains the ruins of a castle-like structure, and it is clearly scarped into a gentle slope from south to north. The walls are of local sandstone or limestone and are mainly of random or coursed rubble, set in a lime mortar. The surrounding walls have a well-made pitched cope of cut sandstone. Within these walls lies a flat grassy area with no features, which is now home to a few ruthless Shetland Ponies and provides little indication of its original purpose.

However, an enjoyable day spent examining the fabric, linking historical dates and events to evidence and good honest architectural detective work, allowed us to piece together the history of the site.

The broad phases

Phase 1 – the 'Nunnery'

There is no doubt that an ecclesiastical establishment of twelfth-century date was present at the location, although there is now no

evidence for its position or even the slightest scrap of architectural detail from a building of this period. It is here somewhere, but the current structure is clearly in no way connected to it.

Phase 2 – the castle

We are already aware of a castle located here prior to 1547 and its destruction by the English army during the aftermath of the Battle of Pinkie. Indeed, the small rectangular ruin in the north-west corner is more than probably this very structure. Only two storeys of this truncated tower survive (the entire east half is missing, due to previous stone robbing). The surviving quoins are of rough-hewn, massive white sandstone.

The lower room was a vaulted kitchen area, with a large fireplace in the north wall and an inlet for fresh water to the right. The door into this area is in the south, and, unusually, the drop from sill to floor is considerable, which suggests either steps down, or entry from above. However, there are two features which sit clumsily together and do not seem to make sense (see fig.1).

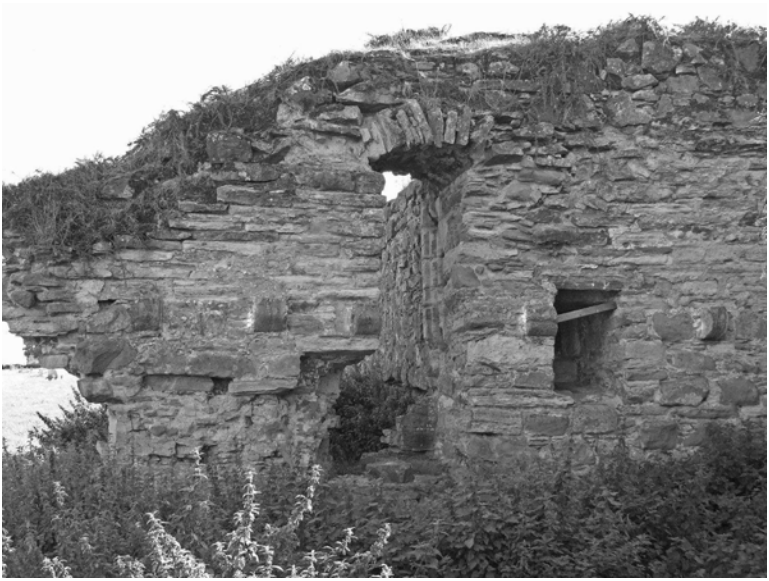

Figure 1. Doorway in the south wall of the 'castle', with the corbels clearly 'cutting through' the opening.

The lower chamber is barrel-vaulted, with the spring of the arch clearly visible. However, at the base of the spring, along the length of the building, there is a row of corbels that must have supported a wooden superstructure such as a floor – although this floor would have cut across the door midway up its height. The suggestion of a hammerbeam-style ceiling covering the barrel vault is also problematic due to the curve of the vault (see fig.2).

Several aumbries are located around the walls, and two tapered slit windows (now blocked) pierce the south wall.

From comparable examples, the date of the structure can comfortably be narrowed down to the late fifteenth century. However, it is clear that this was no functional castle in the real sense, and may have been only a hunting lodge. In fact, there is a lawyer's letter from the sixteenth century that successfully argues the case for the owner not having to pay additional dues, since the structure, although giving the semblance of such, was not in fact a true castle.

Figure 2. Interior of the 'castle', showing the barrel vault; the fireplace is to the right.

Figure 3. Blocked window, cupboard and jamb of seventeenth-century structure.

Phase 3 – the house

The destruction of the castle in 1547 does not preclude a rebuild. However, a look at the wall that runs from the south wall shows an extension that can be recognised from features such as a blocked window, an aumbry and a door jamb (see fig.3). It is clear that this now missing structure would have formed a courtyard with the ruined castle to the north. This is not unusual: comparable examples exist elsewhere in the Lothians, such as East Garleton Castle, which sits ruined beside a later seventeenth-century house. Chronologically the house must sit between the sixteenth century (the end of the castle) and the construction of the next phase (the eighteenth-century walled garden); only further geophysical investigations will confirm dates.

Phase 4 – the walled garden

The next phase of construction is concurrent with the Dalrymple take-over of the estate and an obvious desire to improve the commercial capacity of the area. Along with the limekilns, which remained in operation until the twentieth century, we see the appearance of the smiddy (which now forms a remarkable museum), a windmill, and a newly discovered redware and whiteware pottery. The nature of the

Figure 4. The walled garden: note the raising of the wall, and the pitched copes.

crop cultivated in the garden is as yet unknown. Putlogs in the west wall and geophysics have also shown a glasshouse was constructed here.

Phase 5 – desertion

At some time before the 1st edition Ordnance Survey map, the walled garden was still known as 'the Nunnery garden', but by 1894 it was disused and would have been much as it stands today.

The questions

On behalf of those who were able to visit the site last November, I have many questions to ask, and hope that readers will help if they can. The structure of the castle is intriguing: I am used to seeing a low vault with chambers above, but here the vault seems to be on the first floor, and the question of why the corbels are placed in such a way that a floor supported by them would cut across the doorway remains a puzzle. I would appreciate any suggestions as to what the vertical layout of the interior might have been, which could explain these anomalies. Are there any comparative structures from the fifteenth century? What sort of structure would be expected in the seventeenth century?

This exciting monument will keep me coming back to work with the people of Cousland, and in March and April 2008 we will be undertaking a full-scale building record. Perhaps we will be able to return with more answers in a later issue.

TWO SPEYSIDE KILNS

John R Sherriff

Introduction

In 2006 the Royal Commission on the Ancient and Historical Monuments of Scotland (RCAHMS) undertook an archaeological survey in and around the Braes of Abernethy, an area of rough moorland, small pockets of woodland and mixed-economy farms south-east of Grantown-on-Spey. Among the monuments recorded for the first time were two buildings of considerable interest – a kilnbarn at Sliabhclachd (NJ02SE 29) and a limekiln at Fae (NJ01NE 27). It is the purpose of this paper to bring these buildings to the attention of a wider audience and note some of the possibilities for further research.

The Royal Commission is grateful to the owners and staff of Dorback Estate, particularly Brian Hamilton (Head Keeper), for facilitating access to both buildings. Details of all the monuments recorded by the Commission can be found by accessing the RCAHMS database (Canmore) at www.rcahms.gov.uk.

Sliabhclachd

Sliabhclachd farmstead is situated 5 miles (8km) south-east of Grantown-on-Spey. Although the house is still inhabited and a range that once contained a byre has been converted for other use, three other buildings are ruinous. However, one of these is the best-preserved kilnbarn in the survey area. RCAHMS undertook a measured survey of this structure (see fig.1) principally because it represents a type of farm building that was once common in this part of Speyside. Many kilnbarns still survive, but most have been reduced to little more than grass-grown wall-footings.

The building incorporates the east end of an earlier structure, the function of which is unknown but which, because of its position on a break of slope, might also have

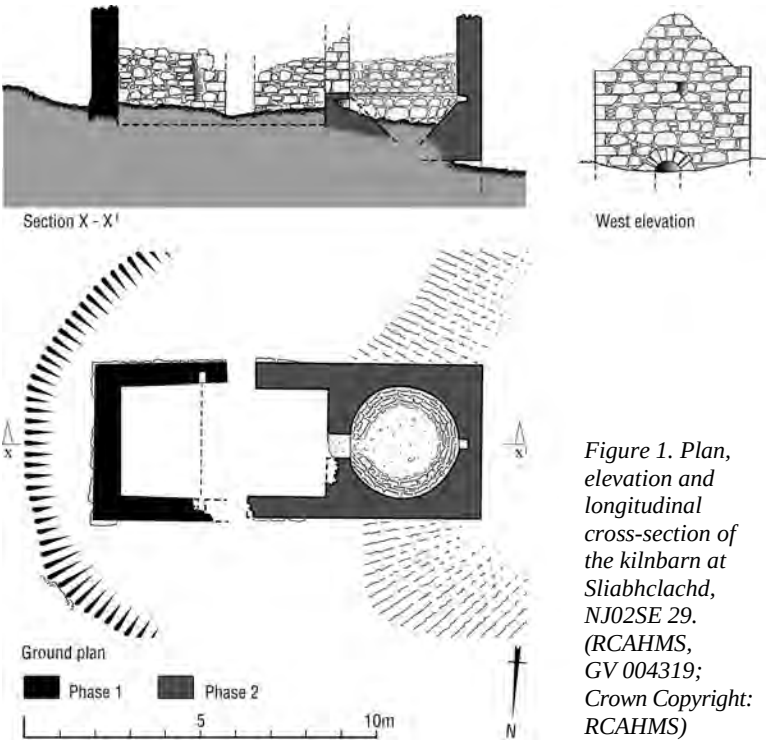

Figure 1. Plan, elevation and longitudinal cross-section of the kilnbarn at Sliabhclachd, NJ02SE 29. (RCAHMS, GV 004319; Crown Copyright: RCAHMS)

Figure 2. View of the kilnbarn at Sliabhclachd, NJ02SE 29, taken from the north-west. (RCAHMS, DP 019126; Crown Copyright: RCAHMS)

been a kilnbarn (see fig.2). This earlier building had a cruck-framed roof and opposed doorways, which were retained in the latest phase of use. The later building, which probably dates to the late eighteenth or early nineteenth century, had a kiln in its west end that has an arched opening to its flue. Commonly, flues in kilnbarns are relatively low and narrow, and are roofed with flat slabs or lintels; the provision of an arch here could be an indication that the building was better constructed than most similar structures.

Figure 3. One of the cruck-slots is visible just east of the doorway on the south side of the kilnbarn at Sliabhclachd, NJ02SE 29. (RCAHMS, DP 019125; Crown Copyright: RCAHMS)

Fae

The limekiln at Fae (see figs 4 & 5), which stands just 2 miles (3.5km) south-east of Sliabhclachd, has been set into the west face of a low rise 220 yards (200m) north-north-east of the former farmstead which it served. The building is unusual because it is rectangular on plan and does not have a conventional pot and flue. Its random rubble walls stand up to 8 feet 6 inches (2.6m) in height on the west-north-west, where there is an opening and where the top of the inner face is corbelled. The structure is depicted as one of two 'Limekilns', on the 2nd edition of the Ordnance Survey 6-inch map (Inverness-shire 1902, sheet LX), and the vitrifaction that is visible on its inner wall-face also testifies to its former purpose.

The most unusual feature of the kiln, however, and the one that links it to the kilnbarn at Sliabhclachd, is the arched draw-hole. The presence of a quarried granite pillar, laid horizontally in the wall fabric above the arch, demonstrates that the draw-hole could easily have been furnished with a conventional lintel. But

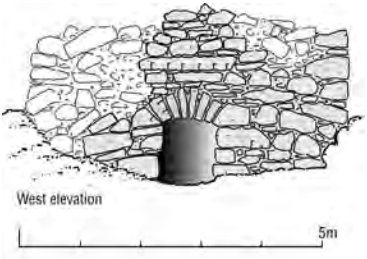

Figure 4. Plan and elevation of the limekiln at Fae, NJ01NE 27. (RCAHMS, GV 004316; Crown Copyright: RCAHMS)

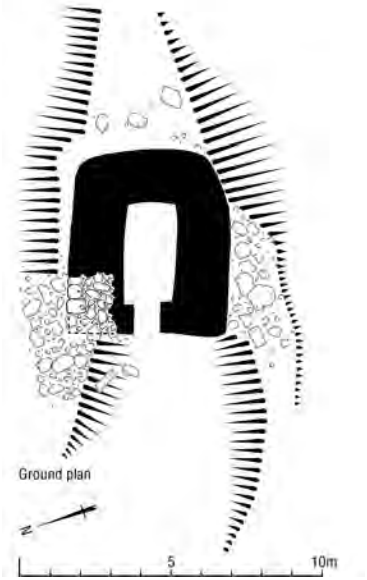

Figure 5. View of the limekiln at Fae, NJ01NE 27, taken from the west-north-west. (RCAHMS, DP 022948; Crown Copyright: RCAHMS)

the use of an arch here appears to be a continuation of a prolonged local architectural tradition, which is evident not just in the kilnbarn at Sliabhclachd but in another limekiln on that farm (NJ02SE 17), a kiln that is depicted disused on the 1st edition of the Ordnance Survey 6-inch map (Inverness-shire 1874, sheet XLVIA).

However, even if the building of the arch at Fae was part of this tradition, the use of blocks of pink granite for the voussoirs (contrasting markedly with the grey granite façade of the kiln) is a very interesting embellishment. The source of the pink granite has been identified by Brian Hamilton as a small quarry

situated high up on the hillside above Dorback Lodge, some 650 yards (600m) to the west of the kiln. It is not the most convenient source of stone for building at Fae, but it provides a measure of the determination of the builders to adorn or decorate the limekiln.

Discussion

Perhaps the most curious aspect of the kilnbarn at Sliabhclachd and the limekiln at Fae is that both were in use at a time when most other similar structures on Speyside had already become redundant. The limekiln at Fae either replaced or complemented a top-loading circular kiln of a type that largely went out of use before the middle of the nineteenth century, so why was this new kiln built? And why the rather idiosyncratic design? Is it simply a larger and later version of the limekiln at Sliabhclachd, which also has an arched draw-hole? Or is it related to other kilns recorded by RCAHMS in Speyside, which are set into steep slopes and appear to be roughly rectangular on plan but have no discernible front face?

It would also be of interest to find out how the use of the later kiln at Fae fitted into the broader landscape. Evidence from the 2nd edition of the Ordnance Survey 6-inch map suggests that it may have been the only functioning limekiln in the valley of the Dorback Burn in the late nineteenth century. Was it supplying processed lime to the neighbouring Seafield Estate farms that had defunct limekilns? Was it built simply to provide fertiliser for Fae or was it used for some other purpose altogether – perhaps supplying lime for construction work that was being undertaken on the estate?

At Sliabhclachd, the lack of any major modification to the kilnbarn and the fact that it is depicted roofed on both the 1st and 2nd editions of the Ordnance Survey 6-inch map (Inverness-shire 1874, sheet LXVIA; 1902, sheet LXVIA) might argue for its continued use until the end of the nineteenth century. The presence of a kilnbarn here in the late eighteenth or early nineteenth century is entirely in keeping with this part of Speyside, where most sizeable arable farms had one. But the possibility that it remained in use after others on neighbouring

farms were being abandoned or made redundant begs questions regarding the status of this building and the role that Sliabhclachd farm played within the estate as a whole. Was Sliabhclachd maintained as a centralised kilnbarn for the use of neighbouring Seafield farms? In the 1860s it certainly seems to have been comparatively well maintained and the Ordnance Survey Object Name Book for Abernethy and Kincardine parish (Inverness-shire, Book 2, p.17) describes Sliabhclachd steading as 'thatched' and being in 'tolerable repair', this contrasting with most other farms on the estate which are described as being in either 'bad' or 'poor repair'. And if the kilnbarn at Sliabhclachd was maintained to serve several farms, was it but one of a number of kilnbarns across Seafield Estate serving a similar purpose?

