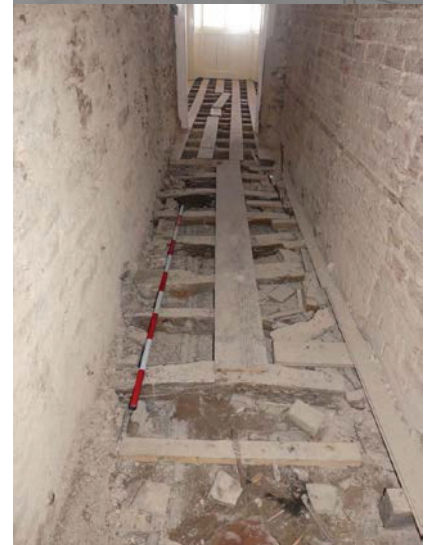
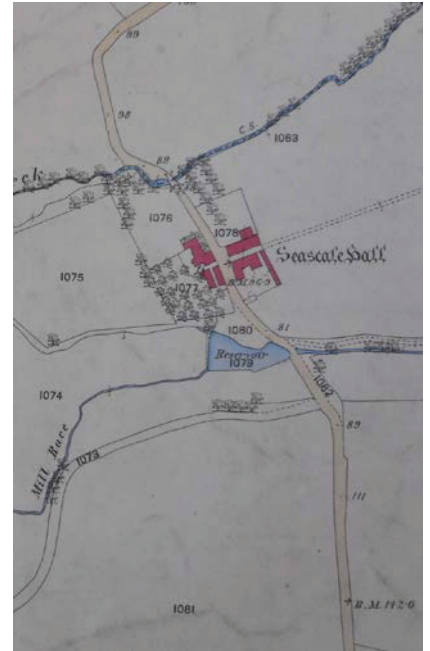


SEASCALE HALL FARM, SEASCALE, CUMBRIA

Archaeological Building Recording



Client: NDA Properties Ltd

Planning Application Ref.:
4/18/2207/LB

NGR. 303889 502865

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July 2021



The Site	
Site Name	Seascale Hall Farm, Seacale
County	Cumbria
NGR	303889 502865
Listing Status, Level, and number	Listed Grade II, No. 1336064
Brief description of building/buildings to be recorded	Focussing on ground floor of house, specifically where areas of flooring and reused timbers have been exposed during repairs, also to include dendrochronological sampling of these timbers

Client	
Client Name	NDA Properties Ltd
Client's architect/agent	Avison Young
'As existing' drawings available?	Yes

Planning	
Pre-planning?	No
Planning Application No.	4/18/2207/LB
Plans (e.g. conversion, extension, demolition)	Renovation work to interior
Local Planning Authority	Copeland Borough Council
Conservation Officer	Samuel Woodford
Level of Building Recording required	Historic England Level 3

Archiving	
Relevant Record Office(s)/Archive Centre(s)	Whitehaven
Relevant HER	Cumbria

Staffing	
Desk-based assessment	Dan Elsworth
Building recording	Dan Elsworth Tom Mace
Report writing	Dan Elsworth
Report editing	Jo Dawson
Illustrations	Tom Mace
Date on site work carried out	29 th June 2021

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Non-Technical Summary

As part of a programme of repair at Seascale Hall (which is Grade II Listed), Seascale, Cumbria, the Conservation Officer for Copeland Borough Council requested an archaeological building recording, including dendrochronological dating, be carried out. This was specifically intended to examine reused timbers revealed during the lifting of floorboards on the ground floor, but a wider investigation of the rest of the building was also undertaken in order to put any information collected into context. Greenlane Archaeology was commissioned to carry out an archaeological recording and arrange the dendrochronological dating of the building, and the work on site was carried out on the 29th June 2021.

Seascale Hall is located in a landscape with evidence for human activity from the prehistoric period onwards. The site of Seascale Hall was probably occupied from at least the medieval period, although the name indicates a seasonal shelter existed in the Norse period. It became the principal seat of the manor of Newton and Seascale, which was acquired by the Senhouse family in the late medieval period. The earliest reference specifically to Seascale Hall is only from 1501, but the current building probably has elements dating from the late 16th and early 17th century on the basis of datestones of 1579 and 1606 located on the building. It was acquired by Robert Blacklock, a merchant from Whitehaven, in 1707, and then passed through various hands before returning to the Senhouse family for a while. The building has apparently never previously been investigated in any detail.

The building recording revealed that the earliest arrangement of the structure probably comprised a multi-storey porch house, with the front access to the south-west, dating to the late 16th or early 17th century and forming the mansion house known to have been built by the Senhouse family. This was then substantially modified in the early 18th century, undoubtedly following Robert Blacklock's acquisition of the site in 1707. This comprised the construction of new symmetrical façades on the north-east and north-west sides and a range of decorative elements. A beam from what would have been one of the new reception rooms was dated by dendrochronology as having been felled in 1708 and this, plus the datestone of 1710, indicates that Blacklock began work shortly after he acquired the site and this was probably completed by 1710. A range of other improvements were carried out during the late 18th to 19th century, during which time the building was rented out and used as a farmhouse. These included replacing most of the floors, and on the ground floor this involved the reuse of a variety of timbers, which were dendrochronologically dated to the late 17th century. More recent alterations are mostly cosmetic, but included covering the exterior in rough cast render and the demolition of elements that originally extended to the south-east.

Despite the numerous alterations, Seascale Hall remains an important local building, which amply demonstrates the manner in which it changed from a manorial seat to a fashionable gentleman's residence of early Georgian style. This did not last however, and what now remains is a consolidated version of what was evidently at one time a more substantial building with associated buildings to the south-east. It is recommended that the reused timbers be subject to more detailed examination once they have been removed from the building as they were difficult to record in their current location.

Acknowledgements

Greenlane Archaeology would like to thank NDA Properties Ltd for commissioning the project and their agent, Olivia Harker at Avison Young, for information about the site and additional photographs. Special thanks are also due to Samuel Woodford, the Conservation Officer at Copeland Borough Council, for his useful discussion about the property. Thanks are also due to the staff at Stobbarts for their help on site and to Robert Howard at the Nottingham Tree-Ring Dating Laboratory for taking samples from site and providing the dendrochronological analysis.

1. Introduction

1.1 Circumstances of the Project

1.1.1 The circumstances of the project are set out in the tables on the inside cover of this report.

1.2 Location, Geology, and Topography

1.2.1 Seascale Hall Farm is approximately 1.4km north of the centre of the village of Seascale on the Irish Sea coast of Cumbria and at approximately 30m above sea level (Ordnance Survey 2011; Figure 1). It is c400m from the south end of the Sellafield nuclear fuel reprocessing and nuclear decommissioning site.

1.2.2 Seascale is within the West Cumbria Coastal Plain, which is characterised by varied open coastline of mudflats, shingle and pebble beaches, lowland river valleys, and gently undulating or flat improved pasture with hedgerows, however, the immediate area is dominated by the former power plant and nuclear reprocessing facilities at Sellafield (Countryside Commission 1998, 25). The solid geology comprises mudstone (Moseley 1978, plate 1), which is overlain by glacially-derived boulder clay with, in places, sand and gravel (Countryside Commission 1998, 27).

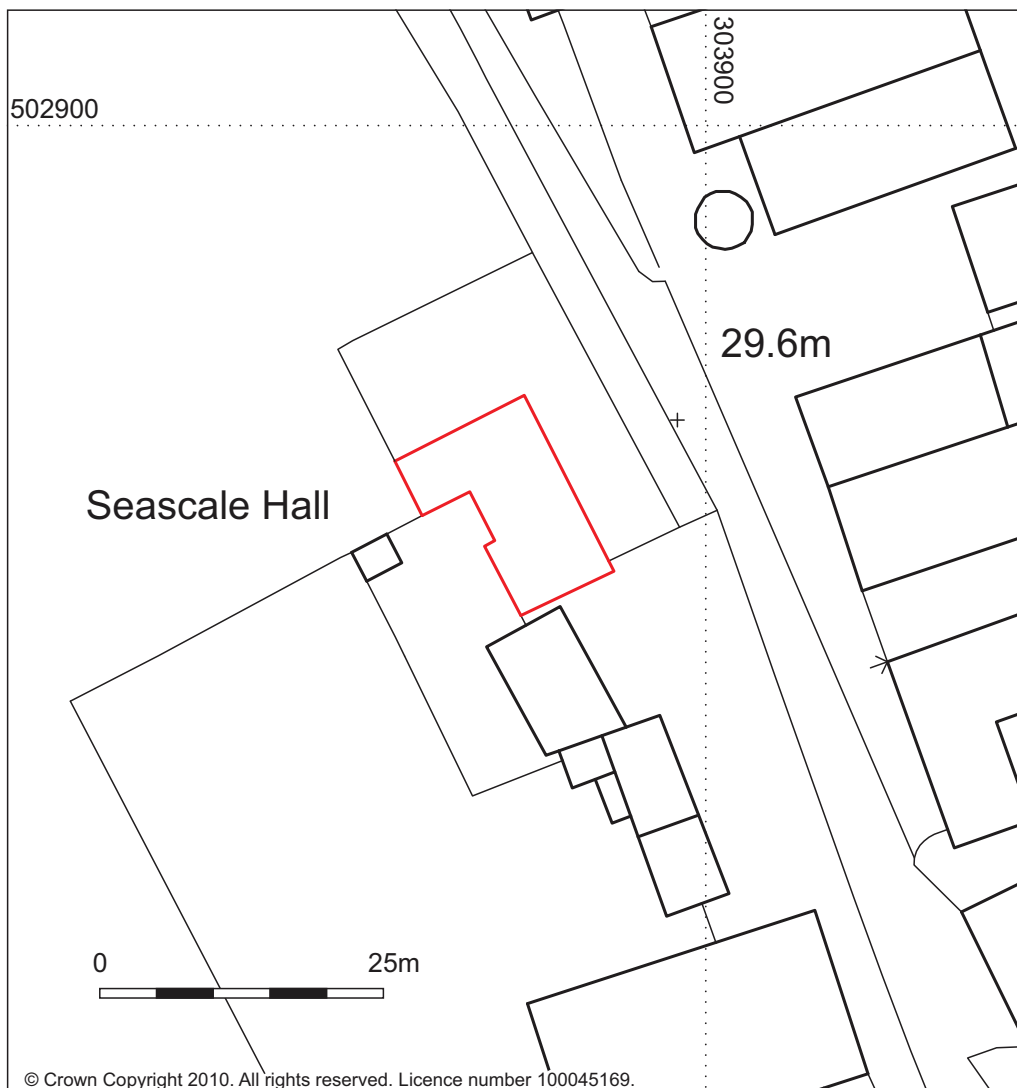
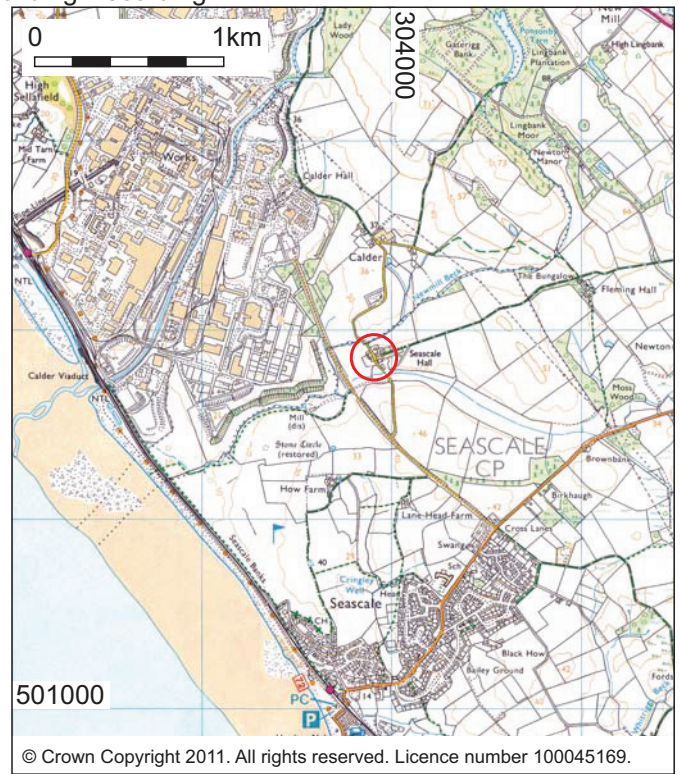
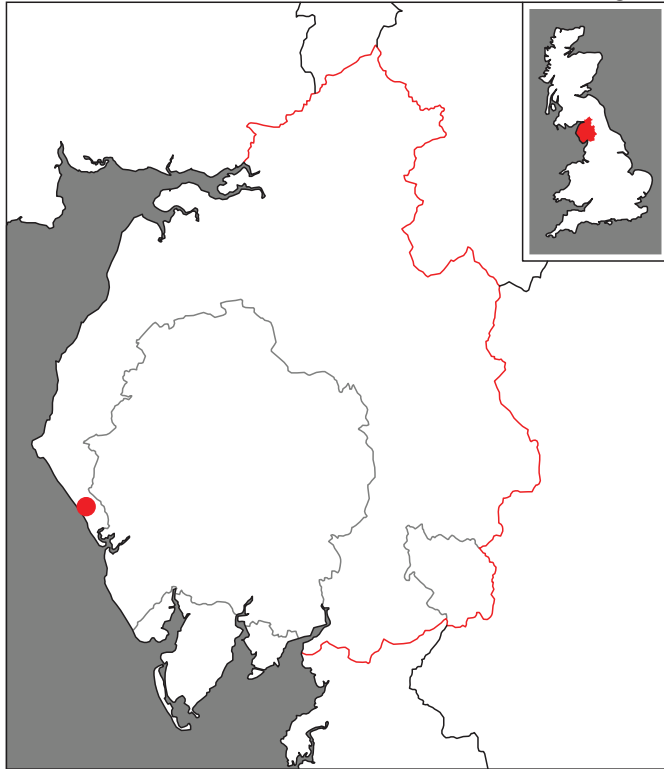


Figure 1: Site location

2. Methodology

2.1 Introduction

2.1.1 The archaeological building recording is intended to provide a suitable record of the structure equivalent to Level 3 survey as defined by Historic England (Historic England 2016). The building recording was carried out according to the guidelines of the Chartered Institute for Archaeologists (CIfA 2014a; 2014b). A suitable archive has also been compiled to provide a permanent paper record of the project and its results, also in accordance with CIfA guidelines (CIfA 2014c).

2.2 Desk-Based Assessment

2.2.1 A desk-based assessment was carried out in accordance with the guidelines of the Chartered Institute for Archaeologists (CIfA 2014b). This principally comprised an examination of early maps of the site and published secondary sources. A number of sources of information were used during the compilation of the desk-based assessment:

- **Record Office/Archive Centre:** the majority of original and secondary sources relating to the site are deposited in the relevant Record Office(s) or Archive Centre(s), as specified in the cover sheet of this report. Of principal importance are early maps of the site. These were examined in order to establish the development of the site, date of any structures present within it, and details of land use, in order to set the site in its historical, archaeological, and regional context. In addition, any details of the site's owners and occupiers were acquired where available;
- **Online Resources:** where available, mapping such as Ordnance Survey maps and tithe maps were consulted online;
- **Greenlane Archaeology:** Greenlane Archaeology's office library includes maps, local histories, and unpublished primary and secondary sources. These were consulted where relevant, in order to provide information about the history and archaeology of the site and the general area.