Research into historical records – particularly those of the Seafield Estate, should they survive – may yet show who was responsible for the design and construction of these buildings and the exact context in which they were built, used and ultimately abandoned. For now, field recording by RCAHMS is playing its part by recording buildings such as these and identifying ways in which they may be better understood.

Acknowledgement

This paper was published with the aid of a grant from RCAHMS.

CLAY AND BOOL CONSTRUCTION NEAR URQUHART, MORAYSHIRE

Hilary K Murray

The settlement

A number of buildings with clay and bool walls were recorded in woodland near Urquhart, Morayshire during an archaeological survey prior to development (see fig.1).[1] The 1st and 2nd edition Ordnance Survey maps (1870–74 and 1905–6 respectively) showed that five buildings (numbers 1, 2, 3, 5 and 8) had formed a linear settlement, named Maverston Muir, of small crofts which were established before 1870 when they were mapped. Two other buildings (numbers 6 and 7) were part of a similar settlement, named Kempston. The original parts of all the buildings (1, 2, 3a, 5a and 6a) can be identified by size and position as the structures shown on the 1874 map, and can probably be dated to at least the mid-nineteenth century. The extensions (3b and 3c) to building 3 appear to have been built between 1870 and 1906. The extension to Building 6 (6b), being of stone, may have been added in the early twentieth century, but the extension to Building 5 (5b) and its outbuilding (Building 4) are likely to be of mid-twentieth-century date.

The whole group is an interesting example of small-scale rural settlement of the period. Roy's Military Map of 1747–55 shows a cluster of buildings in this area beside the name Kemps (Kempston) and at Maverstown, with unenclosed cultivated ground and some muir, so it is possible that the recorded nineteenth-century buildings with their small enclosed fields may be replacements for the unenclosed settlement of the eighteenth century.[2]

The earliest buildings in the group were all built with clay and stone walls. The technique, known as 'clay and bool', was typical in the area of Morayshire around Garmouth and south into Banffshire in the nineteenth century.[3]

Although in the survey the technique is seen on relatively humble buildings, the same technique was also used on the farmhouse at Lower Maverston, originally a fine two-storey-and-attic building with dressed sandstone around the chimney, windows and doors.

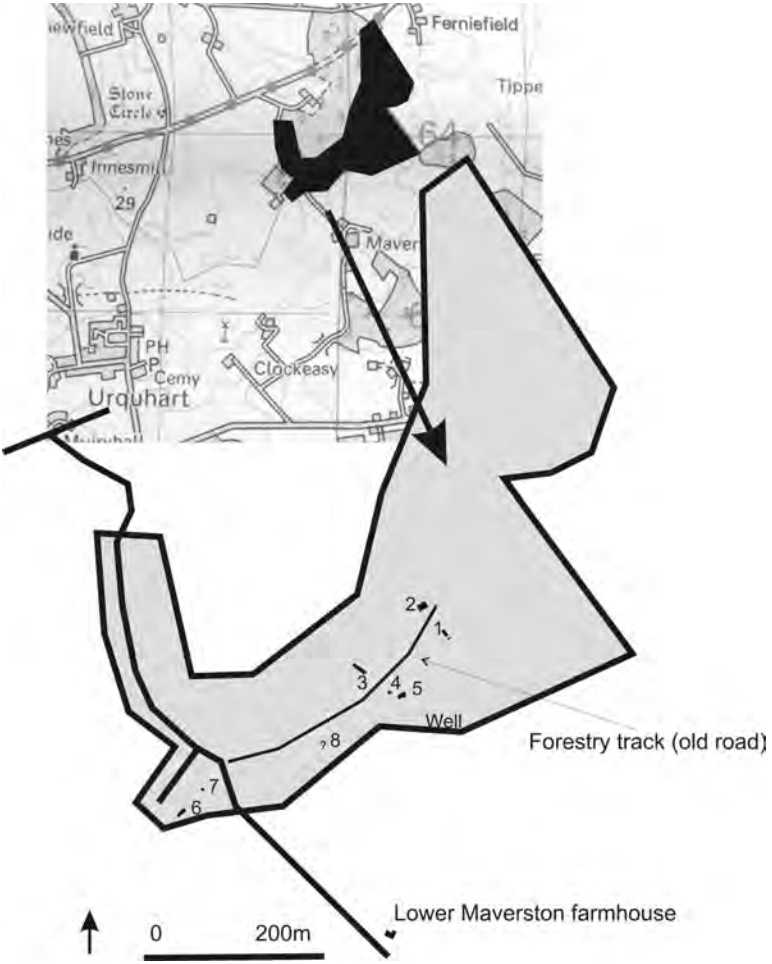

Figure 1. Location of site.

Maverston Muir

Building 1

This lay to the south-east of the forest track, which is on the line of the road shown on the 1870 and 1906 Ordnance Survey maps. It was separated from the road by an overgrown former

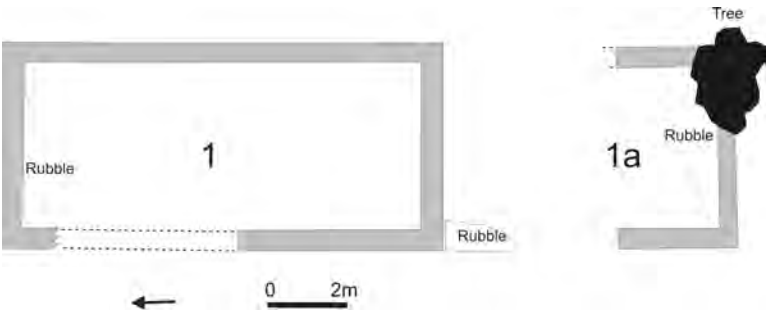

Figure 2. Plan of Building 1.

garden. The main building was a single-roomed rectangular structure with a probable entrance in the middle of the west wall. The walls were very overgrown and survived generally to a height of only around 1 foot 8 inches (50cm), although the north gable and the south-east corner survived to some 2 feet 7 inches (80cm). They appeared to have been around 1 foot 8 inches (50cm) wide, built of a mixture of rounded pebbles and angular field stones with a yellow, clay-based bonding. Due to the eroded nature of these walls it was not possible to distinguish if any temper had been used in the clay matrix.

A small additional structure (1a) lay to the south. It comprised a south wall and short sections of east and west walls on the same lines as those of the main building. However, only on the west side, where rubble abutted the wall of the main building, was there any indication that this structure may have been joined to the main building, forming a second 'room' of around 23 feet by 16 feet (7m x 5m). No concrete or other modern materials were noted in the construction.

Interpretation: B1 is shown on the l870s and 1905–6 maps. On the 1874 map it is shown as a rectangular building with a possible extension (1a?) at the south end. In 1906 this extension is not shown and must therefore have been ruinous or removed. The garden found in the survey is shown from 1874 onwards. The croft lay in a single field. The conifers within the building suggest it was ruinous before the wood was last planted. There is no direct evidence of function, but B1 was probably a dwelling, whilst 1a may have been a byre.

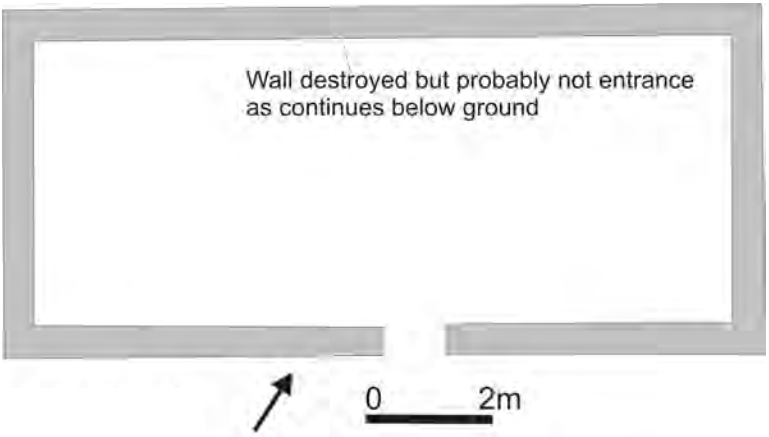

Figure 3. Plan of Building 2.

Building 2

B2 lay to the north-west of the road shown on the 1870 and 1906 Ordnance Survey maps. It was on the top of a small knoll. The surface of the knoll to the north of the building looked as though it had been levelled with a bank to the north; however, this may be deceptive as there is a badger's sett on that side.

The building was a single-roomed rectangular structure with an entrance in the middle of the south wall. A gap in the north wall is unlikely to have been a second entrance, as probing revealed the continuation of the wall across the gap.

The walls were very overgrown and survived to a maximum height of only around 1 foot 8 inches to 2 feet 4 inches (50–70cm) at the gables. They appeared to have been some 1 foot 8 inches (50cm) wide, built of a mixture of rounded pebbles and angular field stones with a yellow, clay-based bonding; it was not possible to distinguish if any temper had been used in the clay matrix. The outside of the east gable had surviving concrete render, and a concrete block was found beside the south wall.

Interpretation: B2 is shown on the l870s and 1905–6 maps. In 1874 it is shown as a small rectangular building in the north-west corner of an enclosed garden with two small fields to the north. By 1906 the ground to the north of the building appears to have been levelled and the garden to the south has been removed. B2 can be dated to at least the mid- or late nineteenth century.

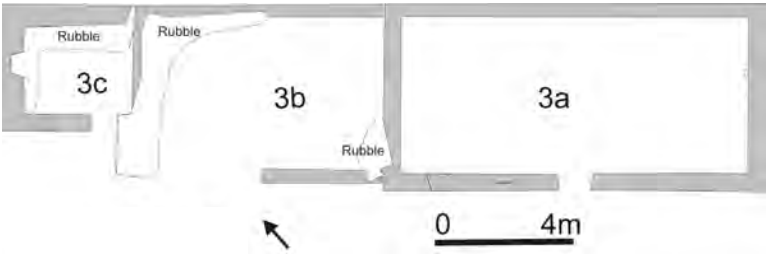

Figure 4. Plan of Building 3.

Building 3

B3 lay to the north of the road shown on the 1870 and 1906 Ordnance Survey maps. It consisted of a single-roomed rectangular building (3a) with an additional 'room' (3b) of the same width abutting its west gable and a small, narrower structure (3c) at the west of 3b. 3b was clearly secondary as both north and south walls clearly abutted the wall of 3a. However the relationship between 3b and 3c was unclear as rubble obscured the wall junctions. It is structurally possible that 3a and 3c were both earlier and that 3b filled in the gap. The doorways of B3 opened onto a former garden area measuring 59 feet (18m) north–south by 49 feet (15m) east–west.

3a, the earliest part of the building, had a central doorway in the south-facing wall, flanked by a window on either side. The door (external width 3 feet (90cm), internal 3 feet 4 inches (1m)) and the west side of the west window showed characteristic splaying to the inside. The east window had been widened to 3 feet 4 inches (1m) and restructured and was concrete rendered on the sill and the sides. Between the door and the west window there was a small alcove 1 foot 6 inches (45cm) wide and 1 foot (30cm) deep in the inner face of the wall; the back of this had been concrete rendered and it may be the base of a small cupboard. On the inside of the east gable wall, two visible courses of stones projecting around 6 inches (15cm) from the wall face are all that remains of the north side of a fireplace or flue; the stones were fire blackened. The west gable was too ruinous for any detail to survive.

3b also appeared to be a single 'room' with a central doorway in the middle of the south wall. The better-preserved east side of the door was not splayed.

3c was an almost square room with a door and window in

Figure 5. Building 3a, detail of wall.

Figure 6. Building 3c, detail of flue.

the south wall; the window sill was concrete. The west gable was partially obscured by rubble but the top of a chimney flue was visible. At the (visible) base, some 1 foot 7 inches (50cm) above ground level, the width of the base was 2 feet 8 inches (80cm) at the front, narrowing to 2 feet 6 inches (75cm) at the back, and tapering to around 1 foot 5 inches (43cm) at the base of the chimney. Approximately 3 feet 1 inch (95cm) of the internal height was visible. The inside of the flue was lined with an inch (2cm) of thickness of straw-tempered clay which was baked hard and blackened near the base.

The walls of 3a survived to a greater height than the other buildings, up to 4 feet 11 inches (1.5m) in places, although near to collapse. They appeared to have been around 1 foot 8 inches (50cm) wide, built of a mixture of rounded pebbles and angular field stones with a yellow, clay-based bonding. Straw tempering (seemingly of oat straw) was visible throughout. The inner faces of the walls in 3a showed the clay used as an internal render, but on the outsides this had weathered off and some concrete render was visible on the exterior of the south wall. The walls of 3c were clearly of the same construction but 3b was less clear due to its far more collapsed state. 3c had concrete external render.

Interpretation: B3 is shown on the l870s and 1905–6 maps. In 1874 it is shown as a single rectangular building, probably B3a, which would appear to have been a dwelling. In 1874 there was an enclosed garden beside the track to the south-west of the building and three fields. By 1906, B3 is shown to be

almost twice its previous size, which suggests that by this stage it had been extended to include 3b and 3c. There is no evidence to suggest a domestic function for 3b, which could possibly be a byre. The fireplace in 3c suggests that this was an additional dwelling, possibly a bothy. By 1906 the garden had been moved to its present position and a new footpath gave access to the track.

Building 4

B4 was not part of the early settlement but was a rectangular outbuilding of B5. Only the foundations survived, which were of concrete some 16 inches (15cm) wide and 6 inches (15cm) high with an entrance gap approximately 6 feet 7 inches (2m) wide in the east wall. The foundations to the north of the gap had irregularly placed holes 2 inches by 2½ inches (5cm x 6cm) to hold timber stobs (of which traces remain) for fixing the upper part of the wall. To the south of the entrance there were iron bolts of the type normally used to hold prefabricated sections.

Interpretation: This appears to have been a shed built of prefabricated panels at the south end and either similar panels or possibly wooden construction on a sill beam at the north end. The evidence of the prefabricated panels suggests the re-use of ex-military buildings in the 1950s or 1960s, a common occurrence on farms in the north-east of Scotland.

Building 5

B5 lay to the south of the road shown on the 1870 and 1906 Ordnance Survey maps. It consisted of a single-roomed rectangular building (5a) with a later porch (5b) abutting the south wall of the building. B4 (above) appears to be an outbuilding associated with B5. Both buildings lay within an unplanted clearing in the woodland with traces of a post-and wire-fence on the east boundary.

5a had a central doorway in the south-facing wall; the gap was 4 feet 6 inches (1.37m) wide but the original width of the doorway was obscured because of rubble. The window positions could not be identified. A fireplace and part of the chimney

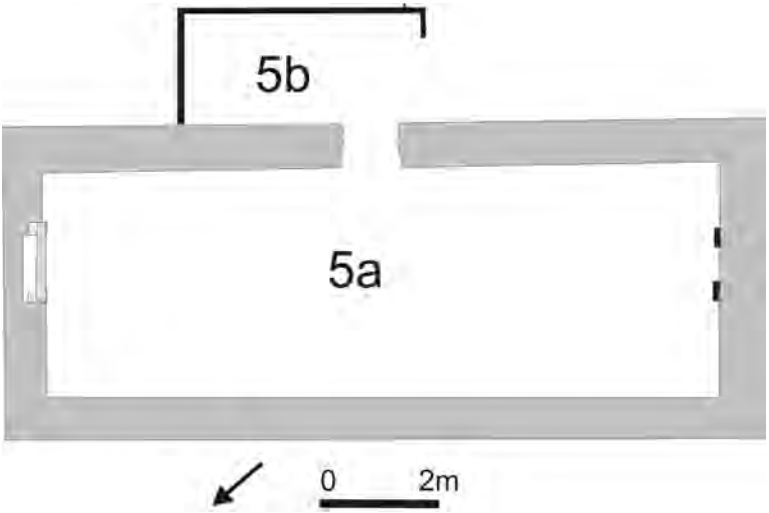

Figure 7. Plan of Building 5.

survived, slightly off-centre, in the east gable. The base of the fireplace was obscured by rubble but 1 foot 7 inches (48cm) of its height was visible. It comprised vertical sandstone jambs 3 feet 4 inches (1m) apart carrying a dressed sandstone lintel (cracked) with a ledge. Above this there was a single course of stonework with a second large sandstone block above. The north side of the chimney had fallen in, showing the iron bar running across behind the lintel; this would originally have held the chains for cooking equipment. In the centre of the west gable the base of a second possible fireplace was flanked by breezeblocks. Insufficient evidence survived to show if this was the insertion of a new or narrower hearth, or if an original hearth had been blocked.

The side walls of 5a survived to a height of around 2 feet 7 inches (80cm), with the east gable standing to 7 feet 3 inches (2.2m) although near to collapse. They appeared to have been up to some 2 feet 4 inches (70cm) wide, built of a mixture of rounded pebbles and angular field stones with a yellow, clay-based bonding. Straw tempering was visible in the core of the collapsed section of the gable. Concrete render was visible on the outside of the east gable.

5b was a small porch, 13 feet 9 inches by 6 feet 7 inches (4.2m x 2m), built abutting the south wall to shelter the house doorway. Entrance to the porch was from the west. Only the concrete footings survived, they were some 4 inches (10cm) wide, with some surviving iron bolts, possibly for a wooden framework.

Interpretation: B5 is shown on the l870s and 1905–6 maps. In 1874 it is shown as an L-shaped building, the short arm of the L being an extension to the north-west of the existing rectangular structure. By 1906 this had been removed. A small enclosed garden is shown to the south of the building from 1874. Two fields and the well are also shown from 1874 on. The well was located approximately 150 feet (46m) south of the building. B5 appears to have been a dwelling.

Building 8

This building, known from the map evidence, could not be located.

Kempston

Building 6

B6 lay in a small patch of scrub woodland to the south of the road to Maverston farm and some 380 yards (350m) south-west of B3 and B5. It was very heavily overgrown and the core of the building filled with rubble. To the south there was a relict garden.

6a was a single rectangular room with an entrance in the centre of the south-facing wall. Fragments of a partially concrete chimney lay near the west gable but the rubble was too high for it to be possible to identify the hearth. A secondary door had been broken through the south end of the west gable to give access into a small extension (6b). 6b was 8 feet 2 inches by 10 feet 10 inches (2.5m x 3.3m) and abutted the outside of the west gable of 6a. It had a doorway in the south wall. There were traces of internal concrete render in 6b.

The walls of the main building were difficult to record; they appeared to be a clay and stone construction similar to the other buildings recorded. However the extension was of stone

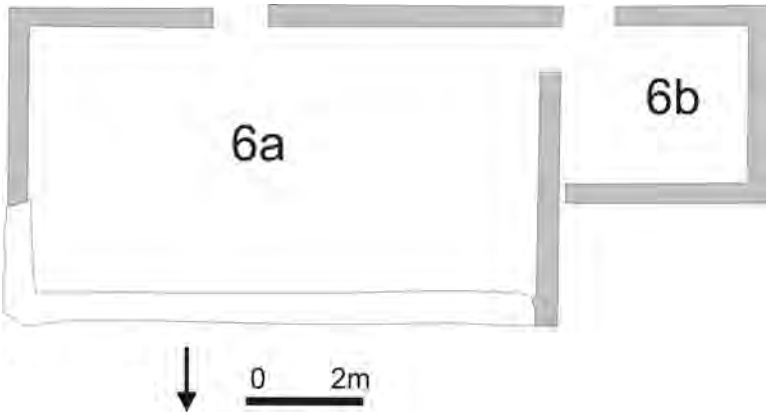

Figure 8. Plan of Building 6.

with a sandy mortar. Both 6a and 6b had some external concrete render.

Interpretation: B6 is shown on the l870s and 1905–6 maps. In 1874 it is shown as a single, fairly small rectangular building with garden ground to the south.

Building 7

Traces of wall foundations were observed approximately 39 yards (36m) to the east of B6, in dense undergrowth. These may be the remains of one of the other buildings shown on the 1870s and 1905–6 Ordnance Survey maps.

Lower Maverston

The farmhouse at Lower Maverston was not part of the survey, but was nevertheless recorded, since it is adjacent to the settlements that were the focus of the study and is an example of a far larger building built using the same clay and bool construction. It was derelict at the time of survey but had originally been a fine two-storey-and-attic building with dressed sandstone around the chimney, windows and doors. The wall construction could be clearly seen where the outer face of the upper part of the back wall had eroded.

Figure 9. Lower Maverston farmhouse from back.

Figure 10. Detail of clay and bool wall at Lower Maverston farmhouse.

Archive

The full archive is lodged at RCAHMS and at the Aberdeenshire and Morayshire SMR.

Acknowledgements

The original survey was funded by ANM Group. Photographs are by JC Murray; all illustrations are by Murray Archaeological Services Ltd.

Notes

1 The survey includes Moray SMR entry nos NJ26SE0079 and NJ36SW0041. NGR: NJ 301 629.

2 W Roy, Military Survey of Scotland 1747–55. Area around Garmouth. www.scran.ac.uk, RoyMap, 28/4f.

3 A Fenton and B Walker, *The Rural Architecture of Scotland*, John Donald, Edinburgh, 1981, pp 77–8.

AN EXAMINATION OF THE DIFFERENT FORMS OF VERTICAL WATER MILLS IN ORKNEY

Graeme Collie

Orkney is justly famous for its archaeological heritage, having a Neolithic landscape important enough to have been designated a World Heritage Site. However, visitors cannot help but notice another class of monuments scattered across the islands: the large, water-powered corn mills.

To the casual observer, the most abundant design appears to be that of the mid-nineteenth-century vertical water mill: linear or L-plan, three storeys high, featuring an integral kiln and overshot wheel. This paper challenges the idea that Orcadian mills conform to a standard plan, and concludes that, while these buildings exhibit a great deal of architectural similarity, they are, nevertheless, all individual, displaying subtlety of design and architectural idiosyncrasies.

The study began with documentary research. Data from the RCAHMS Canmore database were combined with information gleaned from the 'old' *Statistical Account of Scotland* (OSAS) (1791–9), the *New Statistical Account of Scotland* (NSAS) (1845), 1st and 2nd edition Ordnance Survey maps, census returns, various legal and estate documents, and published papers.

Canmore produced 32 watermills, 27 of which appeared to be vertical; however, it was often impossible to differentiate between grinding and threshing mills.

The OSAS and NSAS are reticent on the subject of milling. In total only 11 water mills are alluded to in the OSAS, and 10 water mills in the NSAS. In both cases, the descriptions were not precise enough to pinpoint locations for mills.

A detailed review of the 1st edition Ordnance Survey sheets found 44 mills, excluding those marked as 'disused' (two) or 'old' (one). The maps were of a large enough scale to establish the ground plan of individual buildings.

In two 1925 essays, J Storer-Clouston makes mention of many

Mill Name	OS Ref	Type†*	Date	Floor Plan	No of Storeys	No of Stones	Wheel Size (m)*
Mill of Eyrland, Stenness	HY 2949 0972	O	Mid C19	L-Plan	3	-	-
North End Road, Stromness	HY 2561 0973	-	Late C19	-	3	-	-
Mill of Harray, Conyar	HY 2980 1867	U	C18 to C19	Linear	2	2	3.4
Mill of Rango, Sandwick	HY 2652 1815	-	C19	Linear	2	3	-
Mill of Skaill	HY 2335 1887	-	C18	Linear	1 + 2	-	-
Mill of Cairston, Stromness	HY 2588 1064	O g U t	Early C19	Linear	2 + 3	-	-
New Barony Mill, Boardhouse	HY 2551 2747	O	Late C19	Linear	3	3	4.3
Sabiston Mill, Dounby	HY 2843 2179	Br	C19	Linear	2 + 3	3	3.26
Skeabrae Mill, Sandwick	HY 2671 2090	Br	C18	Linear	2	-	-
Kirbister Mill, Chinegar, Orphir	HY 3687 0709	O g U t	C19	T-Plan	3	3	4.6 g, 3.6 t
Isbister Grain Mill, Birsay	HY 3910 1860	-	-	-	-	-	-
Finstown Mill, Firth	HY 3549 1421	Ba	C18/19	L-Plan	2 + 3	2	4.26
Tormiston Mill, Stenness	HY 3193 1255	O	C19	Linear	3	3	4.27
Costa Mill	HY 3382 2806	O	C19	Linear	1	2	4.2
Hellicliff Mill, Woodwick	HY 3882 2406	O	C19	L-Plan	2 + basement	2	4.26
Papadale Mill, Kirkwall	HY 4520 1096	-	C19	Linear	3	3	-
Papdale Corn Mill	HY 4529 1090	-	-	-	-	-	-
Tankerness Mill	HY 5145 0845	Br	Early C19	Linear	2 + basement	3	3.6
Sebay Mill	HY 5155 0467	O	Mid C19	L-Plan.	3	2	4
Sandwick, South Ronaldsay	ND 4406 8965	-	C19	Linear	2	-	-
Kirkhouse Mill, South Ronaldsay	ND 4350 8143	O	C18	Linear	2 + 3	-	-
Trenabie Mill, Pierowall	HY 4383 4794	O	Late C19	Linear	-	-	4.3
Trenabie Mill, Pierowall	HY 4383 4794	Br	C18	-	2	-	3.66
Hookin, Papa Westray	HY 5005 5122	U	-	-	1	1	2.8
Lower Millfield, Stronsay	HY 6588 2551	O	C19	Linear	3	-	-
Nethermill Sourin, Rousay	HY 4405 3112	O	C19	-	3	-	-
Bea Mill, Sanday	HY 6555 3926	-	C19	L-Plan	2	-	-
Boloquoy Mill, Sanday	HY 6259 3906	Br	C18 to C19	-	2 + 3	-	3.26
Hooking, North Ronaldsay	HY 7664 5338	Br	C18	Linear	1	-	-
Peckhole, North Ronaldsay	HY 7628 5285	-	C18 to C19	-	2	-	-
Risa Mill, Hoy	ND 2996 9544	-	-	-	-	-	-

Table 1. Inventory of vertical 18th- and 19th-century water mills in Orkney.
† Ba=backshot; Br=breastshot; O=overshot; U=undershot
** g=grinding; t=threshing*

'old' – sixteenth-, seventeenth- and eighteenth-century – mills.[1] Horizontal mills were excluded.[2] Storer-Clouston references 50 vertical mills, and in many cases his description is detailed enough to allow a location for a specific mill to be identified.

By collating the findings from all the documentary sources, 30 buildings were identified which could unquestionably be described as eighteenth- or nineteenth-century vertical water mills. In addition the locations of six smaller, probably sixteenth- or seventeenth-century, vertical water mills were proposed. The locations of all of these buildings were transferred onto the latest edition 1:50,000 scale Ordnance Survey maps of Orkney, and the co-ordinates recorded. Of the sites identified, nine were not previously recorded in the Canmore database.

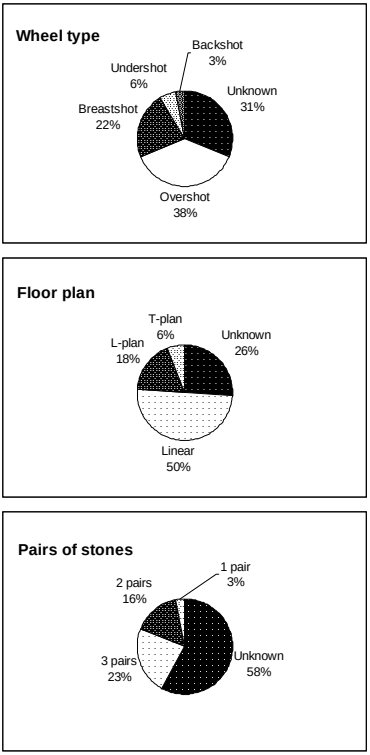

Figure 1. Charts showing the relative frequency of occurrence of major features in later vertical mills.

The results of the documentary survey provided the author with targets for fieldwork. All the mills located on the Orkney mainland were visited. Using information from site visits and descriptions from documentary sources, a database of major features (wheel type, number of storeys, floor plan, presence or absence of a kiln block, number of grinding stones) was produced.

The majority of later vertical water mills were found to be linear in plan, two storeys high, and to feature an overshot wheel, integral kiln and two pairs of stones (see table 1 and fig.1). There are, however, a few notable exceptions. Sabiston Mill (see fig.2) was latterly modified to provide an engine house; Mill of Rango features a square kiln (see fig.3); Kirkhouse has a water wheel hidden from view set within the main building (see fig.4); Skaill featured an unusual rotary kiln vent (see

fig.5); Cairston (see fig.6) and Kirbister (see fig.7) both have threshing and grinding facilities. Thus later vertical mills do not rigidly conform to a predetermined format: site visits revealed that they cover the spectrum from small, linear, single-storey buildings with breastshot wheels to huge complexes which combined grinding, threshing and drying on the same site.

Figure 2. Sabiston Mill, Dounby. This is not a true L-plan building: it is a linear two-storey building with a three-storey kiln and a lean-to, rubble-built engine house tacked on. Jimmy Meil, the last miller's son, indicated that the engine was not required due to the water supply being 'unreliable',[3] but that his father had purchased the engine in order to extend the hours during which he could work.[4]

Figure 3. Mill of Rango, Sandwick. Like many of the mills surviving in Orkney, the Mill of Rango has been converted to living accommodation. What marks this building out architecturally is the square kiln with hipped roof.

Figure 4. Kirkhouse Mill, South Ronaldsay. The horizontal slot in the wall suggests an internal wheel. Given the remoteness of the site, it is unlikely that this was to reduce noise. The wheel was enclosed more probably because of the site's exposed position – to protect it from windage, to prevent water being blown from the bucket, or to guard against ice damage.

Figure 5. Mill of Skaill. This mill has now been lost to the sea; however, this watercolour, painted in 1887, shows a rotating kiln vent on the roof. Although common in Scotland, this was unusual in Orkney.

Figure 6. Mill of Cairston, Stromness. This appears to have featured both an overshot and an undershot wheel placed in sequence. A take-off from the dam leads the water to the overshot wheel and the runoff from here runs into the sump for the undershot wheel. The main evidence for two wheels comes from the two square shaft holes.

Figure 7. Kirbister Mill, Chinegar, Orphir. The most complex of Orkney's mills, Kirbister combines a grinding mill, threshing mill and kiln all on one site. Both water wheels are enclosed, and the lade allows water to be diverted to either threshing or grinding mills as required.