2.3 Building Recording

2.3.1 The building recording was carried out to Historic England Level 3 type standards (Historic England 2016), which provides a relatively detailed record of the building. The recording comprised the following elements:

- **Written record:** descriptive records of all parts of the building were made using Greenlane Archaeology *pro forma* record sheets;
- **Photographs:** photographs in colour digital format (as both 12meg jpegs and RAW files) were taken of the main features of the building, its general surroundings, and any features of architectural or archaeological interest. A selection of the colour digital photographs is included in this report, and the remaining photographs are in the project archive;
- **Drawings:** 'as existing' architect's drawings were provided by the client. These were plotted at a scale of 1:100 and annotated by hand with additional detail.

2.3.2 In addition to the building recording timbers were sampled for dendrochronological dating. This primarily focussed on the reused timbers exposed below the floors of Rooms G4 and G7 but other suitable timber were also sampled from elsewhere in the building. The methodology for this is included in the dendrochronological analysis report (*Appendix 2*).

2.4 Archive

2.4.1 The archive, comprising the drawn, written, and photographic record of the building, will be deposited with the relevant Record Office or Archive Centre, as detailed on the cover sheet of this report, together with a copy of the report. The archive has been compiled according to the standards and guidelines of the CIfA guidelines (CIfA 2014c). In addition, details will be submitted to the Online Access to the Index of archaeological investigationS (OASIS) scheme. This is an internet-based project intended

to improve the flow of information between contractors, local authority heritage managers and the general public. A paper copy of the report will be provided to the client and a digital copy of the report will be provided for the relevant Historic Environment Record, as detailed on the cover sheet of this report.

3. Desk-Based Assessment

3.1 Map Regression and Image Regression

3.1.1 **Introduction:** early, typically county-wide, maps that include the area, tend not to be detailed enough to usefully show the site. The area is not included on the enclosure map (CAC(W) YSPC 12/41 1810; CAC(C) Q/RE/1/42 1815) and there is no tithe map for Gosforth parish. The earliest useful plans therefore only date from the mid-19th century onwards but there is a limited number available and these only cover the 19th century.

3.1.2 **Ordnance Survey, 1867:** this edition of the Ordnance Survey map, at a scale of 1:10,560, was surveyed in 1860 and clearly marks Seascale Hall (Plate 1). The current farmhouse forms the northernmost L-shaped part of the block to the west side of the unnamed road between Seascale and Calder Bridge.



Plate 1: Extract from the Ordnance Survey map of 1867

3.1.3 **Ordnance Survey, 1882:** this is the first edition 1:2,500 scale Ordnance Survey map and shows much the same information as the 1867 edition, albeit in slightly more detail due to the differences in scale at which the editions were produced (Plate 2; cf. Plate 1). A slight return is marked towards the centre of the west elevation of the farmhouse.

3.1.4 **Ordnance Survey, 1899:** this map shows the same information as the 1882 edition (Plate 3; cf. Plate 2).

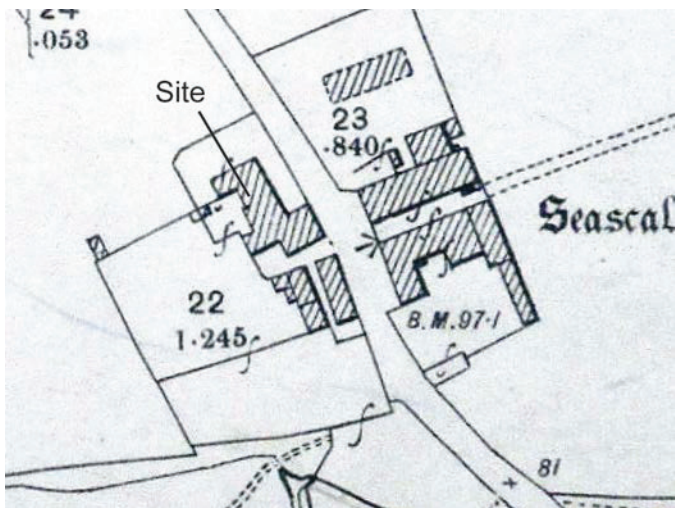
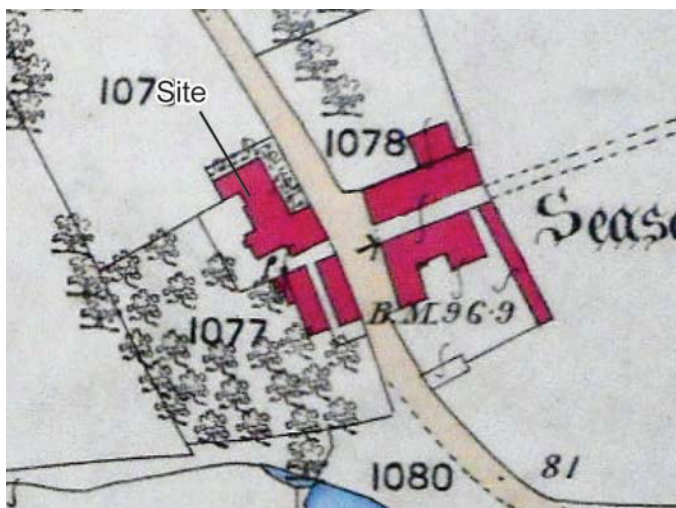


Plate 2 (left): Extract from the Ordnance Survey map of 1882

Plate 3 (right): Extract from the Ordnance Survey map of 1899

3.1.5 **Photographs, 1944:** a collection of photographs of the building taken in 1944 (although one is not dated) show the building had remained largely unchanged by that date compared to the earlier maps. They also show the datestone of 1606, which was clearly located at the north-east end of the south-east elevation of the north-west wing.



Plate 4 (left): View of the front elevation of Seascale Hall in 1944 (after Historic England 2021b)

Plate 5 (right): View of the rear elevation of Seascale Hall in 1944 (after Historic England 2021b)



Plate 6 (left): The datestone of 1606 in 1944 (after Historic England 2021b)



Plate 7 (right): General view of Seascale Hall from the south-east, mid-20th century (after Historic England 2021b)

3.1.6 **Ordnance Survey, 1956:** the arrangement of buildings at Seascale Hall appears unchanged on the 1956 edition of the Ordnance Survey, surveyed at 1:10,560, which was revised for major changes only in 1951 (Plate 8; cf. Plate 3).

3.1.7 **Ordnance Survey, 1965:** the 1956 edition was reprinted in 1965 with the addition of the major industrial development at Sellafield, but no changes are indicated at Seascale Hall (Plate 9).



Plate 8 (left): Extract from the Ordnance Survey map of 1956



Plate 9 (right): Extract from the Ordnance Survey map of 1965

3.1.8 **Summary:** it is evident from cartographic sources that the current building once formed part of a larger block of buildings. Maps show that the existing L-shaped building was certainly constructed before 1860 and its current footprint was arrived at after the demolition of the south end of the block, which occurred after 1965.

3.2 Site History

3.2.1 **Early history:** while there is some limited evidence for activity in the county in the period immediately following the last Ice Age, this is typically found in the southernmost part on the north side of Morecambe Bay (Young 2002). The county has evidence for more dense occupation continuing into the Mesolithic (c8,000 – 4,000 BC), as large numbers of artefacts of this date have been discovered during field-walking and eroding from sand dunes along the coast (Elsworth 1998). Coastal areas are widely regarded as typical places to find such remains (Cherry and Cherry 2002), most probably because of the mixed form of economy practiced at the time (Hodgson and Brennand 2006). During the following

periods, the Neolithic and then the Bronze Age, settlements and large scale funerary and ceremonial structures appear, and while there are examples of these in the locality these periods are more typically represented by stray finds such as axes (Barrowclough 2010). The closest example to the site is the stone circle known as Grey Croft. The Iron Age is less visible in the region as a whole, although there are several examples of hillforts found around Morecambe Bay, which are often considered to be one of the type-sites of the period (Elsworth 2014). The Roman invasion is likely to have had a relatively minimal impact on the native population, especially in the rural areas away from Roman military sites (Philpott 2006, 73-74). Early medieval activity is also rarely demonstrated archaeologically in the area, although place-name evidence suggests that the population was quite mixed with British, Anglian, and Norse elements occurring in many of the local names for example Seascale, which is Norse and refers to a sheiling located near the sea (Armstrong *et al* 1950, 433), while the name of the parish, Gosforth, derives from the Old English meaning 'goose ford' (*op cit*, 394). The site is located in the parish of Gosforth, and formed part of the manor of Newton and Seascale, which was held by the Senhouse family of Seascale Hall from c1270 until c1707 (Winchester 2016, 143), when it was purchased by a Mr Blaylock, a merchant from Whitehaven (Hutchinson 1794, 584) before they acquired it again in 1800 only for it to be acquired by Anthony Benn Steward of Newton Manor following the death of Sir Humphrey le Fleming Senhouse in 1841 (Winchester 2016, 143).

3.2.2 The early industrial development of the region was stimulated by the mining of coal and iron ore and the iron and steelmaking industries (Countryside Commission 1998, 29). This development was facilitated by the construction of the railways in the 18th and 19th centuries, but industrial decline and the depletion of the coal resource caused the once thriving villages of the area to decline (*ibid*). More recently the region has become a hub of chemical industry, power generation and nuclear reprocessing; the nuclear power station at Calder Hall was constructed in the early 1950s, and the plant at Windscale, later renamed Sellafield, was established in subsequent decades and visually dominates the landscape of the coast (Countryside Commission 1998, 25, 29).

3.2.3 **Seascale Hall Farm:** remarkably, Seascale Hall, as it was originally known, has not previously been studied in any great detail. It was the seat of the manor of Newton and Seascale, which belonged to the Senhouse family, who were linked to the area from at least the late 13th century (see *Section 3.2.1* above). The first named member of the family, Walter de Sewyhou, was granted land in the ville of Bolton (in Cumberland) by Alan de Coupland sometime in the early 13th century and this apparently included nearby Hall Senna, which is thought to have been the original home of the Senhouse family (Senhouse 1893, 247-248). It is not clear when they came to Seascale Hall, especially as there is a family of de Seascale recorded in the 12th century, but it seems likely to have been in the 14th or 15th century (*op cit*, 251-254). The earliest reference to the site by that name appears to be from 1501 in a suit between Thomas Senhouse and William Stanelay of Dalegarth (CAC(C) DSEN/2/1 1259-1597). The earliest datestone on the building, which is still extant, is for 1579, so a building presumably existed at that time, but it cannot be associated with any individual. However, another datestone of 1606, with the initials J and M S and decorated with the Senhouse and Ponsonby arms is also recorded at the property 'formerly over a door' (Senhouse 1893, 252). This apparently relates to John Senhouse and his wife Mary (nee Fleming), and shows a definite connection to the Senhouse family (the Listed Building details, *Appendix 1*, state that this was in the rear elevation, presumably beneath the spiral decorated stone still present; see *Section 4.2.3* below). John Denton, in 1617, referred to 'Seaskall Hall' as '*the mansion house of John Sennos*' [*sic*] (Ferguson 1887, 21).

3.2.4 The Senhouse family remained connected to the area and Seascale Hall until the end of the 17th century, although their heirs had gradually moved to other areas through marriage, until John Senhouse, who was born at Pleasington in Lancashire, mortgaged his estates and this was bought by Robert Blacklock, a merchant from Whitehaven, who fully acquired the estate in 1707 (Senhouse 1893, 258). Robert Blacklock is presumably one half of the initials R & E B inscribed with the datestone of 1710 (see *Appendix 1*). Blacklock and his descendants did not hold Seascale Hall for long; it passed through marriage to an Augustus Earle Esq (Jefferson 1842, 299; Mossop c1909, 12) the descendants of whom sold it to a Charles Lutwidge of Whitehaven Esq (*ibid*, Senhouse 260; Mossop c1909, 12). He subsequently sold it to Samson Senhouse, the nephew of Humphrey Senhouse of Netherhall, both descendants of John Senhouse (*op cit*, 260). It remained again with the Senhouse family for some time,

Samson Senhouse selling it to his mother, from whom it passed to Sir Humphrey le Fleming Senhouse (*op cit*, 260). After his death it was purchased by Anthony Benn Steward, who acquired the manor of Newton and Seascale in 1841 (although Mossop says 1853 (*c*1909, 12)) and built himself a new house named Newton Manor (Greenlane Archaeology 2017).

3.2.5 Occupiers: it is clear from the history of the site outlined above that the owners of the property were primarily the Senhouse family for much of its history, or whoever owned the manor, and it is likely that they lived there too, although perhaps not all year round. Ramshaw states that it served as the demesne or home farm for their estates and that from the early 18th century the lords of the manor rented it out to tenant farmers, although no sources for this are given (Ramshaw 1998, 132). It is certainly the case that in 1812 Elizabeth Ward Senhouse, the lady of the manor at that time, leased the hall, Seascale Mill, and lands to a James Fox (CAC(W) DBT/26/18/5 1638-1898) and a similar letting agreement of 1825 is also recorded (Ramshaw 1998, 133; he also refers (*op cit*, 16) to a statement in 1827 that Fox was the owner of the building, but this must be a mistake). It is recorded that it had become essentially a farmhouse by the middle of the 19th century (Jefferson 1842, 299; also Mossop *c*1909, 12), and was certainly tenanted from that date onwards. Ramshaw gives an extensive list of occupiers, beginning in 1730 (Ramshaw 1998, 132), but again no sources are given, although it is evident that he has referenced directories and the census for the 19th century records (Table 1). Of these, Richard and Mary Waltons, who held it in the 1730s, apparently also ran a carriers business (Ramshaw 1998,133).

Date	Name	Additional source
1730	John Benson	-
1731-1737	Richard and Mary Walton	-
17??-1755	Richard and Isobel Walton	-
1755-1758	James and Ann Walton	-
1754, 1770	Richard and Mary Walton	
1776, 1781, 1799, 1823	Martin and Betty Ashburner	
1827, 1829	James Fox	CAC(W) DBT/26/18/5 1638-1898; Parson and White 1829, 211
1841	John and Hannah Gunson	
1847, 1851, 1858,1861	Gabriel and Mary Threlfell	Mannix and Whellan 1847, 333; Kelly and Co 1858, 164; Morris, Harrison and Co 1861, 242
1871	Richard and Jane Threlfell	
1875-1885	Henry Walker	Slater 1879, 98; Bulmer 1883, 133
1885	Mr Rogers	Ramshaw 1998, 28
1891, 1901	John and Mary Sherwen	Kelly & Co Ltd 1894, 151
1902-1909	William and Ruth Cottam	
1910, 1913	Ruth Cottam and Sons	
1921, 1934, 1938	Rueben and Ann Cottam	
1938, 1946	William and Mabel Lamb	
196?-198?	Albert and Frances Fawcett	
1997	John and Kathleen Fawcett	

Table 1: Recorded occupiers of Seascale Hall Farm, 1730-1997 (after Ramshaw 1998, 132)

3.2.6 With the exception of the maps there is little information providing direct evidence about the form that the building took and apparently no early illustrations or photographs of it. John Denton referred to it as a 'mansion house' in 1617 (Ferguson 1887, 21), which suggests it was of some size at that time and the datestones of 1579 and 1606 give some indication of periods at which building work is likely to have taken place. A storm of 1883 is said to have caused some damage, removing part of the roof from a barn at the hall but the house is not specifically mentioned (Ramshaw 1998, 25) and a guide to Seascale describes it as containing '*a fine old fire-place*' (Mossop *c*1909, 12). The building as it now stands, with its substantial symmetrical facades, is thought to date to *c*1700 (Hyde and Pevsner 2010, 609), and this probably corresponds to the, now missing, datestone of 1710.