Mill Name	OS Ref	Type	Date	Floor Plan	No of Storeys	Prs of Stones	Wheel Size (m)
Old Barony Mill, Boardhouse	HY 2548 2747	Breastshot	C17	Linear	1	-	3.30
Kirbuster Corn Mill, Birsay	HY 2838 2535	Breastshot	C16/17	Linear	1	1	-
Tingwall Mill, Rendall	HY 402 229	Breastshot	C17	Linear	1	-	2.73
Echna Loch, Burray	ND 4719 9669	-	C16/17	Linear	-	-	-
Cara Corn Mill, South Ronaldsay	ND 4673 9463	Breastshot	C16/17	Linear	1 + 2	-	-
Voy, Stromness	HY 2534 1493	Breastshot	C16/17	Linear	1	-	3.05

Table 2. Inventory of vertical 16th- and 17th-century water mills in Orkney.

Early vertical mills were more uniform: they were found to be universally linear in plan, had breastshot wheels and were almost all one storey high (see table 2).

Of the mills visited, three were chosen as being representative of their type, and were made the subjects of a more detailed survey. The first was Firth Mill, a nineteenth-century vertical mill abandoned in 1955. It has not been restored or modified since this date, and still contains a full complement of original machinery. The second was Kirbuster, an early vertical mill and one of the few for which substantial archaeological evidence remains. Kirbuster has not been modified or renovated, but has none of the machinery present. Lastly, for a view of the workings, Old Barony Mill was chosen – arguably atypical of Orcadian mills, but still worthy of inclusion.

Detailed description of a late vertical water mill

Firth mill is a mid-nineteenth-century, vertical, L-plan water mill. It has all the key features you would expect of such a building: lengthy lade, dam, pond, sluices, integral kiln (see fig.8).

The north-west wing houses the water wheel at the gable end. The Hurst frame and associated gearing were positioned in a pit against the inner gable (see fig.9). The water wheel, 14 feet (4.26m) in diameter with metal side plates and 48 wooden buckets, is attached

to a square axle (6 inches (15.2cm) across the flats), to which, at the other end, is attached a large cast-iron bevel gear (2 feet 6 inches (78.8cm) diameter). As this gear turns, it meshes with a reducing bevel gear, the functions of which are to change the angle of rotation through 90 degrees and increase the angular velocity of the subsequent components in the drivetrain. A square shaft, 4 inches (10cm) across the flats and oriented in the vertical plane, drives a large horizontal gear, 4 feet 6 inches (1.37m) in diameter, fitted with hardwood teeth, effectively providing fail-safe shear-off facilities should the mechanism jam. This large gear is designed to mesh with two horizontal reducing gears which are attached to the axles that drive the millstones. These reducing gears could be raised or lowered by means of a threaded rod, so engaging or disengaging the drive to each of the millstones as required. The stones were both found to be monolithic sandstone, housed in wooden tuns.

In addition to the main power train, the main bevel gear also drives an auxiliary power take-off which drives the pulleys required to move the canvas belts for the ancillary equipment.

All the ancillary equipment is still *in situ*, and it is possible to trace the journey of the grain from its delivery at the double doors of the mill to the bagging of the bere meal in the same sacks at the end of the

Figure 8. Firth Meal Mill. *The general landscape around Firth Meal Mill showing the mill pond, mill dam, lade, bypass burn, mill cottages with threshing barn and, in the background, the L-plan three-storey mill building.*

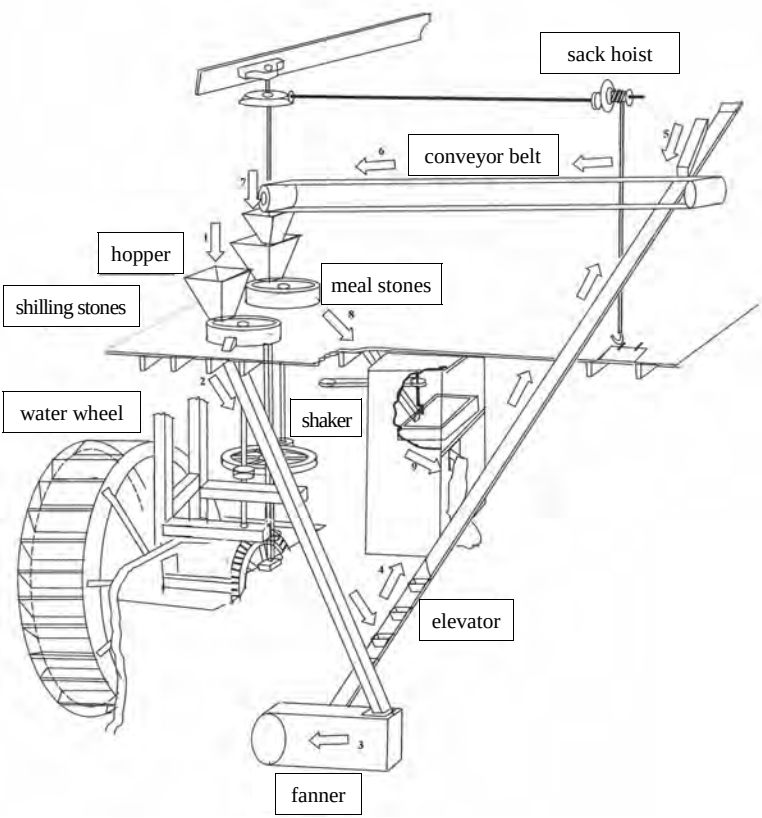

Figure 9. Isometric view of the workings of Firth Meal Mill.

process (see fig.9).[5] The grain was accepted through the double doors in the north-west wing where it was weighed prior to being carried through to the storage area in the east wing. Here it was lifted by a sack hoist to the kiln floor where it was spread out on the perforated cast-iron plates, about 3 inches (8cm) deep, and dried for a period of around four hours, being turned every hour. Once it was completely dry, the grain was shovelled through one of two holes near the wall in the kiln block into hoppers which delivered them back into sacks on the ground floor. From here the grain was moved to the east wing and lifted by a second sack hoist through the trap doors to the *hopper* sitting above the *shilling stones*; the shoe below the hopper is jogged by the *damsel*. These stones remove the outer husks and the mixture

of husks and grain drop out of a shoot at the bottom of the tun into the *fanner*. The *fanner* blows away the husks and the grain is carried by *elevator* to the *conveyor belt*, and thence to the *hopper* above the second set of stones. The husks are carried back to the kiln where they are used as fuel.

The meal drops from the stones to the *shakers* where it passes through a series of three sieves of increasing fineness. Particles which pass through all of the sieves are considered to be dust. Whole grains caught on the first sieve are returned to the grinding process. What remains – the portion retained by the third sieve – is the product. This is bagged for the customer.

The mill is an object lesson in mechanisation; sack hoists, elevators, shakers and sieves are all driven by pulleys and canvas belts which take a drive directly or indirectly from one of the power shafts at the Hurst frame.

The mill building – which is now L-plan, with a kiln installed in its north-east leg – seems originally to have been linear; a close examination of the masonry reveals that the original building consisted of the north-west leg only, the kiln block being a later addition.

The move to drying grain had further architectural consequences. The mill extension includes significant storage in a dry room adjacent to the kiln. This same room is equipped with a sack hoist, driven by a system of pulley wheels and canvas belts powered by the water wheel. Storage would have been important because it would allow the miller to dry the grain in sizeable batches, rather than milling on a while-you-wait basis, as would have been done when farm workers arrived with pre-dried grain in smaller quantities.

Firth appears to be unique in one respect: the water wheel is *backshot* (see fig.10), meaning that the direction of the water is

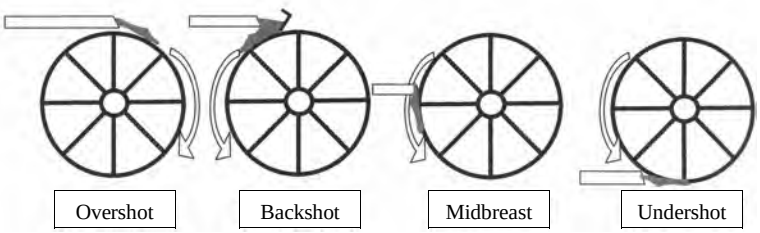

Figure 10. Options for vertical water wheel design.

reversed prior to it being allowed to drop onto the wheel. Reversing the direction of flow significantly reduces the momentum of the water, the wheel being turned by the weight of the water alone. This may indicate that the water normally arrived at the wheel with enough kinetic energy to damage the buckets during start-up and shut-down.

Early vertical water mills

A few early vertical water mills exist as standing remains in Orkney. Mills of this type recorded in the Canmore database range from the completely demolished Echna Loch, Burray, through the structurally complete Old Barony Mill at Boardhouse, to the architecturally endearing Cara Corn Mill (see fig.11). What distinguishes early vertical mills from later versions is the smaller size, the simple, single-storey linear construction, the smaller wheel, and the use of midbreast or undershot as opposed to overshot wheels.

Kirbuster Corn Mill, Birsay, is a small, 21 foot 3 inch by 16 foot 2 inch (6.47m x 4.92m), rectangular building featuring an aperture of 19 by 35 inches (48cm x 89cm) in the gable wall (see figs 12

Figure 11. Cara Corn Mill, South Ronaldsay. *Cara is a small, linear corn mill which originally featured a breastshot wheel (now absent). The kiln block, to the right, is a later addition to the original building.*

Figure 12. Kirbuster Mill, Birsay. Upstream wall and gable, the latter showing the aperture for the shaft.

Figure 13. Kirbuster Mill, Birsay. Downstream wall and gable.

and 13). The position of the shaft aperture and the geometry of the gable suggest a midbreast wheel with a diameter of around 8 feet (2.5m), much less than is generally found in later mills. Interestingly the building displayed no signs of having a door aperture; this suggests that there may have been stairs to a door to an upper level, reminiscent of the mill of Rango (see fig.3). Complex earthworks (see fig.14) suggest that the mill was fed by a substantial mill pond and sophisticated system of sluices and burns.

Figure 14. Kirbuster Mill, Birsay. The earthworks upstream of the mill suggest that the lade was not carried on stone piers, as was the case in the later mills, but took the form of a specially cut watercourse travelling in a straight line from the substantial dam to the mill. The bypass burn can be seen on the right side of the picture, and the farmstead associated with the mill is visible in the background.

Unfortunately nothing survives of the internal workings of Kirbuster. However, a reconstruction drawing of Old Barony Mill (see fig.15) shows that the earlier vertical water mills were much simpler, in terms of both architecture and operating mechanism. They were also less efficient and prone to breakdowns. One key difference between Old Barony and most of the early vertical Orcadian mills is the presence of a mezzanine floor – a feature mentioned by John Shaw as being common in Scotland, but nevertheless unusual in Orkney.[6]

One question which presented itself during fieldwork was how the early and late mills related to each other. While some mills showed that development took place – Cara adding a kiln block, and Sabiston adding a kiln block and later an engine house – there was no evidence that early mill buildings morphed into the more complex eighteenth- and nineteenth-century mills. In some instances new mills were built alongside the early ones, the classic example being Boardhouse, where two corn mills of different ages and a threshing mill occupy adjacent sites. In other cases it is suspected that the sixteenth- and seventeenth-century mills may have been demolished to make way for the later mills. It is significant that at the majority of sites where sixteenth- and seventeenth-century mills survive there is no later mill in the vicinity.

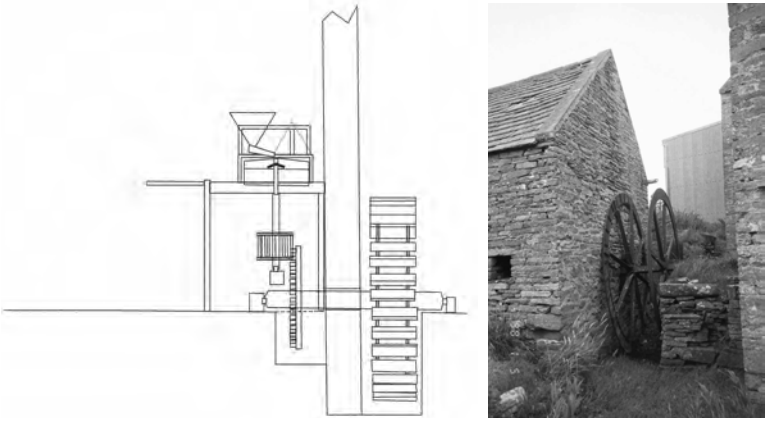

Figure 15. Cross-section of early vertical water mill. This diagram, adapted from John Shaw's illustration of a 17th-century vertical mill,[7] shows the midbreast wheel, the single pair of stones and the mezzanine floor, all features found at the Old Barony Mill shown in the photograph on the right.

Notes

1 J Storer-Clouston, 'The old Orkney mills I', *Proceedings of the Orkney Antiquarian Society*, Vol.III (1925), pp 49–54; J Storer-Clouston, 'The old Orkney mills II', *Proceedings of the Orkney Antiquarian Society*, Vol.III (1925), pp 65–71.

2 Storer-Clouston, 'The Old Orkney Mills II', *op.cit.*, p.65.

3 As stated in RCAHMS Canmore database, http://www.rcahms.gov.uk/pls/portal (accessed 1 June 2006).

4 *Pers com* Jimmy Meil.

5 Bere is a hardy, if primitive, form of barley which is still grown in the Northern Isles. Bere meal is the flour derived from bere grains which have been passed through the mill.

6 J Shaw, *Water Power in Scotland 1550–1870*, John Donald, Edinburgh, 1984, p.23.

7 Ibid.

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DRY STONE DYKES OF THE ESTONIAN ISLANDS

Charles Hazard

Introduction

The craft of dry stone dyking has seen a resurgence, both in the UK and overseas, helped somewhat in recent years by the rise in use of the internet. Many organisations dedicated to the preservation of dry stone walling have recently emerged, for example, in Australia, Canada, the USA, France, Spain and Croatia, bringing together a diverse number of people from around the world who share an interest in dry stone construction in all its varying regional styles. As the dry stone community has grown, interest in the dry stone culture of other regions has been awakened. From a European perspective, nowhere is this truer than amongst those nations occupied by the old Soviet Empire, principally the Baltic States and its satellite states in the Eastern Bloc. This brief introductory essay will look at the dry stone dykes of the Estonian islands, with the intention of bringing this important area of vernacular architecture to a larger readership.

Since it achieved independence in 1991, and with the start of its membership of the European Community in 2004, Estonia has been undergoing a process of cultural preservation in order to save its distinct national heritage which, during the recent past, had been side-lined and ignored. This work ranges in importance from large-scale national projects such as preserving the medieval walled city of Tallinn to small but just as important local projects such as future protection of the dry stone dykes found in mainland Estonia and on its many islands.

Whilst looking through earlier editions of *Vernacular Building* I was immediately struck by the number of articles centred on Scotland's own island periphery – namely the Shetlands, the Orkneys and the Inner and Outer Hebrides. Lying on the periphery of the nation and thus generally the last area to feel the force of modernisation, the islands of Scotland became a major location in which some of the best examples of Scotland's remaining vernacular architectural heritage were to be found. Likewise I believe that the islands of Saaremaa,

Figure 1. A recently repaired section of wall at St Catherine's Church, Muhu.

Muhu, Vormsi and Hiiumaa fulfil a similar niche within their own nation's links to its architectural past. The largest island of Saaremaa and its smaller neighbour Muhu became the focus of my interest solely because of the large number of dry stone dykes in relatively good condition in comparison to the other islands. It was also clear during my visits to the islands that there was in progress a renaissance of dyke building and renovation of other dry stone structures – outhouses, barns etc – helped in part by financial aid from the Government but also driven by certain enthusiastic islanders, which grabbed my attention and resulted in this article.