4. Building Recording

4.1 Arrangement and Fabric

4.1.1 **Fabric:** externally the building is entirely finished with roughcast, with details around the windows and doors finished in painted dressed stone. The roof is grey slate with sandstone ridge tiles and there are chimneys at the north-west and south-west ends, as well as the end of the wing projecting to the south-west. Internally the timber is a mixture of sawn and hand-finished types, with numerous reused pieces. The plaster had largely been removed revealing that the main walls were constructed from red sandstone although dividing walls were either brick, typically relatively early hand-made types, or timber stud finished with lath and plaster. The ceilings were also typically lath and plaster, where they survived.

4.1.2 **Arrangement:** the building comprises a single block the main part essentially square in plan, with the front facing to the north-east, but with a wing extending this to the north-west set at 90° and so with its gable-end facing the front. The whole block is two stories high, although the main part of the rear (south-east) side is of continuous outshut form and so lower than the front. The building is orientated essentially north-west/south east, the front (north-east) and north-west elevations forming symmetrical façades with rows of matching windows on both floors. The south-east end is a plain gable, while the rear (south-west) is more irregular.

4.2 External Detail

4.2.1 **North-east external elevation:** this comprises a symmetrical façade on the south-east side and centre, with four windows on the ground floor and five on the first, all of which have stone mullion and transome windows with hood moulds (Plate 10). There is a doorway on the ground floor in line with the window above with bolection moulded surround, entablature above with a pulvinated frieze, and a stone mullion overlight. On the south-east side, between ground and first floor level is a projecting stone inscribed '1579' in relief, with a worn hood mould above (Plate 11). The elevation is extended by a small monopitch outshut on the south-east side.



Plate 10 (left): General view of the north-east external elevation, viewed from the north-east

Plate 11 (right): The datestone of 1579 on the south-east side of the north-east external elevation, viewed from the north-east

4.2.2 **South-east external elevation:** this forms a plain gable with a projecting chimney extending across the first floor, stepped on the north-east side (Plate 12). There is a single window on the north-east side with a UPVC single-light casement. A small monopitch outshut forming a porch is attached on the ground floor, and has a doorway in the north-east face and window to the south-east, both with UPVC casements.



Plate 12: A general view of the south-east external elevation, viewed from the south-east

4.2.3 South-west external elevation: this is lower than the front elevation and has two windows at first floor level, sharing a neatly dressed sill, and one at ground floor level, all of which have four-light hinged timber casements. In the centre is a projecting stair tower with a massive central stair window with an eight-light fixed timber casement and hood mould and a gabled roof above (Plate 13). A stone is set into the wall below the roof line decorated with a pair of spiral motifs (Plate 14). To the north-west of the stair tower is a similar arrangement of windows to the south-east, although all slightly smaller. The north-west end projects from the rest, after a return with a single doorway at ground floor level, and forms a plain gable (Plate 15). It was not clear during the building recording if the datestone of 1606 is still present on the north-east side of this return as the area was obstructed by scaffolding.



Plate 13 (left): General view of the south-west external elevation, viewed from the south-west

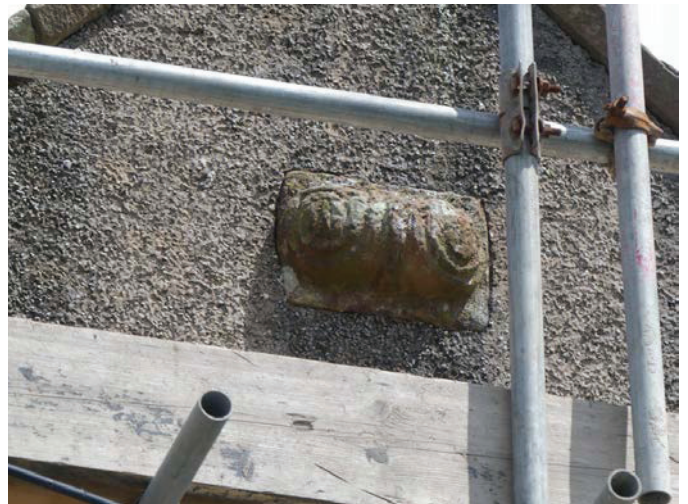


Plate 14 (right): The decorated stone in the south-west external elevation, viewed from the south-west



Plate 15 (left): The gable at the north-west end of the south-west external elevation, viewed from the south-west

Plate 16 (right): The north-west external elevation, viewed from the north-west

4.2.4 **North-west external elevation:** this has a symmetrical row of four windows per floor, in the same style as those to the north-east and chimneys at either end (Plate 16).

4.3 Internal Detail

4.3.1 **Ground floor Room 1:** this has narrow tongue and groove board floor, although a section is missing where dividing wall evidently used to be along the north-west side and this is filled with brick. The ceiling is lath and plaster and supported by two hand-finished beams orientated north-east/south-west. The walls have all had their plaster removed exposing the stone and brick construction. The north-east elevation has a doorway on the north-west side with a mullion overlight of two lights with fixed timber inserts each of two lights (Plate 17). The door is of heavy plank construction on long strap hinges and there are reused timber lintels. To the south-east there are two windows each of mullion and transom form with two and four light hinged timber casements and hand-finished (Plate 17). The door and windows share a single lintel made from reused timber and containing various empty slots. The south-east elevation has a window on the north-east side with a UPVC single-light hinged casement in what was apparently originally a doorway as it is infilled with masonry below the window and there are quoins in the south-west jamb (Plate 18). It has a thin timber sill. To the south-west there is a projecting chimney breast, faced with brick but of stone construction and evidently some infilling of an original wider opening leaving a single narrow hearth and the remains of dressed stone surrounds (Plate 19). To the south-west there is attached panelling (Plate 20) with bevel raised and fielded panels forming a cupboard against the chimney breast (Plate 21 and Plate 22) and around a doorway at the south-west end. There is also a modern stud wall projecting to the north-west. The doorway on the south-west side is relatively plain and down two steps.



Plate 17 (left): General view of the north-east elevation, Room G1, viewed from the south-west

Plate 18 (right): Window on the north-east side of the south-east elevation, Room G1, viewed from the north-west



Plate 19 (left): Chimney breast and fireplace in the south-east elevation, Room G1, viewed from the north

Plate 20 (right): Panelling and doorway on the south-west side of the south-east elevation, Room G1, viewed from the north



Plate 21 (left): Cupboard in panelling on the south-east side of Room G1, viewed from the south-west

Plate 22 (right): Cupboard in panelling on the south-east side of Room G1, viewed from the south-west

4.3.2 The south-west elevation has a doorway on the south-east side with quoins in the north-west jamb and the south-east rebuilt in brick (Plate 23). To the north-west is another doorway, blocked with concrete blocks and with a thin timber lintel. The wall returns at the north-west end to the south-east and into the staircase. Here there is another doorway, mostly blocked with bricks, and with a reused lintel with stop-chamfer decoration (Plate 24). The south-west jamb is quoined. The elevation is otherwise open where it meets the stairs. The north-west elevation is open on the south-west side forming access into Room G6, with a reused timber lintel, the associated wall butts that to the north-east, and there is another opening extending to the ceiling to the north-east of this (Plate 25). The rest of the wall is plain, timber stud construction with brick infill; some of the timbers are apparently reused from an earlier post and rail stud wall. In the centre this construction incorporates a blocked doorway (Plate 25).



Plate 23 (left): The south-west elevation of Room G1, viewed from the north-east

Plate 24 (right): The blocked doorway in the return of the south-west elevation of Room G1, viewed from the north-west



Plate 25: The north-west elevation of Room G1, viewed from the south-east

4.3.3 **Ground floor Room 2:** this comprises the interior of a small porch and has a concrete floor and flat plaster ceiling. The walls are concrete block, exposed where the plaster has been removed. There is a UPVC door to the north-east and a two-light hinged UPVC window to the south-east (Plate 26). A doorway to the north-west is original but the jambs have been heavily modified; it retains an original rough and reused timber lintel and plain timber surround.



Plate 26: General view of Room G2, from the north-west

4.3.4 **Ground floor Room 3:** the floor had largely been removed at the time of the building recording, but was evidently concrete over a layer of loose gravel. The ceiling is flat lath and plaster with one sawn(?) beam finished with limewash running north-east/south-west. The north-east elevation has a patch of brickwork near the centre corresponding with the blocked opening in the opposite side but not forming straight edges, suggesting this was perhaps a cupboard rather than a doorway (Plate 27). To the south-east there is a doorway with a plain timber surround. The south-east elevation has a doorway on the south-west side extending above the level of the ceiling and blocked with very wide brick set on edge (Plate 28). The south-west elevation has a small blocked aperture on the south-east side and evidence for rebuilding around the window and extending to the north-west. The window has splayed jambs with quoins and four-light timber casements and rough reused timber lintels (Plate 29). The north-west elevation has a doorway on the north-east side blocked with brick but leaving a shallow alcove (Plate 30). It has a machine sawn timber lintel.



Plate 27 (left): The north-east elevation, Room G3, viewed from the south-west

Plate 28 (right): The south-east elevation, Room G3, viewed from the north-east



Plate 29 (left): The south-west elevation, Room G3, viewed from the north-east

Plate 30 (right): The north-west elevation, Room G3, viewed from the south-east

4.3.5 Ground floor Room 4: this comprises a corridor running north-west/south-east linking to the stairs to the first floor at its south-east end. The stairs are fairly plain timber, with a modern timber handrail on the north-west side continuing to barley twist balusters at landing level (Plate 31). The corridor has a flat plaster ceiling with two box beams running north-east/south-west, which continue into Room G5. The floorboards have been removed but were evidently laid on 11 rough joists comprising hand-finished re-used timbers, some very curved (Plate 32; Figure 4). Five of these timbers were sampled for dendrochronological dating and the results of this is summarised in Table 2 below (also see Appendix 2):

Timber number	Sampled for dendrochronological dating?	Date (if obtained)
G4/1	No	-
G4/2	Yes	-
G4/3	No	-
G4/4	No	-
G4/5	No	-
G4/6	Yes	1634-1659
G4/7	No	-
G4/8	Yes	-
G4/9	Yes	-
G4/10	Yes	-
G4/11	No	-
G4 (loose timber)	Yes	1684-1694

Table 2: Re-used timbers sampled for dendrochronological dating in Room G4

4.3.6 The south-east end has had some modern timber added. The north-east elevation of the corridor is exposed brick infilling a timber frame and with a blocked doorway in the centre (Plate 33). There is a further doorway at the south-east end with a moulded surround (Plate 34). The south-east elevation is open to Room G1, while the south-west is stone and largely plain apart from a blocked window on the north-west side with a rough and reused timber lintel (Plate 35). There is also an opening high up to the north-west of this leading into the landing of the staircase, which has been infilled with lathe and plaster. The north-west elevation has a doorway with a simple beaded surround and timber lintel. The masonry on the north-east side is apparently butted by the brick north-east elevation.



Plate 31 (left): The stairs in Room G4, viewed from the north-east



Plate 32 (right): The floor of the corridor in Room G4, viewed from the south-east



Plate 33 (left): The north-east elevation in Room G4, viewed from the south



Plate 34 (right): The moulded door surround in the north-east elevation of Room G4, viewed from the south



Plate 35: The blocked window in the south-west elevation of Room G4, viewed from the east

4.3.7 **Ground floor Room 5:** the floor is narrow tongue and groove boards laid on machine cut joists and the ceiling is flat plaster with two boxed means running north-east/south-west (Plate 36). The north-east elevation has two windows with moulded surrounds, splayed jambs, and stone mullion and transom casements with two and four-light casements inserted (Plate 37). It also has a hand-finished and reused timber lintel. The south-east elevation is brick infilling a timber frame, with a blocked doorway in the centre (Plate 38). The south-west elevation is also brick infilling timber, with a doorway on the south-east side with a moulded surround and a blocked doorway near the centre (Plate 39). The north-west elevation has a projecting chimney breast with a modern brick addition housing a woodburning stove (Plate 40). There is a possible joint line on the north-east side.



Plate 36 (left): The ceiling in Room G5, viewed from the south



Plate 37 (right): The north-east elevation in Room G5, viewed from the south



Plate 38 (left): The south-east elevation in Room G5, viewed from the north-west

Plate 39 (right): The south-west elevation in Room G5, viewed from the north-east



Plate 40: The north-west elevation in Room G5, viewed from the south-east

4.3.8 **Ground floor Room 6:** this comprises two rooms, G6a, which is located beneath the stairs (Room G4) and a second room to the north-west (Room G6b), which was originally split into two smaller rooms. Room G6a has a red sandstone flag floor (Plate 41) and plaster ceiling; the underside of the stairs reveals them to be stone beneath the timber visible in Room G4, and there are exposed joists and floorboards on the south-west side. The walls are mostly exposed stone having had their plaster removed and are plain. The north-east elevation has a doorway in a plain surround below a timber stud and lath and plaster infill (Plate 42). The south-west elevation has a small aperture below the ceiling, probably just a vent.



Plate 41 (left): Sandstone flag floor in Room G6a, viewed from the north-east

Plate 42 (right): Doorway in the north-east elevation of Room G6a, viewed from the south-west

4.3.9 Room G6b has a board floor of wide, probably tongue and groove boards. The ceiling is just the joists and remaining tongue and groove floorboards of the room above, all of which are sawn and some of the joists have Baltic timber marks (Plate 43). The walls are all exposed stone; the north-east has a projecting stone 'lintel' on the north-west side, perhaps the remnants of a staircase, and a small cupboard with a beaded plank door, moulded surround and single shelf (Plate 44). The south-east elevation has a doorway on the north-east side with a beaded plank and batten door on long strap hinges (Plate 45 and Plate 46). The south-west elevation has a wide low window with splayed jambs and four-light casement, all of which is set within a wider opening with quoined jambs (Plate 47). The north-west elevation is plain apart from a doorway on the north-east side with plain jambs and a newly inserted concrete lintel.