Saaremaa and Muhu

Lying off the western coast of Estonia, the islands of Saaremaa and Muhu are home to some of the finest and relatively most intact examples of dry stone walls found within the Baltic Sea region. Stone dominates this island landscape and can be found in a variety of structures and natural phenomena, such as ring forts, sacred stones (glacial erratics), medieval churches, mansion houses and castles. Unlike Scotland, which has a geographically diverse range of bedrock

resulting in a variety of dyking styles emerging in different locations, the bedrock of Saaremaa and Muhu consists of limestone (with dolomite appearing in a few localised areas), with glacial granite found scattered over the landscape. The glacial granite originates from Sweden and Finland and was deposited on the islands during the last ice age. Both the local limestone and, to a lesser degree, the granite have been utilised as the main source of building material for the islands' dykes, and in many instances can be found within the same wall. One of the largest erratic boulders found on the neighbouring island of Hiiumaa originates from the Åland islands, which straddle the entrance to the Gulf of Bothnia between Sweden and Finland.

A variety of foreign occupiers – beginning with the arrival of the Danes in the thirteenth century and in more recent times the Swedes and Russians (tsarist and Soviet) – have all left their mark on the history and culture of the islands to various degrees. From a dyking perspective, most of the dykes were constructed during the Swedish and Russian periods. The Swedish influence is important as the craft of dyking could have been brought over by Swedish settlers much like the diffusion of Scottish dyking styles into America, Canada, Australia and New Zealand. Saaremaa is also the location of Europe's best example of a meteorite impact point. Approximately 30 crash sites of meteorites of differing sizes were discovered in central Saaremaa in 1937. The largest of these has left its mark as the almost circular Lake Kaali, which measures 55 yards (50m) in diameter. Surrounding Kaali are the remains of a stone wall built circa AD 600 which predates the ring forts and is one of the oldest stone structures on the islands. The crater left by the meteorite resulted in Kaali becoming an important place of worship and pilgrimage by the local inhabitants during this period. Other impact points have been found in Kardla on Hiiumaa island which are claimed to be 450 million years old.

Saaremaa is the largest island in Estonia, consisting of a land area of approximately 1,030 square miles (2,700 sq km) whilst its neighbouring island of Muhu is relatively small at 76 square miles (200 sq km). Both islands, though generally flat, are broken up with swathes of both deciduous and pine forests scattered throughout the landscape. Strategically important, the islands were an integral component of the former Soviet Union's front line of defence against the Western powers during the Cold War, and were designated, during the occupation, as a restricted military area even for Estonians from

the mainland. The Soviet occupation of the islands, which lasted almost 50 years, not only dramatically changed the lives of the islanders on a personal level – many were transported into exile in Siberia – but also resulted in visible changes to the landscape, owing to government policies principally of collectivisation and infrastructure development. This was particularly evident in relation to the destruction of many miles of field walls, which crisscrossed the islands' farmland. Under collectivisation the original function of the dry stone walls – to demarcate private ownership of land – became redundant as the land fell into state ownership, and many of the walls became expendable. This resulted in many miles of wall being crushed for construction purposes such as road building and as harbour infill, or simply pushed aside into stone piles which remain as a testimony to the new agricultural policy of collectivisation. Fortunately, many walls survived this period relatively intact and today stand as silent reminders of the cultural past.

Traditions and technique

When arriving by ship from the mainland port of Virtsu, the small island of Muhu is our first port of call. For such a small island Muhu contains some of the finest examples of vernacular dry stone dykes in the eastern Baltic region. Muhu men have a reputation as fine stone workers, good examples of which are to be found at Koguva on the island's western fringe. Koguva village is a living museum with around 20 permanent residents at the present time. The many dykes bordering the village paths were constructed around 300 years ago, as a result of changing agricultural practices, and are in relatively sound condition. Some sections of the present walls can be seen in the earliest maps of Koguva dating from the seventeenth century when the Swedes were in the last period of control of the islands. The predominant stone found in Koguva's walls is glacial granite, which was collected from the nearby seashore and fields where it had been unceremoniously left in heaps as remnants of the last ice age, which retreated around 10,000 BC. The foundation stones of Koguva's dykes, unlike Scottish dykes, are said to be one metre below the present soil level and were set at such a depth as a protective measure against the damaging effects of frost heave. Moss growth on the walls is quite spectacular and some sections are so densely covered that you could imagine you were looking at a grass banking.

Figure 2. An old rowing boat finds a comfortable resting place in Koguva Village.

The dykes of Muhu and Saaremaa fall into two distinct categories, namely field and church dykes. Church dykes have a degree of uniformity and were built to demarcate church grounds and to prevent entry, either by domesticated livestock or by wild animals, onto the burial plots. The principle function of field dykes was to demarcate boundaries, and they can be categorised into around six different styles of building. Most of these were just 'thrown up' without any great skill being involved, simply as a method of clearing a certain field and demarcating land. One type, however, integrates both stone and wood, consisting of a stone base with wooden posts placed at various points within the wall and a fence attached to the posts, indicating that this particular dyke/fence's function was to prevent livestock entering or leaving a certain area.

Since the primary use of the majority of the field dykes was to define land ownership, many of them can be quite low and roughly built. The dykes around Koguva, however, are of the taller variety that would have been built to fence in livestock. All the dykes I saw were double dykes. The greater width of these dykes in comparison to the single-boulder

dykes of Scotland can be attributed to the deep penetrating ground frost, which can reach a depth of half a metre on these islands. The thicker the wall, the greater its ability to withstand such conditions which would surely cause a less substantial structure to collapse. Field dykes generally range in width between 2.5 and 4 feet (80–120cm), with heights from as low as 16 inches (40cm) to over 3 feet (1m). In many dykes where limestone is the principle stone used there is no discernable batter. In the dykes where granite is dominant, as at Koguva, and the stones are of an irregular shape, the dykes have a noticeable degree of batter throughout and are built in random rubble style. Both types of dykes are finished flat and as tightly bonded as possible, with a cover band of large flat stones. Whilst a typical Scottish dyke would be topped off with a course of coping stones placed on the cover band to add weight and give protection, coping stones are absent from the dykes of this region, owing to their greater width. Another major difference from Scottish field dykes is the absence of a through band, which helps to bind and strengthen the dyke's two faces. This can be explained simply by the rarity of stones long enough to cross the wall's width. Any stones long enough, if available at all, would be kept for the cheek end of the dyke; but even this is not commonly seen. As in Scotland, hearting – the use of small stones placed within the dyke to strengthen it and also to prevent stones tilting inwards – is commonly employed in both church and field dykes. Good hearting is crucial to a dyke's longevity: over time, as the cycle of frost heave periods lift and resettle the dyke, a lack of hearting will inevitably result in structural weakening. As in all vernacular styles, generations of improvement have finally led to a point where further improvisation is not needed. A well-built dry stone dyke, which can last over 200 years relatively undamaged by nature, is living testimony to the workmanship of the islanders' ancestors.

Church dykes are more professionally built, and limestone has been the preferred choice of stone, especially on Saaremaa. This is most probably as a result of the relative wealth of the church in comparison to the individual farmers who built the field walls. Payment would have been an important factor in the construction of church walls, and would thus attract a better craftsman who also probably worked to specific measurements. Many of the church dykes consist of quarried limestone. This use of limestone would have greatly increased the cost of stone dykes. It is interesting to note that the dykes which I came across surrounding manor houses, such as at Pädaste Manor, also followed the

church style. This would imply that economic power played a major role in the differing qualities of church and field dykes.

In the village of Kaarma on Saaremaa, the church grounds are surrounded by an impressive dry limestone dyke, which has a couple of sections that have recently partially collapsed. These collapsed sections afford an interesting insight into the construction methods employed. The limestone dykes of Saaremaa have little in common with Scottish dykes. However, they can be compared in many ways to the stone walls of Kentucky, USA and the Cotswold area of England, both of which use limestone. It should be stressed that both the walls of Kentucky and those of the Cotswolds (to a lesser degree) employ the use of batter, which is absent in Saaremaa dykes. Kaarma church dyke, following the local style, has no batter on the dyke; and trace stones are commonly used, as in Cotswold walls. The dyke measures approximately 4 feet (1.2m) at the base – double the width of Cotswold walls – with an average height of 3 feet (1m). There is no evidence of through stones, and the hearting had been loosely packed – both of which factors probably contributed to the partial collapse. The dyke has a flat, tightly bonded finish and is in decent condition. In comparison to granite dykes – where the principle of one stone over two, two over one results in strong bonding – running joints are often found in limestone dykes. Considering the use of trace stones, lack of batter and running joints, all frowned upon by dykers, one wonders how this particular dyke has stood for some 200 years without any major collapse and looks as though it could last for a few more years. Interestingly, it is in this particular dyke that we find a fine example of the marriage of vernacular dry stone and dressed mortar wall styles, two distinct types of stonework that are rarely combined. Two dressed stone gateposts (see fig.3), specifically designed to accommodate the

Figure 3. The entrance to Kaarma Church, with its gateway and wall 'married' in a union which has lasted 200 years.

surrounding limestone dyke, impressively flank the entrance to Kaarma Church. This implies that dry stonework in this particular area, and at the particular time of construction, seems to have been appreciated from both an aesthetic and a practical viewpoint, resulting in it being taken into consideration during the planning process.

Travelling from Muhu in a westerly direction across Saaremaa, granite dykes become noticeably less common, as limestone is increasingly the predominant material used for the structures. By the time we arrive at Karala in the extreme west of Saaremaa, the dykes consist mainly of limestone with the odd glacial granite stone confined to the foundations. The placing of heavy glacial granite fieldstones at the base of the wall, with the lighter rectangular limestone filling in the top courses, is the preferred style – not for any aesthetic purpose, although it can look impressive, but simply for practical reasons. Large stones are generally used as foundation stones for all types of dry stone structures, as they produce a solid foundation to work from and can easily take the weight pressing on them.

Regeneration

The dykes of Koguva are protected by law as it is a designated cultural heritage site, but the same protection is not afforded to other dykes. However, there are clear signs that the Government is realising the importance of preserving this aspect of the islands' cultural heritage. During the period 2001–3, a pilot scheme was launched in order to help raise awareness of the issue. With financial help in the form of repair grants from the Estonian Agricultural Ministry, several miles of dyke were rebuilt in two municipalities on Saaremaa. By the year 2005 applications to repair, rebuild and establish stone dykes in Estonia totalled some 45 miles (70km) in all. This policy was a co-financed joint initiative by the Estonian Government and the European Union's Agri-Environment scheme, under which all applicants had to sign a statement agreeing to ensure their dykes were maintained for five years. A sum of 58 Estonian kroon (approximately £3) was paid per metre. The application of this far-sighted policy has resulted in a noticeable improvement in the condition of many stone dykes on the islands. However, much as governmental assistance is to be praised, it is ultimately the willingness of the community to get involved and help preserve this cultural asset that will prove to be the decisive factor in the repair and maintenance of the walls. Luckily the response so far seems to have been positive:

newly built and repaired walls are appearing throughout the islands, principally around homesteads and private homes. Whether this initiative will one day be expanded into field dykes remains to be seen, as the pressure on Government aid could be diverted to more needy causes within the agricultural sector.

An excellent example of governmental assistance and individual initiative coming together to protect the islands' walls can be best seen in the area of Karala on Saaremaa, where a remarkable woman, Kaja Juulik, has in the past five years rebuilt over 1.8 miles (3km) of dry limestone dykes. Her enthusiasm has been a spur to many others within her small community, the effects of which can be noticed in the number of repaired walls nearby. Kaja's hard work in constructing such beautiful dykes is even more remarkable in that she had no background in dyking until she lifted and placed her first stone five years ago. Her undoubted talent and sense of community spirit have resulted in the transformation of this small windswept corner of Saaremaa. It was a pleasure to wander over her land and marvel at how much can be achieved when an individual puts a vision into practice. Her artistry and vision of hope is brought to dramatic effect by the sight of a sailing boat bursting through one of her walls in a seemingly desperate attempt to get to the sea, which

Figure 4. The contrast between granite fieldstones and limestone is dramatically revealed in this section of repaired wall by Kaja Juulik.

Figure 5. An interesting example of Kaja Juulik's renovated walls at Karala. Kaja has added a new twist to the island's relationship with walls and boats.

lies tantalisingly only a few feet away (see fig.5). This image of renewal, motion and vitality is a perfect symbol of the upswing in the dyking regeneration in this beautiful area of the Baltic Sea. The contrast between the old moss-covered walls of Koguva village with their upturned boats, and Kaja's renewed walls brought dramatically to life by the emerging boat heading towards the open sea, gives hope for the continual redevelopment of this little-known area of the Baltic entering a new dawn in its often turbulent history.

After years of neglect, and with a small financial incentive, the island communities are in the slow process of reconnecting their past by reconstructing a future. The Soviet regime dispersed thousands of Estonians and bulldozed hundreds of miles of dykes for its grand and ultimately futile plans of collectivisation. As both the people and dykes of these islands were once displaced, it is somehow ironic that, now that Estonians are firmly and proudly back on their land, the old dykes are also being reconstructed.

KENNETH McCRAE'S MEMORIES OF AN ENGINEERING APPRENTICESHIP IN GLASGOW IN THE 1930S

Geoffrey Stell

Remembering Kenneth McCrae (1915–2007)

A long-standing member and active supporter of the SVBWG, Kenneth Campbell McCrae died peacefully on 8 September 2007, while seated in a chair, reading a book at his home in Castle Douglas.[1] Aged 92 and a dapper gentleman to the end, Kenneth had had a long and varied career as a civil engineer, and over more than a quarter of a century had enjoyed an almost equally active 'retirement'. He had selflessly placed his engineering skills and knowledge of the built environment at the disposal of a wide range of bodies with interests in Dumfries and Galloway, especially the Institution of Civil Engineers, the Scottish Civic Trust and ourselves. Given his deep interest in historic engineering works, Kenneth had what proved to be an especially appropriate last public engagement. In Langholm on 9 August, a month before he died, he cut the cake and proposed a toast to the celebrated founder of his profession, Thomas Telford, who had been born near Langholm 250 years ago to the day.[2]

I first met Kenneth in the 1970s when he was involved in the organisation and running of the Dumfries Civic Trust's lecture programme. Our initial meeting in an SVBWG context came in 1983 when Ingval Maxwell and I were planning the Group's first foray into south-west Scotland. In those days of conference organisation Kenneth's local help and advice proved crucial to the success of the annual meeting of the Group that was based in the Queensberry Hotel, Dumfries, in April of that year.[3]

His later contributions to the work of the Group included a short note in *Vernacular Building* 17 on 'The Parton Privy',[4] an extraordinary octagonal structure which housed eight privies serving a terrace of eight estate cottages. More recently, he was responsible for a 32-page booklet on the dovecots of Dumfries

and Galloway,[5] a survey instigated by SVBWG and carried out by Kenneth with the help of Jack Wilson and William Craig. His overall authorship of the work is recorded only in the small print of the acknowledgements where, with the same characteristic modesty, he registered the fact that 'it is not meant to be a full academic study but more of a social note.'[6]

Interviews with Kenneth McCrae

Always an easy and engaging conversationalist with a long memory and a keen sense of fun, Kenneth was ideally suited to become the first subject of a series of interviews with Scottish engineers, a project which was being planned by RCAHMS in 2003. Through the good offices of Gordon Masterton, RCAHMS Commissioner and Managing Director (Environment) of Babtie Group Ltd (now Jacobs), Kenneth, who had begun his career at Babtie, Shaw & Morton in 1932, kindly agreed to become our first 'guinea pig'. It was my privilege to interview and record him, then aged 88, at his home in Academy Street, Castle Douglas, on 5–6 April 2004.[7] Later that summer, we followed up our discussions with a day excursion, visiting a number of structures in south-west Scotland that had been important in the earliest and latest phases of his career. We also visited the headquarters of Babties in Glasgow where, among the papers relating to the Afton Dam and Reservoir, Ayrshire, we were able to identify one of his earliest survey drawings. Stimulated by what proved to be both a useful and a pleasurable experience, Kenneth in turn was able to lay the ground for a similar dialogue on the part of Veronica Fraser and myself with his architect friend, Antony Curtis Wolffe of Gatehouse of Fleet, in August 2004.

Kenneth's career as a civil engineer divides itself conveniently into three main phases. It began with an unpaid apprenticeship with Babtie, Shaw & Morton, Consulting Engineers, Glasgow, from 1932 to 1937. Over the next 18 years his work, mainly on water supply and sewerage schemes, took him initially via Monmouthshire and Colchester round much of the globe through wartime Malaya, Indonesia and Ceylon to South Africa, Exeter, and back to South Africa, not finally returning to his native Scotland until 1955. From 1955

until the reorganisation of local government in 1976 he was Depute County Engineer of Dumfries County Council, serving out the rest of his time until 1979 as New Works Engineer for the Water and Sewerage Department of Dumfries and Galloway Regional Council.

Interspersed with exciting wartime experiences, Kenneth's was a full, rich and varied career which, to do it justice, would require a booklet of the size of *VB* devoted entirely to it. Rather than spreading his whole life story thinly across a few pages, therefore, it seemed that the best and most appropriate tribute to Kenneth would be to focus upon the period of his apprenticeship with Babtie, Shaw & Morton.

This first part of the interviews with Kenneth provides an especially valuable and rare personal glimpse into the world of Scottish civil engineering between the wars. It is a dedicated apprentice's view of a world that already seems remote in its techniques, practices and conduct, and yet it is one that also remains familiar in its demands for exacting and precise standards of survey, design and workmanship.

The extracts from our conversations have been regrouped slightly here and there in order to fit within the topics denoted by the subheadings.

To be a civil engineer

As a youngster Kenneth's ambition had always been 'to build something' and a family friend eventually put a name to this ambition: 'a civil engineer like me'. Kenneth recalled that when he later told his school headmaster that he wished to be a civil engineer, 'he looked at me and said, "The only engineer you will ever be is a taxi driver." Unfortunately that was the wrong thing to say as it made me more than ever determined to be a civil engineer.'

Having failed to get into university from Glasgow High School, Kenneth recollected that 'by the time I was seventeen I decided that to be a civil engineer I must serve an apprenticeship.' Another family friend gave him a list of offices and names, and he eventually fetched up at the offices of Babtie, Shaw & Morton at 17 Blythswood Square, Glasgow, where he met Mr Banks, a newly created partner of the firm.

About three weeks later he was invited to meet Mr Babtie himself and was eventually offered a five-year unpaid apprenticeship starting on 1 November 1932, surviving during that period on a small independent income. It was only in the last three months of his apprenticeship that a scheme to pay apprentices was introduced, starting at £12 per annum and rising through annual increments of £6 to £36.

Babtie, Shaw & Morton: an apprentice's view, 1932–7

Kenneth's recollection of John T Babtie, the founder and senior partner of the firm, was that he

> was very easy to get on with ... [though] … quite demanding. If we did drawings, particularly feu-duty plans of Dumbarton estates where his father had been provost, these were sent down to him and if they were not exactly right we would have to do them again.… There was no sort of domineering about it. It was just

Figure 1: Kenneth McCrae at Babtie, Shaw & Morton, 17 Blythswood Square, Glasgow, 19 March 1937. (RCAHMS, SC 850218; reproduced courtesy of RCAHMS)

> a case of having to learn to do things properly. He [Babtie] started as a consulting engineer in Dumbarton in 1895 [aged 28] and was senior partner until he died … sometime during the war.

His recollection of the Babtie office in Blythswood Square is also worth quoting *in extenso*:

> When I joined I think there were 16 or so staff … I was given a place at a drawing bench in the back office under Willie Smith. I spent most of the first few months learning to do block printing and tracing old plans to get used to handling drawing instruments. Time outside the office was spent mostly pegging out feu plots for housing and measuring quarries for the assessment of the volume of rock taken out for the calculation of royalties. It was a case of introducing me to outside work and to the types of drawing they did … none of the drawing material, only the heavy stuff, was supplied by the firm. You had to buy your own drawing instruments … [and you were told] … where you would get them.
>
> Suits always had to be worn to the office where we had old jackets in order to avoid wear at the cuffs and elbows on the drawing desks. Sports jackets and flannels were only allowed on Saturdays or when going out on a survey.
>
> The office at 17 Blythswood Square was on two floors. On the first floor Mr Babtie had his office, and there was a small room which was the general office. There was a secretary/clerk Walker Sutherland and a typist. Upstairs in the front office there were a number of people, three I think, who had just finished their apprenticeships, together

> with the senior apprentice Robert Gilchrist. In the back office there was Willie Smith and myself. Mr Banks had a small room at the front. There was also a large cupboard, a plan room and a WC. It wasn't until the middle of 1933 that Mr Morton's office on the first floor came back into use.

It fell to the apprentices to act as stokers for the fires in each room. Staff diversions included 'a form of curling played with weights, that is, tobacco tins filled with lead normally used in place of drawing pins' and table tennis. 'The net was a steel straight edge set up on wooden pieces from the centre of a roll of drawing paper.'

Drawings and record-keeping

Kenneth recalled the ways in which drawings were prepared, copied and stored:

> We had no drawing boards. All the desks were flat-topped and you used parallel rules and set squares. The drawings were done in pencil and then traced onto linen in black lines with a drafting pen. If coloured lines were required you had to mix up the colour … by grinding a stick of colour in a porcelain dish. I believe I was the first apprentice who did not have to grind up the black ink from a stick of 'Chinese Black' for the day's work … The colours were watered down to colour the black-and-white prints.

> The office had no equipment to make copies of plans. This was all done at the Glasgow Drawing Office in York Street near the Broomielaw. The apprentice had to take the tracings on linen down to this office and then go back later to collect the dried black-and-white or blue prints, both of which were made with a wet developing process.

> The working practices of Babties involved record-keeping in various forms. Each version of a drawing had a sequential number and each contract started from drawing No.1 and again followed a number sequence. There were three coloured books kept: the red ones were level books; the green ones were surveys with theodolites, tachometric surveys and that sort of thing; and the black ones were general note books. For the drawings there was a register of sequential numbers and there was a separate book for each contract.… A small space, probably a cupboard in the original house, was known as the plan room and there all the plans were kept carefully docketed, numbered and easy to find.… There was no archivist, each person being responsible for getting the right number and for entering things in the right books.

Drawing and surveying techniques and instruments

A pair of apprentices had 'to go with the chains, steel band and tapes at least quarterly each year to check them against the standard measures in George Square. Then each one had to be labelled with a note of any error. The instruments also had to be checked, … by Mabons, the instrument makers in Bothwell Street.'

> The firm provided parallel rules because they were big heavy things. Set squares, compasses, drawing instruments and scales you had to provide yourself. Generally you built these up over time. We had a desk drawer which you were allowed to tinker about with as you liked to make trays for your individual needs.

> For surveying work … the apprentice had to carry the legs of the instrument, the staff and the ranging rods, as well as the tapes and chain. The assistant carried the instrument. When all tied up, the legs, staff etc. were

> referred to as the 'bundle'. If an early morning train had to be caught, the 'bundle' had to be … deposited [overnight] in the left-luggage at the station.

In carrying out surveys,

> … we were not always just a team of two. On the survey of the Gogo Burn, which was part of a plan to erect a dam, there were four of us. That was partly because we could have two persons holding staffs, a third measuring things or holding the end of a tape, and a fourth person, the senior member of the team, reading the level instrument. Compared to today's surveys it was very primitive. [The Gogo survey] took three days and was very cold, near Christmas. In fact it came on to snow one day a sleet blizzard.… We stayed at a hotel in Largs and hired a taxi each day to take us to the job. Cars in those days were still quite rare.

Figure 2: DAF Colville, Kenneth McCrae, Hugh Black and George Gray at the Gogo Burn Survey, December 1936. (RCAHMS, SC 850232; reproduced courtesy of RCAHMS)

Relationships with contractors

There were much closer links between the consulting engineers and the contractors in those days:

> In the 1930s consulting engineers wrote their own specifications and took off their own quantities for the job in hand. There were no standard conditions and we generally dealt with contractors who we knew were sympathetic to the work. They in their turn tended to tender only for consultants whom they knew. During the jobs young apprentices like myself watched the contractors and were taken in almost as part of their staff. They didn't regard us as a separate entity, we were all together. The settlement of final accounts was therefore relatively easy because it was a contractor's man, probably an engineer, dealing with an engineer. … It was all very friendly … and the whole thing was a unit, which I'm afraid today I don't think it really is, not the same friendly arrangement.

> When it was a case of building a dam or water supplies [the contractor] was Wilson, Kinmond, & Marr, Duke Street, Glasgow.… For sewerage works it was generally Casey & Darroch, from Falkirk, I think. At the latter end of my apprenticeship, at Hamilton main drainage scheme, we used a Motherwell contractor, Murdoch Mackenzie.

Major projects

Geographically, Kenneth's experiences reflected the regional scope of the firm's operations:

> As well as the office in Blysthwood Square, there was an office in Kilmarnock where Ritchie Campbell was in charge of the Kilmarnock Main Drainage Scheme. On the Ayrshire Water Scheme Hugh Black, Jimmy Lee

(whose father was Burgh Surveyor of Paisley) and William Young had an office in Cumnock.

Most of the schemes I worked on were in Ayrshire or Dunbartonshire. The first scheme of any size was the Ayr County Water Scheme which was based on the construction of a reservoir on the River Afton near Cumnock. Still in use, the reservoir behind the dam fed into two big figure-of-eight distribution systems with separate storage tanks at high points on the scheme. Nearer the coast some of them had smaller, break pressure tanks.

Figure 3: Kenneth McCrae at a survey at McMillans Yard, Dumbarton, 1934. (RCAHMS, SC 850220; reproduced courtesy of RCAHMS)

> In June 1934, with Hugh Black and Robert Gilchrist, I spent a week surveying the Afton Dam basin staying in a hut on the site. Another survey that year was McMillan's shipyard in Dumbarton which had been taken over by a Canadian whisky distillery company. It must have also been about this time that the Distressed Areas Act came into force, allowing work to start on sewerage schemes at Armadale and Dumbarton.

Kenneth also spent significant amounts of time in 1936 and 1937 on a main drainage and sewage treatment scheme at Hamilton and assisting with surveys of reservoirs under the Reservoirs Safety Provisions Act. Finally, in October 1937, his apprenticeship ended 'and after a number of interviews I went to the Western Valleys (Monmouthshire) Sewerage Board as a resident engineer on a direct labour scheme to replace a mile of trunk sewer damaged by mineral settlement.' He was destined not to return to Scotland again until his appointment in 1955 as Depute County Engineer (Water and Drainage) of Dumfries County Council.

Notes

1 See the obituary by Gordon Masterton and the memorial by Roland Paxton in *Civil Scotland* (Institution of Civil Engineers, Scotland), No.6, 2007, p.11. I am indebted to both Gordon Masterton and Roland Paxton for their ready help in the compilation of this account.

2 Institution of Civil Engineers, *Panel for Historical Engineering Works Newsletter*, No.115, September 2007, p.5.

3 [Ingval Maxwell and Geoffrey Stell,] Programme and Building Notes, SVBWG Dumfries Conference 1983.

4 Kenneth C McCrae, 'Interesting Snippets: The Parton Privy', *Vernacular Building*, No.17, 1993, pp 68–9.

5 [Kenneth C McCrae,] *Dumfries and Galloway Doocots*, Dumfries, n.d. (*c*.2002). Remaining copies of this booklet are available by post from Dr David Devereux, Museums Curator (Stewartry), The Stewartry Museum, St Mary Street, Kirkcudbright, DG6 4AQ, price £3.00. Cheques to be made payable to 'Water Aid' and A5-size

s.a.e. to bear ordinary first- or second-class stamp for delivery of a single copy in the UK. For multiple copies and other destinations, telephone 01557 331 643.

[6] Ibid. p.31.

[7] RCAHMS, National Monuments Record of Scotland MS 5117, Scottish Civil Engineers on Record, No 1, 2004: Interviews with Kenneth C McCrae, tapes and transcripts (Tape 1, The Babtie Years 1932–7; Tape 2, Ex-Scotland 1937–55 and Dumfries County 1955–76; Tape 3, Site Visits). I am most grateful to Veronica Fraser for her help in sourcing and referencing this material and the accompanying images.

SHORTER ARTICLES AND NOTES

Sandness Mill, Shetland

Andrew Young

Among the most remarkable of the Norse mills – and indeed of all the horizontal mills, which at one time were widespread throughout Asia and Europe – is that at Sandness in Shetland. The technology embodied in these structures is ancient and, as it is thought to be one of the first industrial technologies, is possibly the precursor of all machine engineering. The earliest reference to such machinery seems to be from 65 BC, and relates to mills in central Asia.

The Norse mill differs from the normal type in that the mill wheel is mounted horizontally and drives the millstones directly without any gearing. The wheel is located in a basement (the underhoose) and the millstones in a chamber above. The lower of the two stones is fixed. Grain is automatically fed in from a hopper. These structures were small, about 9 by 6 feet (2.7m x 1.8m) internally and of dry stone construction.

Just how widespread these were within the United Kingdom prior to the introduction of feudalism and the system of estate tenants being bounded to the estate mill is an interesting question. Their survival in Shetland, at least, seems to show the continuation of Udall economic structures long after the acquisition of the northern islands by the Scottish Kingdom and the subsequent subjugation of the Norse inhabitants to the economic systems then prevalent in Scotland. Mills were normally held in common by several crofts: they were used up to the third decade or so of the twentieth century.

The Sandness mill was driven by a burn subject to spate. At some point in the 1920s the dry stone structure was swept away and was replaced on the same site by a certain Jemmy Pole; however Mr Pole decided to adopt a modern build and used mass concrete to house this 2,000- or 3,000-year-old design.

To find, in the first half of the twentieth century, a technology millennia old being used in conjunction with the most up-to-date

building techniques is, I think, remarkable. I believe it gives valuable comment on the practicality, pragmatism and forward looking of the Shetland people: the horizontal mill was then still the most practical solution to the social/agricultural requirements of the time, but there was no hesitation in adopting, and adopting with a substantial degree of flair and technical competence, the most modern construction techniques available. It is comparable to a quinquereme being used to lay oil pipelines beneath the ocean, not out of sentiment but because that craft gave the most practical solution to the task at hand.