Plate 43 (left): Baltic timber marks in the ceiling of Room G6b, viewed from the north-west



Plate 44 (right): Projecting stone and cupboard in the north-east elevation of Room G6b, viewed from the south-west



Plate 45 (left): Doorway to the south-east in Room G6b, viewed from the west



Plate 46 (right): Doorway to the south-east in Room G6b, viewed from the north-west



Plate 47: Window in the south-west elevation, Room G6b, viewed from the north-east

4.3.10 **Ground floor Room 7:** this has the remains of narrow tongue and groove floorboards laid on 25 reused timbers used as joists (Plate 48). These are laid in two principal rows, with a timber in each of the window reveals and one extra one next to the south-east side of the chimney breast on the north-east side. The majority show some signs of reused, as summarised in Table 3 below (see also *Appendix 2*):



Plate 48: General view of the floor of Room G7, viewed from the south

Timber number	Evidence for reuse	Sampled for dendrochronological dating?	Date (if obtained)
G7/1	-	No	-
G7/2	-	No	-
G7/3	-	No	-
G7/4	Occasional empty peg holes	Yes	1684-1694
G7/5	Diagonal scarf joint at north-east end	Yes	1684-1694
G7/6	-	Yes	-
G7/7	-	No	-
G7/8	-	No	-
G7/9	-	No	-
G7/10	Empty socket in upper face, north-east end	No	1564-1589
G7/11	-	Yes	-
G7/12	-	No	-
G7/13	-	No	-
G7/14	Occasional empty peg holes	Yes	-
G7/15	Diagonal scarf joint at south-west end	No	-
G7/16	Numerous empty peg holes	No	-
G7/16a	-	No	-
G7/17	Diagonal scarf joint at north-east end	No	-
G7/18	Square scarf joints at both ends	No	-
G7/19	One empty peg hole, diagonal scarf joint at north-east end	No	-
G7/20	Numerous empty peg holes, diagonal scarf joint at south-west end	Yes	1684-1694
G7/21	Diagonal scarf joint at south-west end	Yes	-
G7/22	Empty socket in underside, south-west end, numerous peg holes	No	-
G7/23	Two empty sockets, one in upper face, one in underside, diagonal scarf joints at both ends, occasional empty peg hole	No	-
G7/24	-	Yes	1684-1694

Table 3: Re-used timbers sampled for dendrochronological dating in Room G7

4.3.11 The ceiling is flat plaster with a deep moulded cornice (Plate 49) and central ceiling rose with floral decoration (Plate 50). The walls had been stripped of their plaster revealing the masonry beneath; the remains of slates hung onto the wall are visible in various places projecting below the cornice. The north-east elevation has a projecting chimney breast, which is otherwise plain. The fireplace had been covered over at the time of the building recording but had a polished marble surround and aesthetic movement iron insert with tiled surround (Plate 51). The south-west elevation has a butt joint near the centre with plaster on its north-east face but there is nothing corresponding to suggest it is part of an opening. There is a doorway to the south-west with a moulded surround. The south-west elevation has two lines suggesting there was originally a large opening, now blocked, the infill including lots of pieces of reused dressed stones, apparently long thin pieces and perhaps parts of fire surrounds. One is dressed very smooth and has graffiti apparently in the form of numbers scratched into it (Plate 52). The north-west elevation has a pair of windows, the splayed jambs of which extend to the floor and the south-west with moulded panelling including shutters still extant as well as an elaborate pelmet. The north-west only has the panelling over the lintel and the jambs have dressed quoins.



Plate 49 (left): Detail of the cornice in Room G7, viewed from the west

Plate 50 (right): Ceiling rose in Room G7, viewed from the south



Plate 51 (left): Fireplace in the north-east elevation of Room G7, viewed from the south-west (photo from Avison Young)

Plate 52 (right): Graffitied stone in the south-west elevation of Room G7, viewed from the north-east

4.3.12 **Ground floor Room 8:** the floor had been removed by the time the building recording was being carried out but was sandstone flags, laid on a thick layer of loose sand. It originally had a high lath and plaster ceiling, but this had been removed, supported by a beam running north-west/south-east, formerly comprising a piece of iron rail, which had been replaced with a large boxed beam. The joists are sawn and had meat hooks in them. The walls had been stripped of plaster revealing the masonry beneath. The north-east elevation has evidence for the opening in Room G7 on both sides and another apparent butt joint on the south-east side (Plate 53). The south-east elevation has a doorway on the north-east side, the jambs partly rebuilt. To the south-west there is a doorway and small window, both blocked with masonry, and at the south-west end was an extant doorway with a new concrete lintel (Plate 54). The

south-west elevation has a central projecting chimney breast with an iron range (Plate 55) with a maker's plate reading 'JOHN WHITTLE & SON WHITEHAVEN' (Plate 56). The range is sat within a dressed stone surround with a mantel piece. The north-west elevation has a pair of tall windows with splayed quoined jambs extending to the ground and reused timber lintels (Plate 57). There was some evidence for rebuilding around these suggesting that they have been inserted.



Plate 53 (left): The north-east elevation in Room G8, viewed from the south-west
Plate 54 (right): The south-east elevation in Room G8, viewed from the north-west



Plate 55 (left): The fireplace in the south-west elevation of Room G8, viewed from the north-east
Plate 56 (right): Detail of the maker's plate on the range in Room G8, viewed from the north-east



Plate 57: The north-west elevation in Room G8, viewed from the east

4.3.12 **First floor Room 1:** this has a timber floor of fairly wide boards with a step between the north/west and south/east sides, presumably where there was originally an internal division. There are modern timber stud walls on the south-west side forming two smaller rooms, the south-east an en suite bathroom. The ceiling is finished with flat plaster and there is a boxed beam running north-east/south-west corresponding with the step in the floor. The north-east and south-east walls had had their plaster removed at the time of the building recording but were originally finished with raised and fielded timber panelling (Plate 58 and Plate 59). The north-east elevation has three windows with square jambs and stone mullion and transom openings with two and four-light timber casements (Plate 60). The two on the south-east side have lower sills and all have hand finished reused timber lintels. The panelling originally included a pair of shutters over each window (Plate 58). There is a rough join in the masonry at the south-east end. The south-east elevation has a window on the north-east side, which originally extended to the floor and is now partly infilled (mostly with concrete blocks) and has a very rough timber lintel (Plate 61). There is a projecting chimney breast to the south-west the fireplace of which has a small iron hob grate with floral decoration and stone sides and lintel. A wider opening has been partly filled to form this fireplace, which also has a stone lintel, and the chimney breast steps back at the top on the south-west side. This entire elevation had been covered with modern timber stud work over the panelling, but this shows there had been a fire surround and an overmantel and space above that presumably held a painting (Plate 59). Within the en suite bathroom there is an apparent butt joint in the wall with a quoined north-east jamb, with the possible gable of a wall running to the south-west (Plate 62). The south-west elevation, inside the en suite bathroom, has an original cupboard set into an alcove in the wall, with a rough timber lintel and three modern shelves and iron coat hooks on a timber batten (Plate 63). To the north-west there is a raised base for a shower cubicle and the small room to the north-west is finished with modern plaster. To the north-west of that there is a doorway with a bolection moulded surround. The north-west elevation is a plain stud wall with a beaded skirting board.



Plate 58 (left): Panelling on the north-east elevation, Room F1, prior to the building recording (photo from Avison Young)



Plate 59 (right): Panelling on the south-east elevation, Room 1, prior to the building recording (photo from Avison Young)



Plate 60 (left): The north-east elevation in Room F1, viewed from the south



Plate 61 (right): The south-east elevation in Room F1, viewed from the north-west



Plate 62 (left): Butt joint on the south-west side of the south-east elevation, Room F1, viewed from the north-west

Plate 63 (right): Cupboard in the south-west elevation, Room F1, viewed from the north

4.3.13 **First floor Room 2:** this has narrow tongue and groove floor boards and the ceiling is plastered, following the pitch of the roof line as it slopes down on the south-west side. This is supported by a half truss, which as a rough and hand-finished principal rafter and a smaller angled brace plus one boxed purlin (Plate 64). The walls had mostly been stripped of plaster prior to the building recording taking place. The north-east elevation is mostly covered by modern stud walling forming a cupboard on the north-west side. The rest is fairly plain, apart from a blocked opening high on the south-east side filled with brick and with a slightly projecting 'buttress' in the south-east jamb (Plate 65). The south-east elevation is relatively plain and partly recently rebuilt with a possible blocked opening in the centre. The south-west elevation has two windows with splayed jambs, timber sills, modern four-light casements and sawn timber lintels (Plate 66). The north-west elevation has a doorway on the south-west side with steps down to the room beyond. There is an alcove to the north-east with splayed jambs and one thick timber shelf and a timber sill, evidently a former window (Plate 66; see *Section 4.3.14* below).



Plate 64 (left): The truss in Room F2, viewed from the east

Plate 65 (right): The east corner in Room F2, viewed from the west



Plate 66: The south-west and north-west elevations in Room F2, viewed from the east

4.3.14 **First floor Room 3:** this comprises the top of the staircase and a corridor running north-west/south-east connecting to the first-floor rooms of the main part of the house. The floor comprises relatively narrow tongue and groove boards and the ceiling is flat plaster with a moulded cornice over the landing. The walls are mostly still finished with plaster and wall paper with parts of the landing evidently originally scored to give the appearance of ashlar blocks. The north-east elevation comprises the wall of the corridor and has two doorways with moulded surrounds, the south-east elevation moulded (Plate 67).

The south-east elevation has a return on the north-east side and the plaster has been partly removed to the south-west revealing the blocked opening corresponding with the alcove in Room F2 (Plate 68). The doorway to the south-west of this has a moulded surround. The south-west elevation is dominated by a large stair window with splayed jambs, a sawn timber lintel and eight-light casement, the top two of which have stained glass panels attached over the inside (Plate 69). The corresponding elevation in the corridor is plain apart from a tall and deep alcove on the south-east side with plain surrounds. The north-west elevation has a doorway on the landing to the south-west with a moulded surround and another at the end of the corridor, which is plain and up a single step.



Plate 67 (left): The north-east elevation inside the corridor, Room F3, viewed from the south

Plate 68 (right): The south-east elevation, Room F3, viewed from the north-west

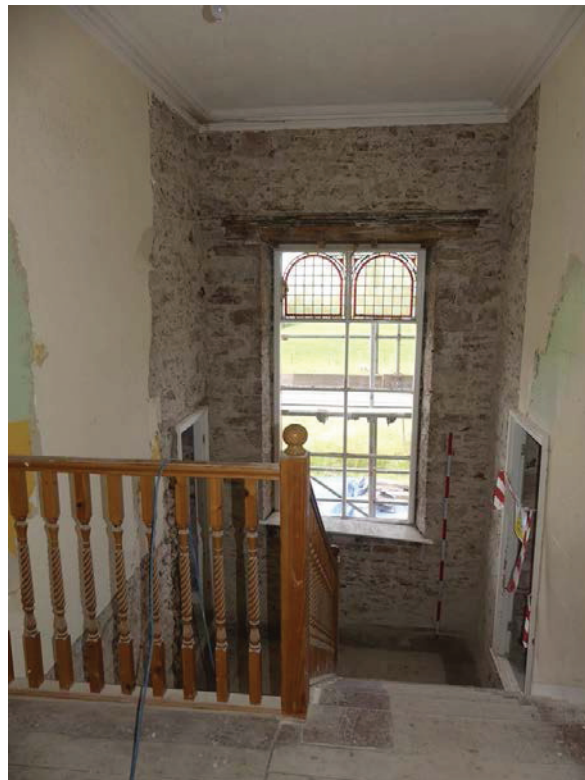


Plate 69: The south-west elevation, Room F3, viewed from the north-east

4.3.15 **First floor Room 4:** this has a narrow tongue and groove board floor and flat plaster ceiling. The walls have mostly been stripped of plaster but there is a moulded skirting board where this still remains. The north-east elevation has two windows with square jambs extending to the ground and rough reused

timber lintels (Plate 70). The south-east elevation is a plain stud partition wall as is the south-west, which also has a doorway with a moulded surround (Plate 71). The north-west elevation has a projecting chimney breast built from a mixture of stone and brick, with a stone lintel over the fireplace (Plate 72), which was boxed in at the time of the building recording but has a moulded surround and iron hob grate insert with floral decoration (Plate 73) and an earlier blocked opening was also evident. There is a crack in the masonry on the north-east side, perhaps representing a join with the north-east elevation.



Plate 70 (left): The north-east elevation, Room F4, viewed from the south-west

Plate 71 (right): The south-east and south-west elevations, Room F4, viewed from the north



Plate 72 (left): The north-west elevation, Room F4, viewed from the south-east

Plate 73 (right): The fireplace on the north-west elevation, Room F4, viewed from the south-east (photo from Avison Young)

4.3.16 **First floor Room 5:** the floor comprises wide boards on sawn joists (comprising Baltic timbers – see Section 4.3.9 above) and the ceiling slopes down to the south-west following the pitch of the roof with a single rough, almost roundwood, purlin and an angled brace of similar timber supporting it (Plate

74). Much of the plaster has been removed from the walls. The north-east elevation is relatively plain apart from an oddly angled alcove on the north-west side with a plain surround, the back partly filling an aperture with lath and plaster into Room G4 beyond (Plate 75). The south-east elevation is also fairly plain, with lots of cracks and a doorway on the south-west side with a timber lintel. The south-west elevation has a pair of small windows with splayed jambs and rough re-used timber lintels, four-light timber casements and thin timber sills (Plate 76). The north-west elevation has a blocked mullion window on the south-west side with plain chamfers and three lights (Plate 77). The wall possibly butts the north-east elevation.



Plate 74 (left): Purlin and brace in Room G5, viewed from the south-east

Plate 75 (right): Alcove in the north-east elevation of Room G5, viewed from the south-west



Plate 76 (left): Windows in the south-west elevation, viewed from the north-east

Plate 77 (right): Blocked mullion window in the north-west elevation, viewed from the south-east

4.3.17 **First floor Room 6:** this has narrow tongue and groove floorboards and a flat plaster ceiling. The walls had been stripped of plaster. The north-east elevation has a central chimney breast with quoined corners (Plate 78); the fireplace was boxed in at the time of the building recording but it has a polished marble surround and iron hob grate insert with floral decoration (Plate 79). The south-east elevation is relatively plain, with a large crack on the north-east side and it stepped back with stud walling on the south-west side where there is a doorway with a moulded surround (Plate 80). The south-west elevation has a slight step or possible butt joint on the south-east side (Plate 81). The north-west elevation has two windows with splayed jambs extending to the floor with quoins and timber sash casements of two and four lights behind the external stone mullion and transoms (Plate 82).



Plate 78 (left): The chimney breast on the north-east elevation, Room F6, viewed from the south-west
Plate 79 (right): The fireplace on the north-east elevation, Room F6, viewed from the south-west (photo from Avison Young)



Plate 80: The south-east elevation, Room F6, viewed from the north-west



Plate 81 (left): The south-west elevation, Room F6, viewed from the north-east

Plate 82 (right): The north-west elevation, Room F6, viewed from the north-west

4.3.18 **First floor Room 7:** this also had a narrow tongue and groove board floor and flat plaster ceiling and the walls were stripped of plaster. The north-east elevation apparently butts the north-west and is partly rebuilt in brick at the junction and there were numerous cracks and areas of rebuild (Plate 83). There is a doorway on the south-east side with a moulded surround. The south-east elevation has a blocked aperture low on the north-east side and another just to the south-west of this but higher and extending beyond the line of the ceiling (Plate 84). The former has a re-used timber lintel. The south-west elevation has a projecting chimney breast with quoined jambs (Plate 85); the fireplace was boxed in at the time of the building recording but had a polished marble surround, with scrolled brackets supporting the mantel piece, and iron insert with a semi-circular opening with floral decoration (Plate 86). The north-west elevation has two windows with splayed jambs extending to the floor and reused rough timber lintels. There are two and four-light timber sash casements behind the external stone mullion and transoms (Plate 87).