The structure is recorded by RCAHMS (site reference HU25NW 9; Ordnance Survey reference HU 2058 5740) as 'A cast concrete mill now roofless and gutted'. Of greater significance in underlining the importance of the structure is the fact that it appears in J R Hume's 1977 *Industrial Archaeology of Scotland* (Volume 2: Highlands and Islands).

The mill was still roofed in the 1950s and was used as a play-house. Sometime about that date the millstones were removed by the erstwhile local doctor to be a feature in his house at Levenwick.

The underhoose is built from a single thickness of stone. One at a corner is now missing. This, with the loss of the (probably) wooden beams that gave support to the concrete structure, is placing considerable strain on the building. Burns tend not to change their nature and this mill burn presents a present and future hazard to the building. Work to ensure the survival of the structure would be minimal and could be accomplished by two men, a concrete mixer and a pre-stressed beam in a day or so. It would be a great pity to lose a unique piece of Shetland's built heritage when it could be saved for such a minimal cost.

SVBWG CONFERENCES AND MEETINGS

2007 Annual Conference
Fife: The Interior, 27–30 April

Our base for the exploration of the interior of Fife was the comfortable Lomond Hills Hotel in the small weaving village of Freuchie. The conference began with a lecture by Dr Paula Martin, which displayed her encyclopaedic knowledge of the area.

Saturday's activities began in the picturesque village of Ceres, where SVBWG members swarmed over the fascinating Fife Folk Museum, and then were most grateful for coffee and scones at the Ceres Inn, open for us despite flooding! Our next stop was the pre-Improvement farm of Greigston, a charming house with a wonderful steading. Discussions focused on a vaulted structure, with suggestions of a bastle house arising. Fortified by an excellent lunch at Pitscottie, we were taken on a tour of Cupar by Paula Martin. From examining the castle site, and tracking down a set of bee boles, we headed for the Parish Church through one of the narrowest thoroughfares encountered on an SVBWG conference. The church and its graveyard provided much interest, before we headed off to Scotstarvit Tower which provoked further discussion regarding its purpose.

On Sunday, following the AGM, we headed for Newburgh where again we were guided by Paula up and down the town, taking in the former water supply, before finishing at the peaceful Lindores Abbey. After another excellent lunch, the sun came out as we arrived at Collessie to visit the church and the delightful restored studio of artist Marianna Lines. The final visit of the conference was to the sixteenth-century Monimail Tower, where the basement was used as an ice-house in the nineteenth century, and an upper chamber has eighteenth-century pine panelling. Set in the peaceful surroundings of a co-operative garden, complete with vernacular chicken houses, it was a fitting end to the conference tour. Back in Freuchie, the conference concluded with an entertaining and informative lecture by Dave Hutchinson on 'The Anstruther Chair'.

2007 Autumn Meeting

Cousland and Fala Villages, 3 November

More bracing conditions were in store for those who attended the Autumn meeting in these two Midlothian villages. Organised by Dorothy Kidd, the day trip began in Cousland Village Hall where we were treated to coffee, warm croissants and an introductory talk by David Connolly, who then led a guided tour of the village (see pages 29–34 of the present volume for his report on the so-called 'Nunnery'). The second half of the day comprised a talk given by Lindsay Errington at Fala Village Hall, followed by a fascinating tour of Fala and of the dramatically situated nearby Soutra Aisle.

2008 Annual Conference

Inveraray Revisited, 25–28 April

This year the Spring Conference returns to Inveraray, where it was held 24 years ago in the SVBWG's twelfth year. The history of Inveraray is dominated by the Duke of Argyll, who instigated the removal of the old town adjacent to his estate and, between 1744 and 1756, developed a new town some distance away. The architects principally responsible for the new town were Robert Mylne and John Adam, whilst Mylne was also commissioned to design additional buildings on the estate during the same period. Based at the recently refurbished Loch Fyne Hotel, the conference will include visits to Inveraray Town and the Jail and Courthouse Museum, a guided tour of the Castle Estate led by Ian Fisher, and an excursion to Auchindrain, as well as the AGM.

2008 Autumn Meeting

Stanley Mills and Murthly, 1 November

The 2008 Autumn Meeting is due to include a visit to Perthshire's Stanley Mills – founded in 1785, and one of the most complete surviving early cotton mill complexes in the UK – which has recently been opened to the public by Historic Scotland. A trip to the Murthly estate, with its fifteenth-century castle and its Chapel of St Anthony the Eremite, rebuilt in 1846 by James Gillespie Graham, is also planned.

SVBWG PUBLICATIONS

Forthcoming publications

Doocots of Scotland: Highland, Orkney and Shetland by Elizabeth Beaton is expected to be printed by the time of the 2008 Annual Conference. It is the third in the 'Doocots' series: titles on Moray and Lanarkshire have already been published, while further volumes on East Lothian, Dumfries and Galloway and Fife are in preparation.

Publication sales

In addition to the journal *Vernacular Building* and the 'Doocots' series, the SVBWG has published several other regional and thematic studies. A full publications list can be downloaded from www.svbwg.org.uk

REVIEWS

Edited by Veronica Fraser

Stells, Stools and Strupag

Campbell Slimon. Laggan Heritage. 2007. £9.50. 108pp. Available from Campbell Slimon, Feith Buidhe, Laggan, Newtonmore PH20 1BZ, for £9.50 plus £2 postage and packing.

This is a very personal reminiscence of one man's involvement in sheep farming in the parish of Laggan. Using this story as a context, the history – and future – of sheep rearing in the parish, the Highlands, and Scotland as a whole are examined. As part of this history, the structures associated with sheep rearing – stells, fanks and stools – are explained, and a basic history of the parish's farms is provided. Using extracts from contemporary writings on agriculture and sheep rearing as well as contributions from other present-day authors, and drawing from an archive of material ranging from shearing machine advertisements to Highlands & Islands Sheep Health Association regulations, Slimon is able to tell the story of a myriad of aspects of the parish.

Slimon's family have farmed in the parish of Laggan – which contains Drumochter, the coldest place in Britain – for generations. Using the calendar of lambing, gathering and clipping, he describes the events of the year, each of which would provide a reason for social gathering, the 'strupag' of his title. Neighbouring farmers would assist each other, knowing that they would be helped in their turn. Slimon traces the change in sheep rearing from the time of the introduction of commercial sheep farming and the resultant clearances, through boom times, to an era of uncertainty.

Associated with the hard but communal work of sheep rearing are various structures, the preservation of which gave Slimon the idea of recording his reminiscences. Struck by the decay of the many fanks and stells of the parish, he played a part in moving an early-twentieth-century shepherd's bothy from Presmuchrach to the Highland Folk Museum at Newtonmore in February 2007. The story of the transfer of the bothy, constructed from recycled railway sleepers, is told by

Bob Powell, Curator of the Highland Folk Museum. Powell also describes objects from the Museum's collections associated with sheep rearing such as shears, branding irons and crooks. In an associated move, a fank and fank boiler for sheep dip were transferred to Newtonmore from Breakachy, Laggan. The reconstructed fank would serve as an historical illustration, but could also be used for the control of the Museum's own flock of sheep. Nick Aitken, a dyker, relates the history of dry stone construction, and also its use in the building of Highland sheep fanks – structures used not just for gathering sheep, but ingeniously designed to assist with their management during the procedures of lambing, dipping and shearing. Gateways and divisions would allow the shepherd to divide off particular sheep; one sheep fank would incorporate more special dyking features such as shearing stools, cheek ends, gateways, square corners, round corners, narrow passages and assorted openings than a dozen miles of field dyke. Other writers have contributed to a gazetteer of fanks in the parish, including Shesgnan, early nineteenth century and 112 feet long, and Sherrabeg, a complex structure partly flooded following the construction of the Spey Dam. The fanks have all been functionally replaced by modern structures and some are falling into decay, but others have found new uses such as a children's play area, a vegetable garden and a pheasant-rearing pen.

The simpler structure, the stell, is also described. A basic structure to provide shelter for the sheep, the maximum optimum diameter of a stell is 12 yards (11m); a larger space allows snow to gather inside. Perversely, sheep have discovered that the best shelter is often to be found on the outside of the stell, on the lee side, thus avoiding any circulation of wind and snow inside.

Fanks, stells and their sites are located on maps of the parish in the book's end papers; also featured is a helpful glossary. The book is heavily illustrated with contemporary and historic photographs, as well as drawings of the sheep structures described, and memorabilia related to sheep rearing. While a little more editing would have produced a more polished volume, one would not wish to detract from the achievement of an author who has combined work on a farm, contributing to the preservation of vulnerable structures, and the important, compassionate telling of the hard life of the sheep farmer.

Reviewed by Veronica Fraser

Elgin: The Story of the High Street and Closes

Mary Byatt. Elgin. The Moray Society. 2006. 61pp. £8.99. 978-0-9554734-1-8.

This book provides a useful and informative guide to the closes of Elgin, and records what remains of the close system of the town's medieval past. While many of these narrow streets have been replaced and rebuilt, sufficient survive to give an impression of the historical town; this publication is designed as a guide to a walking tour to aid their appreciation.

The book begins with the history of Elgin; the first record of a castle dates from 1040, but archaeological finds indicate a much earlier settlement. In 1224, the Bishop of Moray's seat moved from Spynie to Elgin, leading to a growth of the town, which in 1400 became a self-governing Royal Burgh. Burgess houses developed along the High Street; behind these grew parallel rows of thatched cottages in narrow alleyways at right angles to the High Street, thus forming the closes. There were usually ten houses to a close, all built on the west side. Thatching was banned in 1735 due to the risk of fire. By the seventeenth century, there were between 175 and 200 closes running off the High Street. During the seventeenth century burgh architecture flourished; a few buildings featuring an arched arcade with walkway on the ground floor survive. Many of the burgess houses were replaced by nineteenth-century commercial buildings, and the wealthy moved out to the town's suburbs. By the late nineteenth century a 'greater' part of the population lived tucked away in the closes, some of which were respectable whilst others were condemned for their poor living conditions and the potential lawlessness of their inhabitants. Contemporary photographs and drawings illustrate the closes at this time. After the First World War, housing schemes were developed on the edge of the town, and the inhabitants gradually moved out; now only a few pre-1900 houses in the close area continue in residential use. Many of the closes were demolished, but others survive and were restored. Some of the buildings are listed, and some of the restorations were given awards.

The tour section of the book, which might have been usefully printed in a pocket-friendly format rather than A4, begins at the east end, examining north and south sides in turn, followed by the centre

and western sections. As well as describing the buildings in detail, relating their dates, history, the level of survival of original structure, uses and inhabitants, the book also indicates the best viewpoints, such as the first storey of the car park. One of the most fascinating purposes of the book is its recording of the many surviving armorial and decorative fragments which are built into current structures, or made into individual features. It is to the credit of the builders, planners and heritage workers of Elgin that so many of these features, so easy to overlook, have been given such prominence.

Reviewed by Veronica Fraser

Scottish Life and Society, Volume 6: Scotland's Domestic Life

Edited by Susan Storrier. Edinburgh. John Donald. 2006. xxxii + 928pp. £50. 0-85976-649-7.

This is a wonderful book to which everyone can relate because it describes how people live in their houses. It examines domestic life in Scotland from the historic past to the present day, and provides a forensic analysis of every aspect of each activity and how houses were built to accommodate these activities. Thus, aspects such as cooking, heating and home industries are discussed alongside other less expected aspects of how we live: childbirth in the home, washing and grooming, reading and study, and music, with very contemporary subjects such as watching television and life in student flats. We are thus reminded that today is the future's past. The even-handed selection of subjects for analysis has provided a beautifully balanced and varied book; each chapter can stand alone, but each author adopts a common approach. It must also be stressed that people do not just live in homes, as chapters are devoted to prisons, nursing homes, religious communities and temporary accommodation for workers, as well as the perennial problem of homelessness.

One could dwell in depth on the detail of each chapter and the story it tells, and researchers of many subjects will find themselves constantly reaching for this book from their bookcases. Students of vernacular buildings will find themselves well served and enthralled by a wide range of chapters which describe structures associated with many different activities and tasks, in different

levels of society, and how those structures were appointed. The extent of the variety of dwelling places is stressed by the fact that, after many chapters covering specific housing types and the activities associated with them, chapter 46 turns to those that are not so easily categorised, examining 'Idiosyncratic Homes' such as the Edinburgh Colonies, lighthouses, tollhouses and estate dwellings. Thus an exhaustive picture of where and how the Scots have lived is completed.

It would be foolish to attempt to summarise this book: a few highlights, in particular those relating the vernacular buildings, should suffice to illustrate its myriad of subjects, and the immense scholarship in its writing, commissioning and editing. At this point, praise should also be given to the excellent index, essential in a book of such variety.

Geoffrey Stell introduces the subject, dealing with the issue of what a house actually is and examining its primary purpose as shelter from the elements. He looks at buildings from underground cave dwellings to Nissen Huts and tower blocks, pointing out the interesting fact that that the new town of Cumbernauld was built on a windy hilltop site, in defiance of lessons learnt throughout man's history of habitation.

David Jones considers storage from Skara Brae's stone dressers onward, and its practical or status-stating function, through to how today's homeowners store pasta and CDs. The regional variations of different types are examined: coal bunkers, for instance, were located by the kitchen sink in east-coast homes, while in the west they were housed in the lobby.

Alexander Fenton deals with lighting, sleeping and heating, and contributes to Miles Oglethorpe's essay on personal hygiene. The lighting chapter covers both communal and domestic aspects, from the regulations regarding street lighting in sixteenth-century Edinburgh to the very basic methods of illuminating one's way around one's home. This is one of many chapters emphasising the ease of twenty-first-century living, as one considers how indoor light, taken for granted now, could be so hard to achieve until the latter part of the nineteenth century. Fenton's analysis of simple lights such as cruisies and fir candles demonstrates the development of this aspect of domestic life, and is further enhanced by his study of

the nomenclature of the object and its associated smells. The hardiness of our ancestors is emphasised in the chapter on sleeping and heating – 'cold was a fact of life'. The full story of heating is told, from the very basic provision of warmth to the development of such decorative features as mantelpieces, and the separation of cooking from heating facilities.

Chris Whatley examines the many activities that have been carried out in the home to generate income – from wet nursing to brewing, flax spinning and linen weaving – stressing it as a place of production and income generation, very often for women. The homes of fisherfolk earn their own chapter as Reginald Byron stresses the uniqueness of that way of life. East Neuk villages such as Pittenweem had fisher housing along the lines of industrial towns, so vital was it to the local economy. Also associated with work are temporary places of residence, as outlined by Roger Leitch in '"Time Out" Work' as he looks at shielings, the accommodation for herring girls, salmon bothies, farm bothies, and also the huts of itinerant craftsmen and labourers. Continuing the subject of more temporary buildings, Hugh Gentleman stresses the transient nature of many of Scotland's vernacular buildings such as blackhouses which will return to the soil if not maintained. He also examines the often overlooked subjects of huts and hutters, and also travelling people.

In short this book is essential reading; the story, and images, of Scotland's people in their homes, are excellently portrayed.

Reviewed by Veronica Fraser

The Scottish Countryside: Its Changing Face 1700–2000

Rosemary Gibson. Edinburgh. John Donald. 2007. ix + 196pp. £25. 0-85976-686-1.

The Scottish Countryside derives from the National Archives of Scotland exhibition, 'The Face of the Country'. It provides, in extremely readable and accessible form, a scholarly account of the development of Scotland's countryside from the beginnings of the agricultural revolution. It is, as one would expect, beautifully illustrated with plans from the NAS plan collection; excellent selection and reproduction have led to a fascinating volume which

examines many aspects of Scotland's countryside and how many factors led to its alteration.