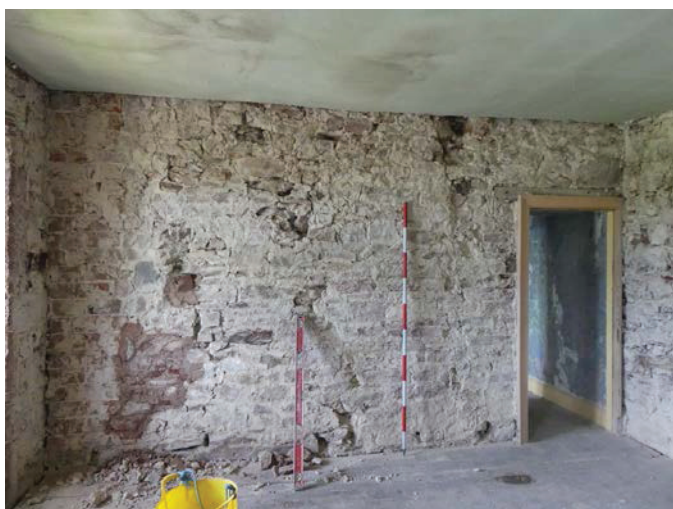


Plate 83 (left): The north-east elevation, Room F7, viewed from the south-west

Plate 84 (right): The south-east elevation, Room F7, viewed from the north-west



Plate 85 (left): The south-west elevation, Room G7, viewed from the north-east



Plate 86 (right): The fireplace on the south-west elevation, Room G7, viewed from the north-east (photo from Avison Young)

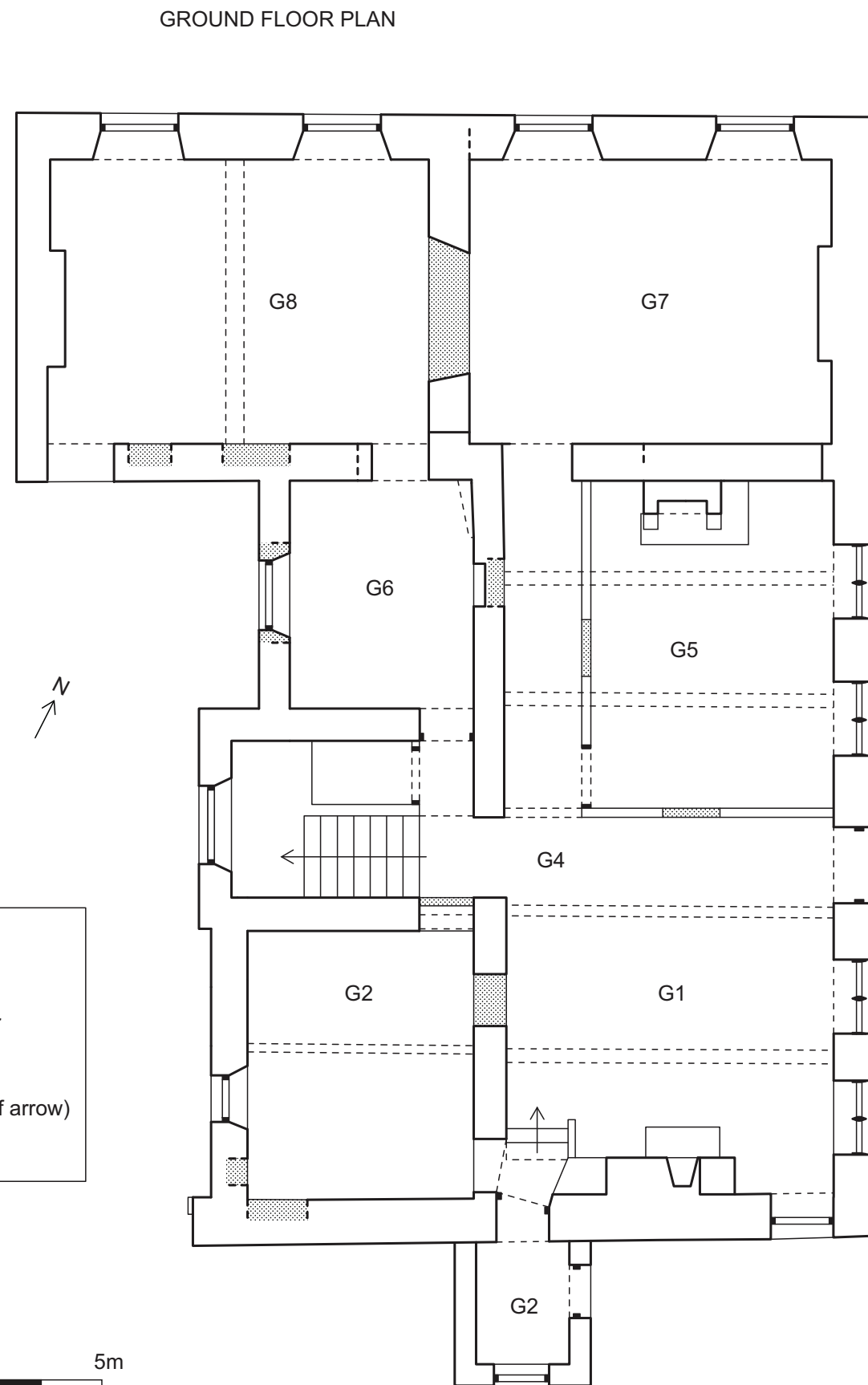


Plate 87: The north-west elevation, Room G7, viewed from the east

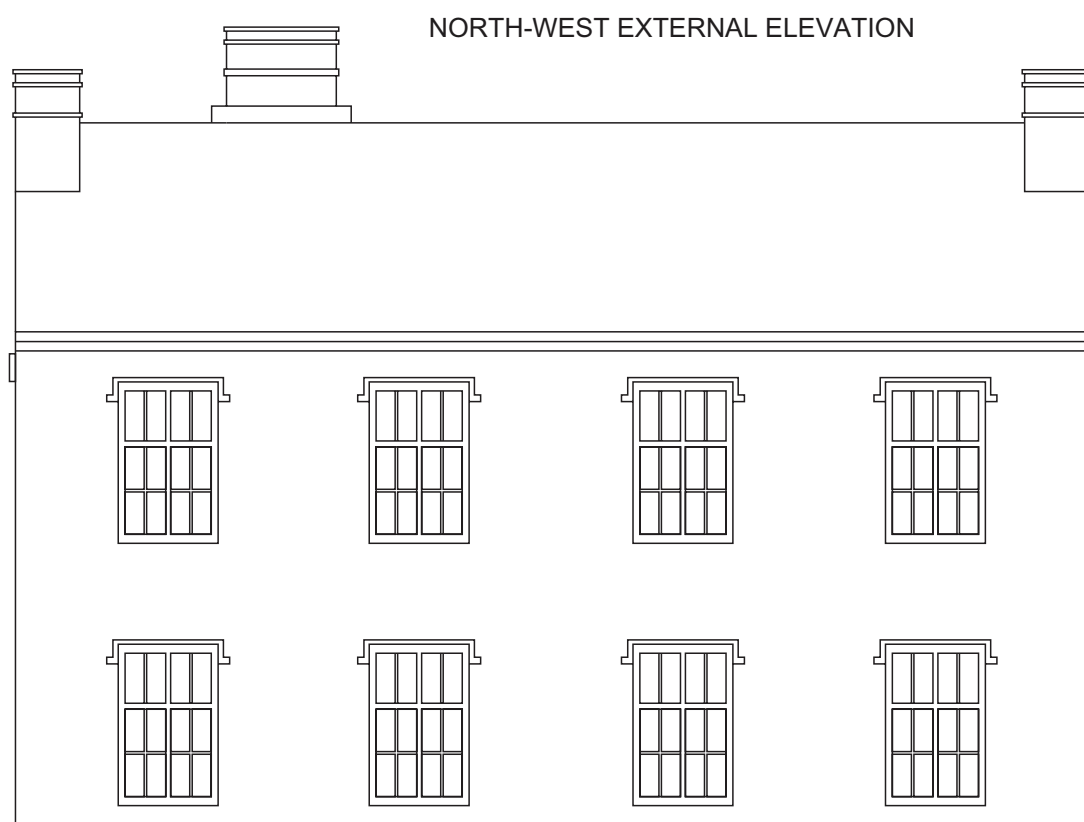
4.3.19 **Roof space:** it was not possible to access the roof space as there were no obvious points of entry.



NORTH-EAST EXTERNAL ELEVATION



GROUND FLOOR PLAN



NORTH-WEST EXTERNAL ELEVATION

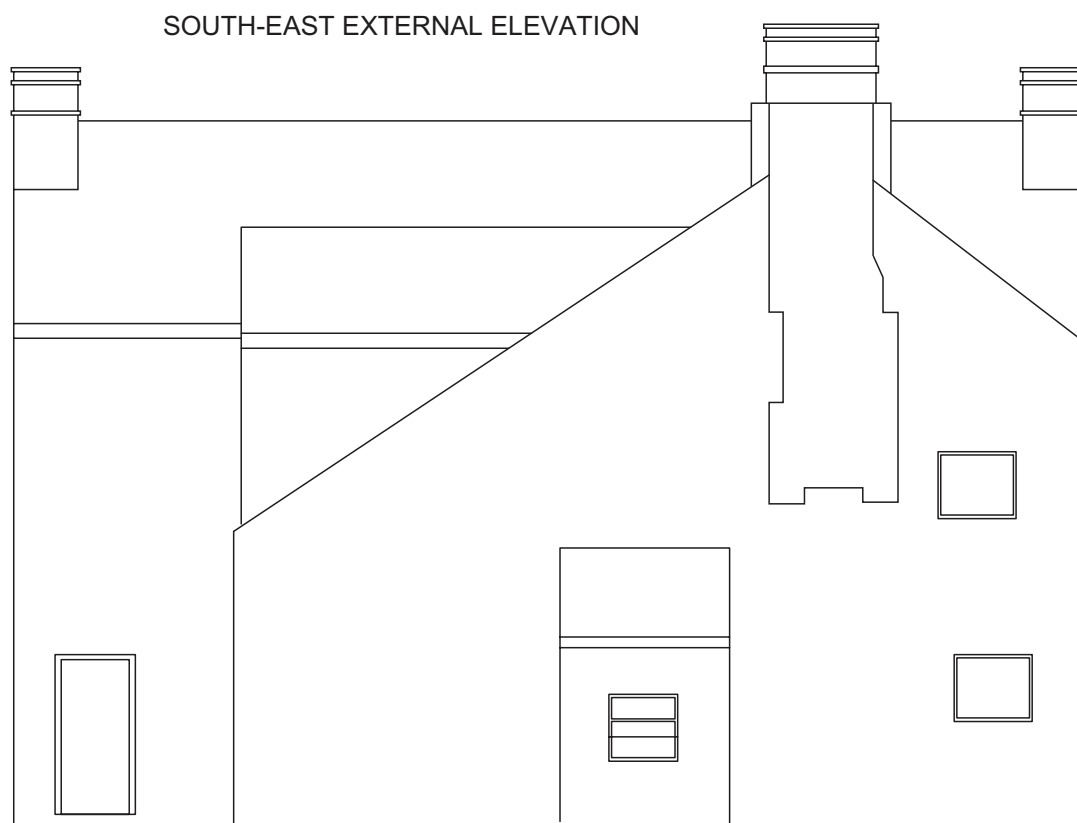
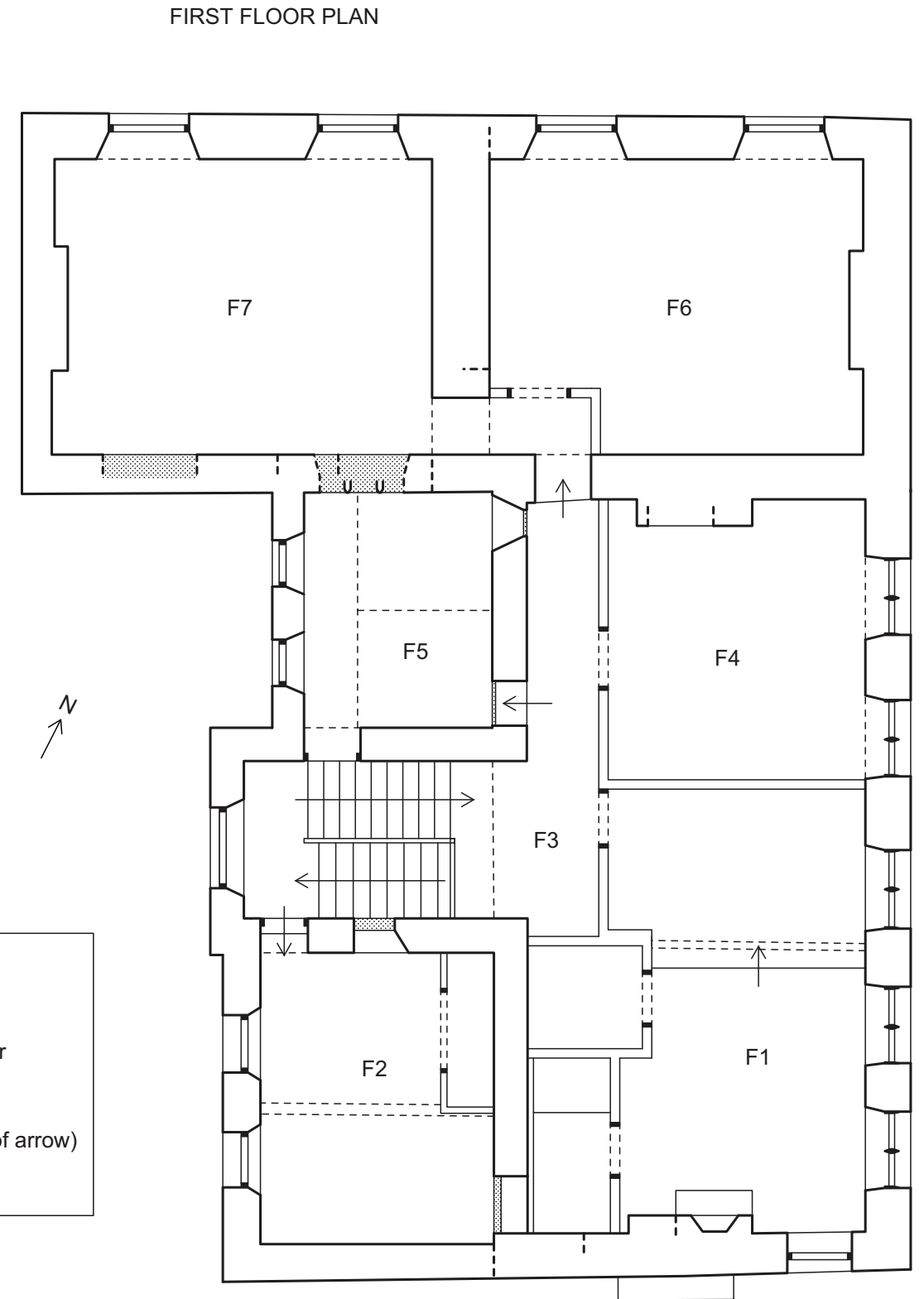
Key:

- blocked feature
- cross-sectional timber
- overhead feature
- step up (in direction of arrow)
- G5 room number







After original drawings © Keelagher Okey Klein 2017

Figure 2: North-east and north-west external elevations and ground floor plan



Key:

-  blocked feature
-  cross-sectional timber
-  overhead feature
-  step up (in direction of arrow)
- F5 room number



After original drawings © Keelagher Okey Klein 2017

Client: NDA Properties Ltd

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Figure 3: South-west and south-east external elevations and first floor plan

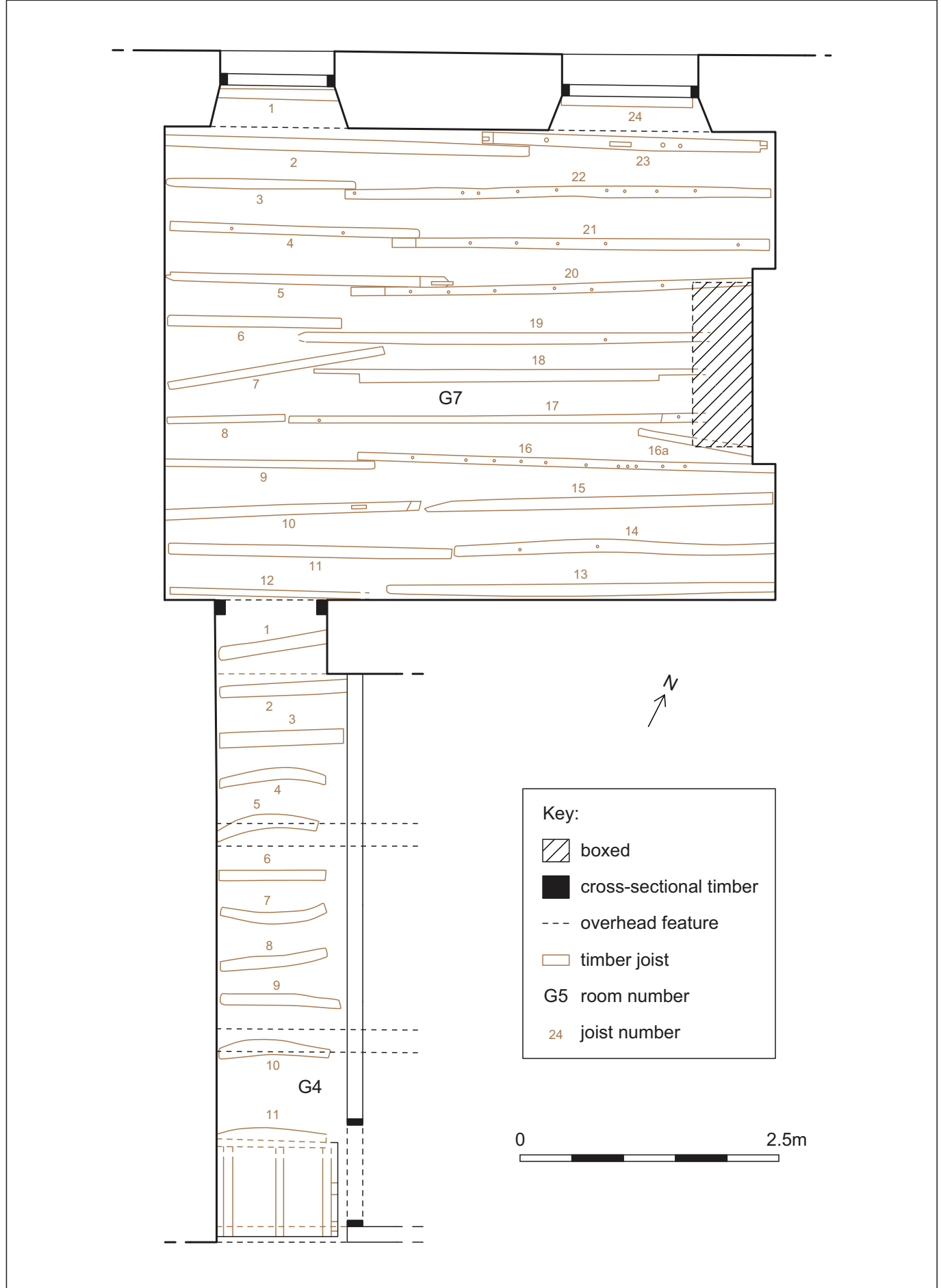


Figure 4: Floor joists

5. Discussion

5.1 Introduction

5.1.1 The investigation of the building has allowed a detailed recording of those elements of historic interest exposed on the ground floor, specifically the reused timbers in Room G4 and G7. However, the opportunity to examine the rest of the structure at the same time, especially with much of the internal plaster removed, has provided a rare opportunity to examine this locally important building. This combined with the dendrochronological sampling, which concentrated on the reused timbers in Rooms G4 and G7 but also examined other timbers from the rest of the building, has provided some valuable information about the development of the structure.

5.2 Phasing

5.2.1 **Introduction:** the wider examination of the building has allowed five main phases of development to be established, several of which can be connected to the results of the dendrochronological assessment. Although there is a documentary reference to Seascale Hall in 1501 and the site has undoubtedly been occupied since the medieval period, the first identified phase probably only dates to the late 16th or early 17th century.

5.2.2 **Phase 1 (late 16th-early 17th century):** there are elements within the existing building that clearly form part of a much older structure, although the substantial remodelling in later phases makes the exact form of this difficult to ascertain. While there are some elements that might be from an even earlier building, it seems likely that the rear part of the building originally formed a 'multi-storey porch house', a type that began to be constructed at the end of the 16th century (Brunskill 2002, 53) and was essentially the last remnant of a tradition of building defensive tower-like structures (Hill 2021). This would have been accessed from the south-west side, with the main entrance in the base of what is now the stair tower. The current stair tower would have contained a smaller spiral stone staircase, the remains of which are perhaps what was observed in Room G6a. This original building would have been lower in height, and must initially have formed a single range running north-west/south-east with the mullion window in Room F5 in what would have been the original end wall. Other former windows to the north-east were present in Rooms G2 and G6b and F2 and F5, with an originally wider opening to the south-west in G6b perhaps originally containing another mullion window. This structure was probably enlarged at an early date by the addition of a small wing extending to the north-west (corresponding to Rooms G8 and F7), which probably had a large mullion window in the north-east side of Room G8. The datestone of 1606 set into the south-east face of this wing was at one time described as over a doorway (Senhouse 1893, 252), presumably that blocked up in Room G8. A single tree-ring date of 1564-1589 from timber G7/10 re-used in Phase 4 perhaps relates to this period but it is also likely to correspond to the datestones of 1579 and 1606, and is the principal work carried out by the Senhouse family in making their manorial seat at Seascale Hall into a suitably impressive mansion, as described by John Denton.

5.2.3 **Phase 2 (late 17th century):** although there are no phases of development within the standing building that can be confidently attributed to the late 17th century several of the timbers sampled in Rooms G4 and G7 had felling dates in the late 17th century, typically 1684-1694, although one was slightly earlier (see *Appendix 2*). It is apparent that all of these timbers were reused and so it is impossible to be certain where they originated. The issue of the reuse of materials in historic buildings in Cumbria has been discussed by Blake Tyson (2000) and was evidently a widespread phenomenon. It is logical to assume that such material did not travel far and was often used on the site from which it originally derived, although Tyson has shown that this was not always the case. However, given that Seascale Hall was the centre of an entire manor it is entirely likely that the timbers came some distance from elsewhere in the manor. The form of the reused timbers in Rooms G4 and G7, although difficult to discern in detail during the building recording due to their location, seemed to indicate that they mostly comprised former purlins, although they could also represent parts of cruck or timber framed buildings, with the curved pieces in G4 perhaps wind braces.

5.2.4 **Phase 3 (1707-1710):** the large symmetrical façades to the north-east and north-west represent a substantial change in the building's appearance, with the front switched to the north-east, the height

raised on this side, new decorative elements added throughout, and the whole building probably extended to the north-west and north-east to provide a suite of large new public rooms on the ground floor and bedrooms on the first. The former entrance in the multi-storey porch to the south-west was presumably blocked and space remodelled to form a stair tower and the windows modified to create a corresponding large stair window. The dating and form of the resulting building, specifically the front façade, has been taken as suggesting a date of about 1700 (Hyde and Pevsner 2010, 609), which undoubtedly corresponds to the datestone of 1710 and is therefore the work of Mr Blacklock, who acquired the estate in 1707. Robert Blacklock (or Blaiklock) had already built what was described in as ‘*a very fine and large House*’ (Tyson 1986, 161) on Lowther Street in Whitehaven in 1693, one of the first in the newly developing town (Collier and Pearson 1991, 33) and it is notable that the new façade at Seascale Hall is essentially in the fashionable new style of such early Georgian town houses. The internal details such as the polished marble chimneypieces and panelling are also in keeping with this date (Burton and Porten 2000), although some have been modified with the insertion of later grates. The dendrochronological dating also confirms this date as one of the two beams in what must have been the main kitchen for the new house (Room G1) was dated 1708, a year after Blacklock acquired the property and two years before the datestone, which suggests that 1710 was the year in which work was completed.

5.2.4 Phase 4 (late 18th- 19th century): the ownership history of the building suggests that throughout the 18th and into the 19th century while it belonged to the successive lords of the manor it was rented as a farm house for much of this time. However, in the later 19th century the link to the manor of Newton and Seascale was finally broken, initially due to the building of a new manor house. This change in ownership was perhaps the reason for another phase of development, most likely occurring in the late 19th century, but potentially representing a longer period of general repair and improvement to what had become a working farmhouse. It is evident that throughout much of the building the floors were replaced. The evidence for this is the sawn timbers and narrow tongue and groove floorboards in most rooms, but also the use of Baltic timbers (seen in Room G6b), which were widely used in the region in the late 18th but mainly early to mid-19th centuries (Vandenabeele *et al* 2016). This work seems to have resulted in a range of earlier timbers being reused as floor joists, specifically in Rooms G4 and G7, the majority of which seem to have been taken from one or more late 17th century buildings (see 5.2.3 above). Other minor changes include modifications to many of the fireplaces with the addition of iron inserts of late 19th century date, such as the aesthetic movement example in Room G7 and the range in Room G8, which cannot have been added before 1870 when John Whittle and Son was established (Cumbria County Council 2021). It appears that by this time, if not before, Room G8 was being used primarily for the preparation of food, especially meat.

5.2.5 Phase 5 (20th century): most recently a range of fairly minor alterations have been carried out, mostly repairs to timber, blocking or remodelling of some doorways/windows, and the construction of a new monopitch porch on the south-east side. The map and photographic evidence show that a large section to the south, including two separate but adjoining buildings, was demolished sometime after 1965. Externally the most significant change has been the rendering of all of the walls with rough cast, which probably also led to the loss of at least one if not two of the three datestones; all three were apparently present when the building was first listed in 1967 although the one dated 1710 was apparently in a porch on the ‘south gable’ end of the building, evidently meaning the south-east elevation, and so presumably referring to an older porch that was later demolished.

5.3 Significance

5.3.1 Despite the extensive modification that the building has seen from at least the 19th century onwards Seascale Hall remains an important structure. As the original seat of the lords of the manor of Newton and Seascale it is likely to have been occupied since the medieval period, although no evidence relating to this is now apparent. The current structure seems to have started out as a substantial mansion of late 16th or early 17th century date that belonged to the locally important Senhouse family, before being extensively remodelled by a local merchant Robert Blacklock in the fashionable early Georgian style, mimicking that used in the growing town of Whitehaven. In that sense it therefore symbolises the change in society at that time as an old established gentry family being bought out by

'new money' made from trade and industry. This did not last, however, and Seascale Hall was soon relegated to a farmhouse and went through a period of gradual decline in the 19th century until it was consolidated in its current form.

5.4 Recommendations

5.4.1 The building recording has provided a rare opportunity to examine the building during renovation work, while a range of surfaces and floors were exposed, however it was difficult to fully examine the reused timbers in Rooms G4 and G7. It is therefore recommended that these are examined in more detail once they have been removed from the building so that a better understanding of their form and original function can be obtained.

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Appendix 1: Listed Building Details

Listed Building information from Historic England (2021a)

Heritage Category:	Listed Building
Grade:	II
List Entry Number:	1336064
Date first listed:	08-Sep-1967
Statutory Address:	SEASCALE HALL
County:	Cumbria
District:	Copeland (District Authority)
Parish:	Seascale
National Grid Reference:	NY 03880 02871

Details:

Farmhouse. c1710 with 19th century north range. Roughcast stone with ashlar dressings, slate roof. East elevation of two storeys and six bays, the sixth bay forms gable end of 19th century wing. Windows have single-chamfered cross-mullioned windows. Label moulds. Entrance to third bay has bolection-moulded architrave, two-light overlight and three-fielded panel door (two-over-one). Datestone: 1579. Gable-end stacks, one to sixth bay, and cross-axial stack. South gable end has projecting stack and lean-to porch with datestone: "1710/R & EB" on shield. North four-bay elevation has similar details to above but higher; gable-end stacks. Rear has outshut under catslide roof, gabled bay to north and gabled stair bay. Windows have small-paned pivoted casements, stair window with label and round window. Small datestone; Ponsonby arms: "IS/MS/1606"; stone with scrolls. Interior has stair with twisted column on vase balusters, remains of spiral stair, first floor room with panelling, dado and bolection-moulded panel over fireplace and architrave to doors, one imitation.

Appendix 2: Dendrochronological Report



**SEASCALE HALL
SEASCALE
CUMBRIA**

TREE-RING ANALYSIS OF TIMBERS



North-east elevation of Seascale Hall (after Greenlane Archaeology Ltd)

**Alison Arnold and Robert Howard
July 2021**

SEASCALE HALL, SEASCALE, CUMBRIA; TREE-RING ANALYSIS OF TIMBERS

ALISON ARNOLD
ROBERT HOWARD

SUMMARY

Analysis by dendrochronology was undertaken on 13 of the 17 samples obtained from various timbers within Seascale Hall (four samples having too few rings for reliable dating). This analysis produced two site chronologies and dated a further three samples individually.

The earliest timber detected in this programme of analysis is represented by the individually dated sample SES-H11, from a floor joist in room G7, this being felled at some point between 1564 at the earliest and 1589 at the latest. Another timber, represented by the individual sample SES-H14 from a joist in room G5, was felled between 1634 at the earliest and 1659 at the latest.

Further floor joists were felled, potentially all at the same time in the later seventeenth century, at some point estimated to lie between 1684–94.

The southern ceiling beam to room G1, represented by the individually dated sample SES-H02, was felled in 1708.

Of the 13 samples which were measured and analysed, five remain ungrouped and undated.

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Introduction

Seascale Hall stands a little way north of the village of Seascale (NY 303880 502865, Figs 1a/b). The listing entry for the building describes it as a Grade II listed farmhouse of ca.1710, with a nineteenth century north range. The building is of roughcast stone with ashlar dressing beneath a slate roof. The East elevation is of two storeys, six bays long, the sixth bay forming the gable end of the nineteenth century north range, which is four bays long.