Following an introduction which briefly describes Scotland's appearance prior to the eighteenth century, which had not changed to any great degree since medieval times, aspects of the process of change are examined. Thus the story from the time of runrigs through to the use of the countryside for power generation and forestry is told, thematically, on subjects including drainage, rural housing and planned villages, and essentially chronologically. Each chapter, following a context-placing introduction, features several large-size reproductions of plans, and details from plans, accompanied by a detailed description and historical background.

The development of the Scottish countryside was ultimately to lead to the breaking up of its communities and eventual de-population, but the harsh living conditions of its people cannot be denied. The introduction of large fields with definite enclosures, crop rotation and new ploughing machinery radicalised the process of farming, changing it from subsistence to a commercial industry. As the countryside and farming changed, so did the buildings in which people lived, worked and stored. The plans portrayed in this volume provide fascinating evidence of the changes and development of rural buildings.

A 1772–3 plan of Garmouth at the mouth of the River Spey shows the random development of the village, with its buildings portrayed not in plan, but square on. In common with many similar plans reproduced, these are schematic rather than accurate depictions of the buildings, but one gains the impression of the relative size and structure of each one. The development of large houses, such as Alloa House and Arniston, is dealt with in detail, because it was their owners and immediate surroundings that were so instrumental in the development of the wider parts of the countryside. The cottar in the small house depicted on the plan would ultimately be displaced by the changes implemented by the owner of the land. Such changes are very well demonstrated by a plan of enclosures at Pitkellony, Perthshire, which shows the outline of the new regular enclosure superimposed on the unimproved landscape. With such changes, fermtouns, such as Easter and Wester Drumshaggs in Renfrewshire, illustrated in a plan of 1759, would disappear.

Activities which would radically improve and alter the landscape are dealt with in detail, including a section on drainage which is accompanied by an excellent cross section of an 1802 covered drain at Coulchastle in Moray, and another on tree planting, for which such settlements as Garmouth were developed. Mining and other forms of extraction would also deeply alter the landscape with industrial scars. New structures such as the limekiln at Bargany, Ayrshire, illustrated in 1774, would appear, and new settlements arose to accommodate such industries. Strontian in Argyll was built following the discovery of lead in the area; the depiction of the settlement of houses and industrial buildings in 1733 is more accurate in its portrayal than some earlier views of rural buildings. The industries at New Lanark and Stanley, exploiting fast-flowing rivers where settlement had not been made before, led to buildings that would not appear out of place in an urban environment.

Before improvement, houses would be built by their residents and the community, but from the beginning of the eighteenth century, plans were drawn up, and consideration given to constantly improving ventilation, lighting and construction, as well as enlarging the accommodation where possible. An excellent sequence of illustrations shows how rural workers would be accommodated: the foreman and henwife at Panmure had single-room dwellings in 1701; at Garrichrew, Perthshire, the shepherd, gamekeeper and ploughman were accommodated in a terrace of houses in *c.*1804; and in 1830, no less an architect than William Burn was designing a farmhouse and cottages for the Duke of Buccleuch's estate at Drumlanrig.

Changes in the Highlands and Islands had a less happy history than elsewhere in Scotland: the legacy of the 1745 Rebellion followed by the Clearances led to inadequate relocation of the population, and coincided with crop failures. Unrest and public anger led to mass migration, such as from Sollas in North Uist. New villages were seen as a possible answer to social problems: Fochabers and Archiestown are cited, and an excellent naïve portrayal of Tobermory in *c.*1790 is reproduced. New crofts would be planned, such as those at Grenitote on North Uist in 1898; the crofters were given grants by the Congested District Board to assist in their construction.

The construction of roads and bridges, originally with the aim of

making remote areas easier to govern, benefited the population with the provision of jobs and an improvement in the transportation of produced goods. Populations sprang up on the roadsides, as illustrated in a vignette of a small settlement near a bridge on the Thurso to Dunbeath road in 1797. Harbours also led to improved communications, and associated buildings such as Pultneytown, Wick and Buddon Ness lighthouse (1767), are illustrated.

This is a most useful read for anyone wishing to assess the changes made to the Scottish rural areas over the past 300 years, but in particular, it is a treasure of superb images of Scotland's buildings and countryside.

Reviewed by Veronica Fraser

My Little Town of Cromarty: The History of a Northern Scottish Town

David Alston. Edinburgh. Birlinn. 2006. xxvi + 372pp. £25. 978-1-84158-527-7.

A remarkable book about a remarkable place, *My Little Town of Cromarty* is a *tour de force* on the part of SVBWG member, David Alston – the fruits of two decades of detailed research into the history and culture surrounding his adopted home town.

Well known to the SVBWG, thanks largely to Dr Alston himself, Cromarty is remarkable as a small coastal town whose streets and buildings still retain much of their pre-Victorian physical character and general ambience. Its delightful mix of vernacular and semi-formal or artisan mannerist architecture is more than a match for any other place of comparable size in Scotland and forms a perfect setting for the birthplace of the equally remarkable stonemason-turned-luminary, Hugh Miller (1802–56).

There are three qualities that make this book remarkable. Firstly, and quite simply, it stands as an encyclopaedic source of reference to everything relating to Cromarty over the past 350 years, with the deliberate exception of the life and works of Hugh Miller. Secondly, conforming to the best traditions of collective urban biography – recently displayed in Mary Cosh's account of 'Golden Age' Edinburgh – this book presents the personalities of this small community over the centuries, charting the many-

faceted attitudes and contributions of patrons and inhabitants alike. In frank and dispassionate human terms, the author sets out their strengths, hopes and successes, their weaknesses, despair and failures, their cohesion through 'social capital', and, equally, their divisions, tensions and conflicts, a fiercely disputatious history that belies the apparent gentle calm of modern-day Cromarty. In the third place, by setting his subject in a broad context, the author has produced an exemplar of local history. Reflecting the vital importance of farming and fishing to the local economy, he pays just as much attention to Cromarty's agricultural and maritime hinterlands as he does to the town itself. Its urban and commercial status and its fluctuating fortunes are viewed not in isolation but in relation to those of other northern burghs, especially of Inverness which remained jealously alert to any real or perceived threat to its own external trading privileges as a royal burgh. And through such regional and national perspectives the author also heightens the reader's appreciation of, for instance, the scale and precocity of the hemp manufactory established in Cromarty in the early 1770s.

This history of Cromarty is set here within a broad four-part chronological framework – before 1660, from the 1660s to the 1760s, 1760s-1843, and since 1843 – each phase being divided into social, economic and political themes and sub-themes. The period between the 1660s, when historical records become more abundant, and the second quarter of the nineteenth century was when, in the author's words, Cromarty 'was at its most prominent'. A detailed study of this heyday thus forms the core of the book, making up some two thirds of its overall length.

Originally a royal burgh in the thirteenth century, Cromarty was granted by Robert I to the earls of Ross in 1315. The earls' rights over the burgh appear to have lapsed long before their forfeiture of the earldom in 1475, and in 1593 Cromarty was re-erected as a royal or 'free' burgh, a privileged trading status which was not formally ratified by Parliament or the Convention of Royal Burghs until 1661. As hereditary sheriffs of Cromarty and occupants of Cromarty Castle since at least 1470, the Urquhart family had long been closely associated with the burgh but, when writing of it in 1653, Sir Thomas Urquhart (1611–*c*.1661) had no right to refer possessively to '<u>my</u> little

town of Cromarty'. It was not until 1670 that a successor, John Urquhart of Craigston, actually acquired the property of the burgh, Cromarty formally ranking as a burgh of barony from the 1680s onwards.

Although strictly inadmissible as an Urquhart claim in 1653, 'my little town' remains apposite as the book title, for from the latter half of the seventeenth century the fate of this little community has rested mainly, though not exclusively, in the hands of successive generations of local proprietors. A flourishing trade in salt herring contributed to a phase of prosperity during the era of Mackenzie ownership (1678–1741), while the acquisition of the estate and burgh in 1767 by the enterprising and successful merchant George Ross (1708/9–86) ushered in the most prosperous decades that Cromarty has ever witnessed. It is no coincidence that most of the significant buildings or groups of buildings that define and shape the physical character of present-day Cromarty belong to these two main periods – that is, 1690–1720 and 1770–1830. A relative decline thereafter meant that the imprint of Victorian times is much less dominant in Cromarty than it is elsewhere in the Scottish Highlands.

As one would expect of an author acutely conscious of the built environment, the historical narrative fully describes and explains the background to these building cycles. It also incorporates detailed descriptive accounts of many individual structures or groups of buildings in and around the town, from the 'big house' (Cromarty House, 1772–4) to the humblest fisher cottages. Buildings also form the subject of, or a conspicuous backdrop to, a significant proportion of the numerous illustrations in the book. Helpfully, there is even a very long and detailed entry in the index under 'buildings in Cromarty'. However, as a field guide to Cromarty that is as far as this study goes. It does not pretend to be other than essential armchair reading, preferably for before, during or after a visit to Cromarty. In this respect it forms a perfect complement to the material that is available from Cromarty Courthouse Museum and to the author's summary account in *Ross and Cromarty: A Historical Guide* (Birlinn, Edinburgh, 1999), pages 231–3.

Reviewed by Geoffrey Stell

Built to Meet Needs: Cultural Issues in Vernacular Architecture

Paul Oliver. Oxford. Architectural Press. 2006. xxviii + 445pp. £34.99. 0-7506-6657-9.

Also worthy of mention is *Built to Meet Needs*, a collection of conference papers given between 1978 and 2003 by Paul Oliver, Visiting Professor at the School of the Built Environment, Oxford Brookes University. In these papers, he examines the social and environmental issues pertaining to continuing traditions of vernacular architecture throughout the world. Before investigating these issues, he also poses the questions 'Why study vernacular architecture?' and, indeed, 'What is vernacular architecture?'. He suggests that it is a realistic and sustainable solution to the housing and building demands of the future. Among other issues considered is what is meant by 'home' and 'comfort', as Oliver outlines how different cultures perceive and attain these concepts. The importance of vernacular architecture and its study is explored through various examples, including Asante in Ghana; North American Shaker architecture; shanty towns (or spontaneous settlements), and the use of earth and clay in construction. Methods by which traditions are transmitted in different cultures are also considered. One chapter comprises a comparison between Anhui in south-east China and Herefordshire, revealing inevitable differences and surprising similarities. A fascinating section looks at the lessons learnt and ignored in rehousing populations following natural disasters, namely the earthquake in the Kütahya region of Turkey in 1970 and severe flooding in Rajput in India in 1988. These are situations where buildings are required quickly, cheaply and with a minimum of materials brought from a distance, and can present examples of a tradition developing in artificial conditions. He also looks at the development of open-air museums where vernacular buildings are preserved, and the history of the literature associated with the study of vernacular architecture.

In short, this is a wide-ranging volume which deals with many serious issues concerning the creation and preservation of vernacular architecture throughout the world.

Reviewed by Veronica Fraser

CONTRIBUTORS

Graeme Collie holds an MA in Archaeology from the University of Leicester. His Masters thesis examined possible reasons for the lack of horizontal mills in Orkney, and the impact of milling on the archaeological landscape of the Northern Isles. A member of SVBWG and a practitioner in the Institute of Field Archaeologists, he currently divides his time equally between working in the Republic of Congo and in Scotland doing freelance archaeological work.

David Connolly has worked in archaeology for more than 25 years. Over the past 15 years he has focused on buildings archaeology, utilising new techniques in recording and analysing historic structures from Stirling Castle and Queensberry House to blackhouses and vernacular town buildings. He spent four years as Assistant Archaeological Officer for East Lothian, and is now following three distinct paths in heritage media (websites, magazines and interpretation), community and outreach projects and commercial consultancy with clients such as the National Trust for Scotland.

Richard Craig has a postgraduate degree in Museum Studies from Leicester University and is a Historic Land Use Assessment Assistant at RCAHMS, where he has worked for over nine years. He is part of a small team who research Scottish land use and produce GIS maps which highlight areas of old land uses which are still visible in the landscape today. Prior to this Richard wrote captions for SCRAN and catalogued over 15,000 John Hume photographs onto the NMRS database.

Charles Hazard has been interested in the world of dry stone structures from both a professional and a historical perspective since placing his first stone in a dyke during a government training scheme in the early 1970s. He is a native Scot who is now resident in Finland where he works as a freelance 'kivimies' stone worker. With the aim of generating interest in dry stone, he is currently researching dry stone structures in the eastern Baltic region. He is a member of SVBWG, DSWA and the Stone Foundation.

Hilary Murray is co-director of Murray Archaeological Services Ltd. A field archaeologist with a special interest in excavated

timber buildings, she is actively involved in reconstruction and experimental archaeology.

John Sherriff is an archaeology project manager with RCAHMS, which he joined in 1986. His main research interests are fieldwalking and boundary stones. He is also a member of the Tayside and Fife Archaeological Committee (TAFAC) and is its treasurer and principal conference organiser.

Geoffrey Stell, Founder-Secretary and a former Chairman of SVBWG, was Head of Architecture at RCAHMS until his retirement in 2004. He is currently an Honorary Lecturer in the Department of History, University of Stirling, and a Visiting Lecturer in the Department of Architecture, Edinburgh College of Art.

Penelope Walker worked for the International Bee Research Association for many years, and is now Voluntary Curator of the IBRA Bee Boles Register. She has written on various topics related to beekeeping, and especially about structures used by traditional beekeepers.

Scottish Vernacular Buildings Working Group

The SVBWG was set up in 1972 to provide a focus for all those interested in Scotland's traditional buildings.

To some 'vernacular' may mean cottages, croft houses or farmsteads; to others its essence may be urban tenements or terraces, industrial watermills and smithies, or even older traditions of tower-house buildings. All – and more besides – find a place in SVBWG.

The group embraces those whose interests are centred on general settlements or social patterns as well as those who have a specialist interest in building techniques or function, or in traditional building crafts. The subject brings together architects, surveyors, archaeologists, historians, geographers, ethnologists and, above all, those who simply want to know how and why the traditional buildings of Scotland have come to possess such variety and character.

This refreshing blend of interests and attitudes is clearly evident in the Group's activities. Members are invited to attend annual Conferences held at different venues, mainly in Scotland, in the spring of each year. The Group's publications include *Vernacular Building*, an annual miscellany of articles issued free to members, and a series of Regional and Thematic works.

For contributions to VB32 please contact the Editor, *Vernacular Building*, c/o Veronica Fraser, RCAHMS, John Sinclair House, 16 Bernard Terrace, Edinburgh EH8 9NX. A preliminary letter or enquiry indicating the size and nature of the proposed piece would be helpful; we ask that original photographs or drawings are not sent in the first instance, although photocopies of these are useful at this early stage. Please note that some photographs taken by digital cameras are not of sufficiently high resolution to be used in VB: as a guide, digital images should measure a minimum of approximately 1200 pixels across in order to be of publishable quality. Any text submitted should be as far as possible in the style of this volume. It should be typed on one side of the paper only, and accompanied by a digital copy on CD or by email. Please save text and images as separate files, indicating the suggested position of images by way of notes in the text, rather than embedding images within documents.

We also welcome publications for review. These should be sent to Veronica Fraser, Reviews Editor, SVBWG, c/o RCAHMS (as above).

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Individual membership	£15
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