Although the listing entry says that there is a datestone inscribed '1579' over the front door to the main, east, range, plus a small datestone with the Ponsonby arms inscribed 'S/MS/1606' to the north range, with a third datestone inscribed '1710/R & EB' on a shield to the porch of a lean-to to the South gable, only the first datestone now appears to be visible. The other two seem to have disappeared.

Sampling

Sampling and analysis by tree-ring dating of the timbers within Seascale Hall were commissioned by Greenlane Archaeology Ltd. This programme of dendrochronology was undertaken as an adjunct to a programme of survey and recording conducted while the property undergoes major repairs by NDA Properties Ltd (the survey results being issued separately). Apart from a number of carved stones to the building, each with a different date, there is little stylistic or architectural detail by which the date the building might be determined, except for its final appearance which suggests early eighteenth century.

Within, the property contains a small number of ceiling beams, plus a number of timber lintels to the windows (Figs 2a/b). A series of sub-floor joists, laid straight onto the earth in one room and an adjacent hallway, were also revealed during building works (Figs 2c/d). Many of these timbers show evidence, by way of redundant tennons, peg holes, joint beds, and mortices (one or two of considerable size), of having been used previously elsewhere, with perhaps only the ceiling beams being primary to the present building.

An initial examination of these timbers showed that a number of them, particularly some of the window lintels, were derived from fast-grown trees, which, although producing beams of good size, had too few rings for reliable dating. Other timbers (some of the floor joists) were also too small to provide worthwhile samples.

Thus, from the suitable timbers available a total of 17 samples was obtained either by coring, or in one case, as a loose, ex-situ, timber. Each sample was given the tree-ring code SES-H (for Seascale Hall), and numbered 01–17. Details of the samples are given in Table 1, including the timber sampled and its location, the total number of rings each sample has, and how many of these, if any, are sapwood rings. The individual date span of each dated sample is also given. For the purposes of this report the front of the house is deemed to face site east onto the farmyard, with the rear facing site west. The locations of the sampled timbers are shown here on plans provided by Greenlane Archaeology Ltd as Figures 3 a–c.

The Nottingham Tree-ring Dating Laboratory would like to take this opportunity to thank Dan Elsworth of Greenlane Archaeology Ltd for commissioning this programme of analysis, and for the use of information, plans, and drawings used throughout this report. The Laboratory would also like to thank NDA Properties Ltd for generously funding this programme of tree-ring dating.

Tree-ring dating

Tree-ring dating relies on a few simple, but quite fundamental, principles. Firstly, as is commonly known, trees (particularly oak trees, the timber most commonly used in building construction until the introduction of pine from the late eighteenth century onwards) grow by adding one, and only one, growth-ring to their circumference each, and every, year. Each new annual growth-ring is added to the outside of the previous year's growth just below the bark. The width of this annual growth-ring is largely, though not exclusively, determined by the weather conditions during the growth period (roughly March–September). In general, good conditions produce wider rings and poor conditions produce narrower rings. Thus, over the lifetime of a tree, the annual growth-rings display a climatically influenced pattern. Furthermore, and importantly, all trees growing in the same area at the same time will be influenced by the same growing conditions and the annual growth-rings of all of them will respond in a similar, though not identical, way.

Secondly, because the weather over a certain number of consecutive years (the statistically reliable minimum calculated as being 54 years) is unique, so too is the growth-ring pattern of the tree. The pattern of a shorter period of growth, 20, 30, or even 40 consecutive years, might conceivably be repeated two or even three times in the last one thousand years, and is considered less reliable. A short pattern might also be repeated at different time periods in different parts of the country because of differences in regional micro-climates. It is less likely, however, that such problems would occur with the pattern of a longer period of growth, that is, anything in excess of 45 years or so. In essence, a short period of growth, anything less than 45 rings, is not reliable, and the longer the period of time under comparison the better.

Tree-ring dating relies on obtaining the growth pattern of trees from sample timbers of unknown date by measuring the width of the annual growth-rings. This is done to a tolerance of 1/100 of a millimetre. The growth patterns of these samples of unknown date are then compared with a series of reference patterns or chronologies, the date of each ring of which is known. When the growth-ring sequence of a sample 'cross-matches' repeatedly at the same date span against a series of different reference chronologies the sample can be said to be dated. The degree of cross-matching, that is the measure of similarity between sample and reference, is denoted by a 't-value'; the higher the value the greater the similarity. The greater the similarity the greater is the probability that the patterns of samples and references have been produced by growing under the same conditions *at the same time*. The statistically accepted fully reliable minimum t-value is 3.5.

However, rather than attempt to date each sample individually it is usual to first compare all the samples from a single building, or phase of a building, with one another, and attempt to cross-match each one with all the others from the same phase or building. When samples from the same phase do cross-match with each other they are combined at their matching positions to form what is known as a 'site chronology'. As with any set of data, this has the effect of reducing the anomalies of any one individual (brought about in the case of tree-rings by some non-climatic influence) and enhances the overall climatic signal. As stated above, it is the climate that gives the growth pattern its distinctive pattern. The greater the number of samples in a site chronology the greater is the climatic signal of the group and the weaker is the non-climatic input of any one individual.

Furthermore, combining samples in this way to make a site chronology usually has the effect of increasing the time-span that is under comparison. As also mentioned above, the longer the period of growth under consideration, the greater the certainty of the cross-match. Any site chronology with less than about 55 rings is generally too short for reliable dating.

Having obtained a date for the site chronology as a whole, the date spans of the constituent individual samples can then be found, and from this the felling date of the trees represented may be calculated. Where a sample retains complete sapwood, that is, it has the last or outermost ring produced by the tree before it was cut, the last measured ring date is the felling date of the tree.

Where the sapwood is not complete it is necessary to estimate the likely felling date of the tree. Such an estimate can be made with a high degree of reliability because oak trees generally have between 15 to 40 sapwood rings. For example, if a sample with, say, 12 sapwood rings has a last sapwood ring date of 1400 (and therefore a heartwood/sapwood boundary ring date of 1388), it is 95% certain that the tree represented was felled sometime between 1403 (1400+3 sapwood rings (12+3=15)) and 1428 (1400+28 sapwood rings (12+28=40)).

Analysis

Each of the 17 samples obtained from this building was prepared by sanding and polishing. It was seen at this time that four samples, SES-H10, H12, H15, and H16 (all floor joists) had too few rings (fewer than 40) for reliable dating, and all four samples had to be rejected from this programme of analysis. The annual ring widths of the remaining 13 samples were, however, measured, these measured data then being compared with each other as described in the notes above. This comparative process indicated that two groups of cross-matching samples could be formed.

The first group comprises two samples, SES-H05 and H08. These two samples were combined at their cross-matching positions to form SESHQ01, a site chronology 76 rings

long overall. These 76 rings were then dated by comparison with a large number of reference chronologies as spanning the years 1588–1663 (see Table 2).

The second group comprises three samples, SES-H07, H09, and H17. These three samples were also combined at their cross-matching positions to form SESHQ02, a site chronology 70 rings long overall. These 70 rings were then also dated by comparison with a large number of reference chronologies as spanning the years 1595–1664 (see Table 3).

The eight remaining measured but ungrouped samples were then compared individually with the reference chronologies. This comparative process indicated satisfactory cross-matches and dates for three further samples, SES-H02, H11, and H14. The 142 rings of sample SES-H02 span the years 1567–1708, the 95 rings of sample SES-H11 span the years 1455–1549, and the 120 rings of sample SES-H14 span the years 1500–1619 (see Tables 4–6).

This analysis may be summarised thus.

Samples obtained	17			
Samples measured	13			
Samples unmeasured	4			
Chronology SESHQ01	2 samples	76 rings long	1588–1663	
Chronology SESHQ02	3 samples	70 rings long	1595–1664	
SES-H02	1 individual	142 rings long	1567–1708	
SES-H11	1 individual	95 rings long	1455–1549	
SES-H14	1 individual	120 rings long	1500–1619	
Ungrouped samples	5		undated	

Interpretation

The earliest timber to be detected in this programme of analysis appears to be represented by the individually dated sample SES-H11, from a floor joist in room G7. The latest ring on this sample is dated 1549, this ring being at the heartwood/sapwood boundary (h/s). Allowing for the minimum of 15 sapwood rings and a maximum of 40 sapwood rings the tree is likely to have had, would suggest that the source tree was felled at some point between 1564 at the earliest and 1589 at the latest.

A later episode of felling is represented by sample SES-H14 from a floor joist in room G5, again individually dated. The latest ring on this sample is dated 1619, this ring again being at the heartwood/sapwood boundary. Allowing for the minimum/maximum of 15/40 sapwood rings would indicate that the source tree for this timber was felled at some point between 1634 at the earliest and 1659 at the latest.

A still later episode of felling appears to be represented by the two samples (SES-H05 and H08) of site chronology SESHQ01 and the three samples (SES-H07, H09, and H17) of site chronology SESHQ02. The almost identical heartwood/sapwood boundary position/date on those samples which retain it suggests that the trees were felled at the same, or at least at a very similar, time (although, because the two groups of samples do not match each other, they are likely to have been growing in quite different woodlands).

One sample of this group, SES-H17, has a heartwood/sapwood boundary date of 1664. This sample does, however, retain sapwood complete to the bark. Although, due to their decayed state, the sapwood rings cannot be clearly seen or measured, it is estimated that they amount to between 20 and 30 in number. Adding these amounts to the heartwood/sapwood boundary date would suggest that the source tree was felled at some point in the period 1684–94. As intimated above, given the similarity in the heartwood/sapwood boundary date on the other samples, it is likely that all these timbers were felled at the same, or at least a similar, time.

The latest felling detected in this analysis is represented by sample SES-H02, from the southern ceiling beam of room G1. This sample retains sapwood complete to the bark, this last ring, and thus the felling of the source tree, being dated to 1708.

Conclusion

Analysis by dendrochronology has, therefore, dated eight of the 13 samples which were measured. This dating indicates that, as possibly intimated by the evidence of reuse amongst some of the sampled material, timbers felled at different times are to be found here.

At least one timber was felled in the later sixteenth century, this felling perhaps being related to the '1579' datestone. Another timber was felled about the middle of the seventeenth century with further timbers being felled, potentially all at the same time, at some point in the later seventeenth century. The latest felling is of a further individual timber, this being in the very early eighteenth century (the work undertaken at this time perhaps coincidentally possibly being commemorated by the supposed (but no longer visible) inscription '1710/R & EB' on a shield, to the south gable lean-to porch).

Of the 13 samples which were measured and analysed, five remain ungrouped and undated. While all such samples do strictly have sufficient numbers of rings for analysis (ie, in excess of 50), a few are towards the lower end of the range. In addition, two undated samples show either distortion to their growth rings or bands of narrow rings where the growth has been suppressed. It is likely that these features interfere with the climatic signal of the growth whereby the rings patterns are matched with the reference chronologies.

In addition, given the disparate nature of the cross-matching between samples and groups of samples (or rather the lack of it) it is possible that each of these undated timbers is of a

different date, and possibly from a different source. If this is so, this would in effect make each sample a 'singleton', and while such single samples can sometimes be dated (as seen here), it is often more difficult than with groups of samples which supply well replicated data. The lack of dating does not, however, conclusively mean that the timbers are certainly of different dates and from different sources, but it does add further weight to the possibility.

Thus, taken overall, it would appear that the beams sampled for this analysis are of different dates and/or from different sources, and most likely represent a collection of salvaged and reused timbers.

Woodland sources

On occasion it is possible to make some comment on the likely or possible sources of the timbers used in a particular building. This is usually indicated by an unusually high or close degree of cross-matching (with high '*t-values*') between any given site chronology and a series of reference chronologies with a propensity towards a particular geographical area. In this case, however, as may perhaps be seen from Table 2–6, where, with the exception of a singular high level match between site chronology SESHSQ01 and timbers from a building in Cockermouth in Cumbria, there appear to be no particular, repeated, geographical preference amongst the cross-matching reference chronologies, those listed being spread over different parts of England. In this instance this is almost certainly due to the small number of samples, in some cases single individuals, which are being compared, these producing relatively weak geographical climate signals.

Table 1: Details of tree-ring samples from Seascale Hall, Seascale, Cumbria

Sample number	Sample location	Total rings	Sapwood rings*	First measured ring date (AD)	Heart/sap boundary (AD)	Last measured ring date (AD)
SES-H01	Room G1, north ceiling beam	73	19C	-----	-----	-----
SES-H02	Room G1, south ceiling beam	142	29C	1567	1679	1708
SES-H03	Room G1, lintel south gable window	66	h/s	-----	-----	-----
SES-H04	Room F4, lintel to southern window	54	no h/s	-----	-----	-----
SES-H05	Room G7, joist 23	76	h/s	1588	1663	1663
SES-H06	Room G7, joist 21	51	no h/s	-----	-----	-----
SES-H07	Room G7, joist 4	57	no h/s	1598	-----	1654
SES-H08	Room G7, joist 20	55	no h/s	1597	-----	1651
SES-H09	Room G7, joist 5	60	h/s	1602	1661	1661
SES-H10	Room G7, joist 6	nm	---	-----	-----	-----
SES-H11	Room G7, joist 10	95	h/s	1455	1549	1549
SES-H12	Room G7, joist 14	nm	---	-----	-----	-----
SES-H13	Room G5, joist 2	57	h/s	-----	-----	-----
SES-H14	Room G5, joist 6	120	h/s	1500	1619	1619
SES-H15	Room G5, joist 8	nm	---	-----	-----	-----
SES-H16	Room G5, joist 9	nm	---	-----	-----	-----
SES-H17	Room G5 - loose timber	70 +20-30 nm	h/s +20-30	1595	1664	1664 (1684-94)
*h/s = heartwood/sapwood boundary, i.e., only the sapwood rings are missing						
C = complete sapwood is retained on the sample; where dated, the last measured ring date is the felling date of the timber						
nm = sample not measured						

Table 2: Results of the cross-matching of site chronology SESHSQ01 and the reference chronologies when the first ring date is 1563 and the last ring date is 1663

Reference chronology	t-value
Ship Inn, Cockermouth, Cumbria	9.8
England Master Chronology	6.3
Home Farm, Foremark, Derbyshire	5.5
6 Market Street, Tamworth, Staffordshire	5.6
Potterdyke House, Newark, Nottinghamshire	5.2
The Little Castle, Bolsover Castle, Derbyshire	4.8

Table 3: Results of the cross-matching of site chronology SESHSQ02 and the reference chronologies when the first ring date is 1595 and the last ring date is 1664

Reference chronology	t-value
Ledston Hall, Castleford, West Yorkshire	6.2
Ship Inn, Cockermouth, Cumbria	5.9
Tonge Hall, Rochdale, Lancashire	5.7
Yew Tree Farm, Kirton, Nottinghamshire	5.3
Hathershaw Hall, Oldham, Lancashire	5.1
Staircase House, Stockport, Greater Manchester	5.0

Table 4: Results of the cross-matching of sample SES-H02 and the reference chronologies when the first ring date is 1567 and the last ring date is 1708

Reference chronology	t-value
Old Hall, Church Warsop, Nottinghamshire;	6.0
Oak House, West Bromwich, Sandwell, West Midlands	5.7
Ship Inn, Cockermouth, Cumbria	5.3
Low Winskill, Langcliffe, Settle, North Yorkshire	4.9
Dandra Garth, Garsdale, Cumbria	4.7
Turton Tower, Blackburn with Darwen, Lancashire	4.7

Table 5 Results of the cross-matching of sample SES-H11 and the reference chronologies when the first ring date is 1455 and the last ring date is 1549

Reference chronology	<i>t</i> -value
Little Morton Hall, Congleton, Cheshire	5.5
Dacre Hall, Lanercost Priory, Brampton, Cumbria	5.1
Oughtibridge Hall, Sheffield, West Yorkshire	5.2
Cartledge Hall, Holmesfield, Derbyshire	4.9
Row Ridding Farm, Broughton-In-Furness, Cumbria	4.9
All Hallows Church, Kirkburton, West Yorkshire,	4.8

Table 6: Results of the cross-matching of sample SES-H14 and the reference chronologies when the first ring date is 1500 and the last ring date is 1619

Reference chronology	<i>t</i> -value
Hill Hall, Theydon Mount, Essex	5.5
St Nicholas's Church, Fyfield, Essex	5.3
Flore's House, Oakham, Rutland	4.9
St Andrew's Church, Wimpole, Cambridgeshire	4.7
St Anne's Chapel, Norton St Philip, Somerset	4.6
Oakham Castle, Oakham, Rutland	4.5

Site chronologies SESHSQ01 and SESHSQ02 are composites of the data of the relevant cross-matching samples as seen in the bar diagram, Figure 3. These composite data sets produce 'average' tree-ring patterns where the possible erratic variations of any one individual sample are reduced and the overall climatic signal of the group is enhanced. These 'average' site chronologies are then compared with several hundred reference patterns covering every part of Britain for all time periods, cross-matching with a number of these only at the date span indicated.

Samples SES-H02, H11, and H14 have been compared individually with the reference chronologies.

The Tables give only a small selection of the very best matches as represented by '*t*-values' (ie, degrees of similarity). It may be noticed from this that the results are well in excess of the value of $t=3.5$ usually taken as the minimum acceptable level for satisfactory dating.

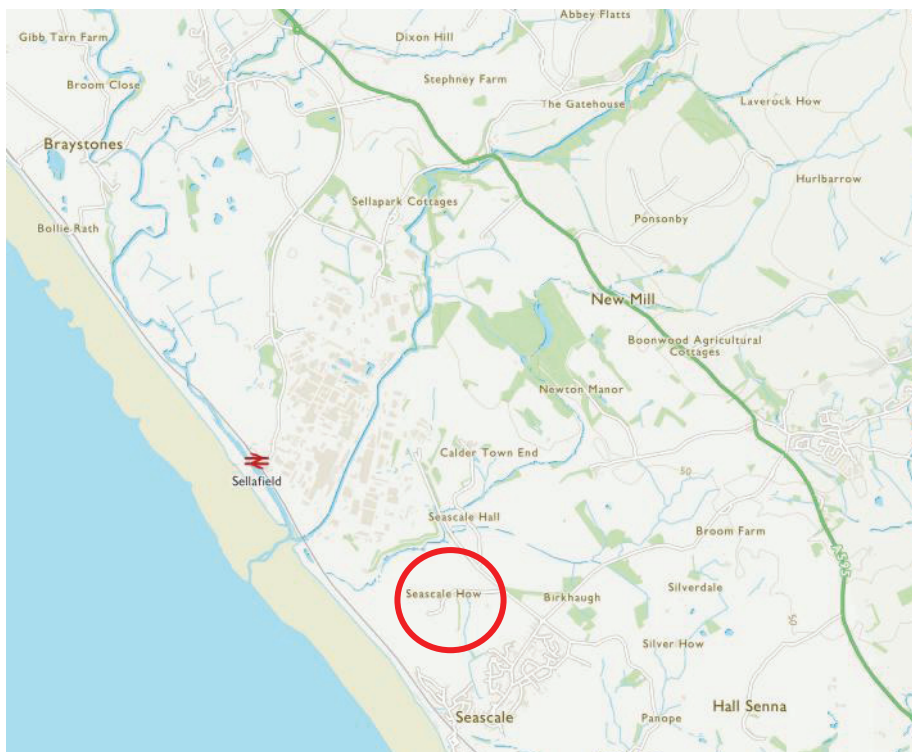
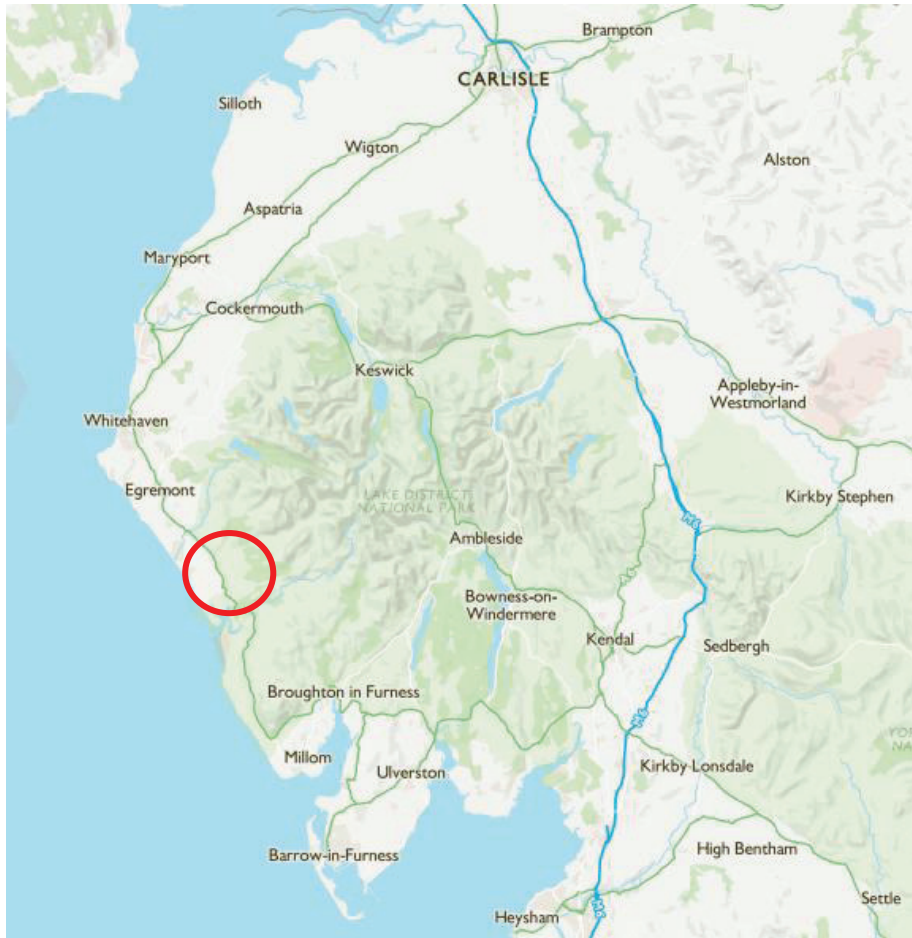


Figure 1a/b: Maps to show approximate location of Seascale Hall



Figure 2a/b: View of rooms G1 (top) and F4 (bottom) to help locate sampled timbers (see Figs 3a/b & Table 1)



Figure 2c/d: View of rooms G5 (top) and G7 (bottom) to help locate sampled timbers (see Fig 3c & Table 1)



Figure 3a: Plan of ground floor rooms to help locate sampled timbers (see Table 1) (after Greenlane Archaeology Ltd)

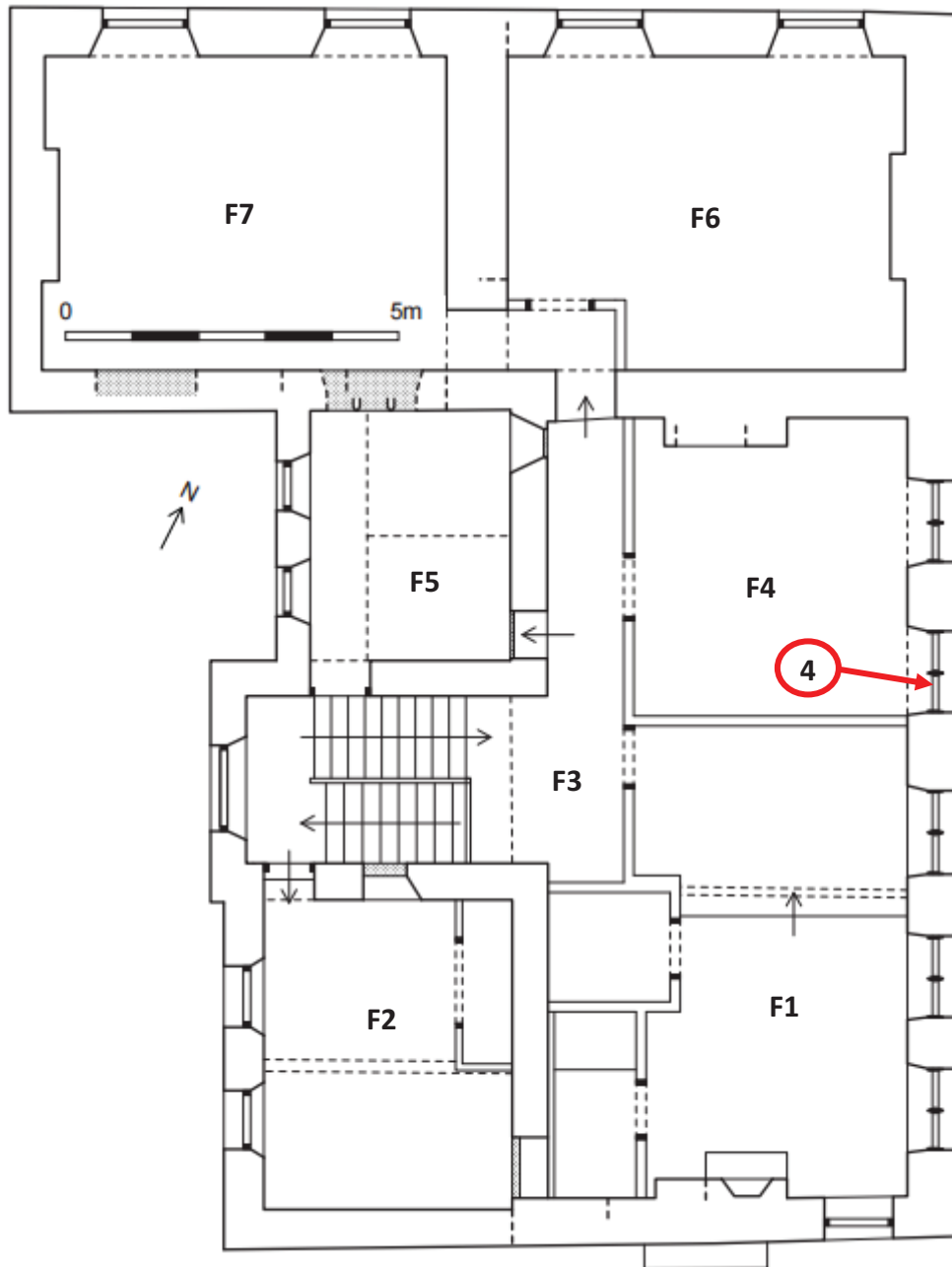


Figure 3b: Plan of first floor rooms to help locate sampled timber (see Table 1) (after Greenlane Archaeology Ltd)

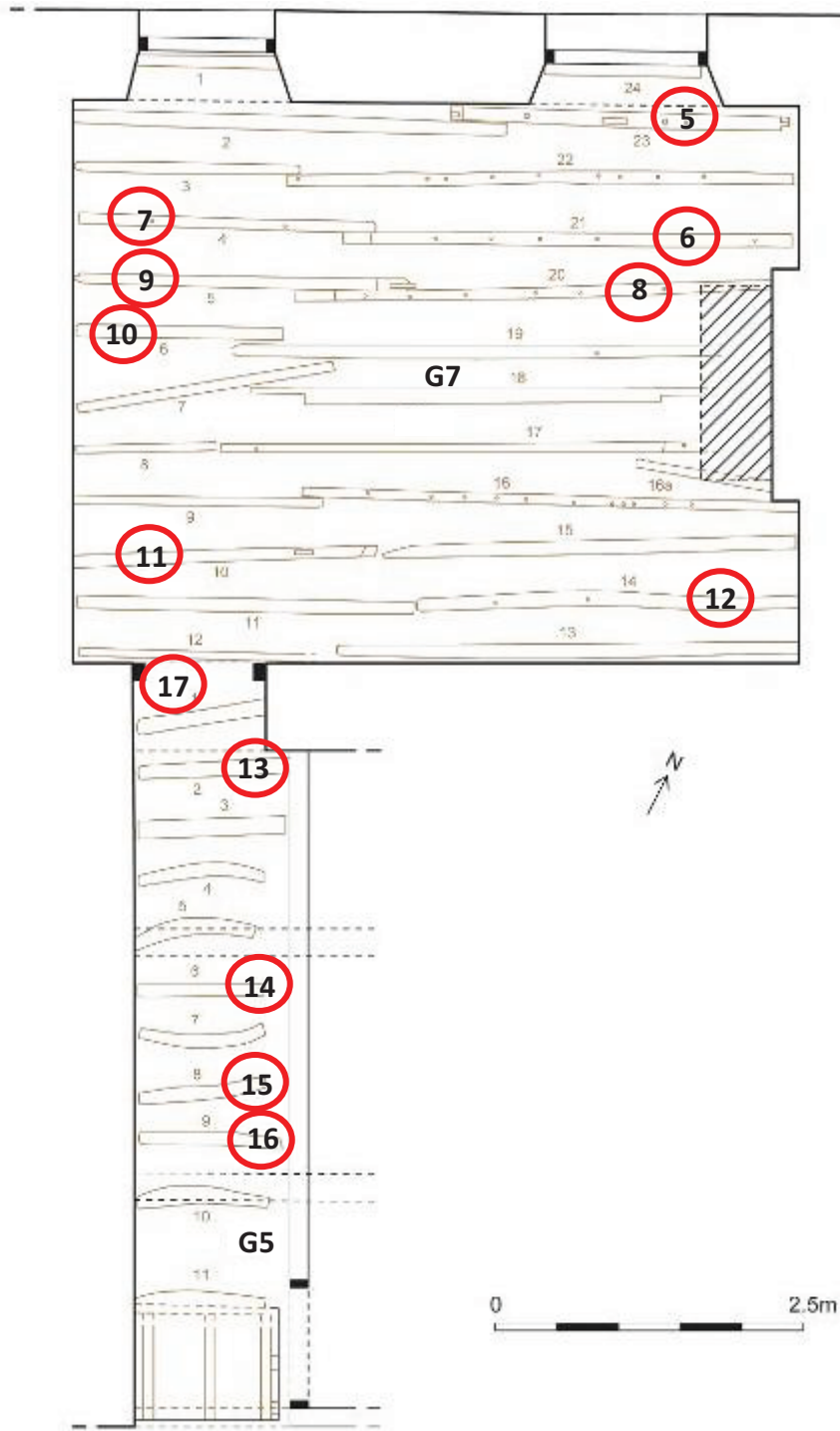
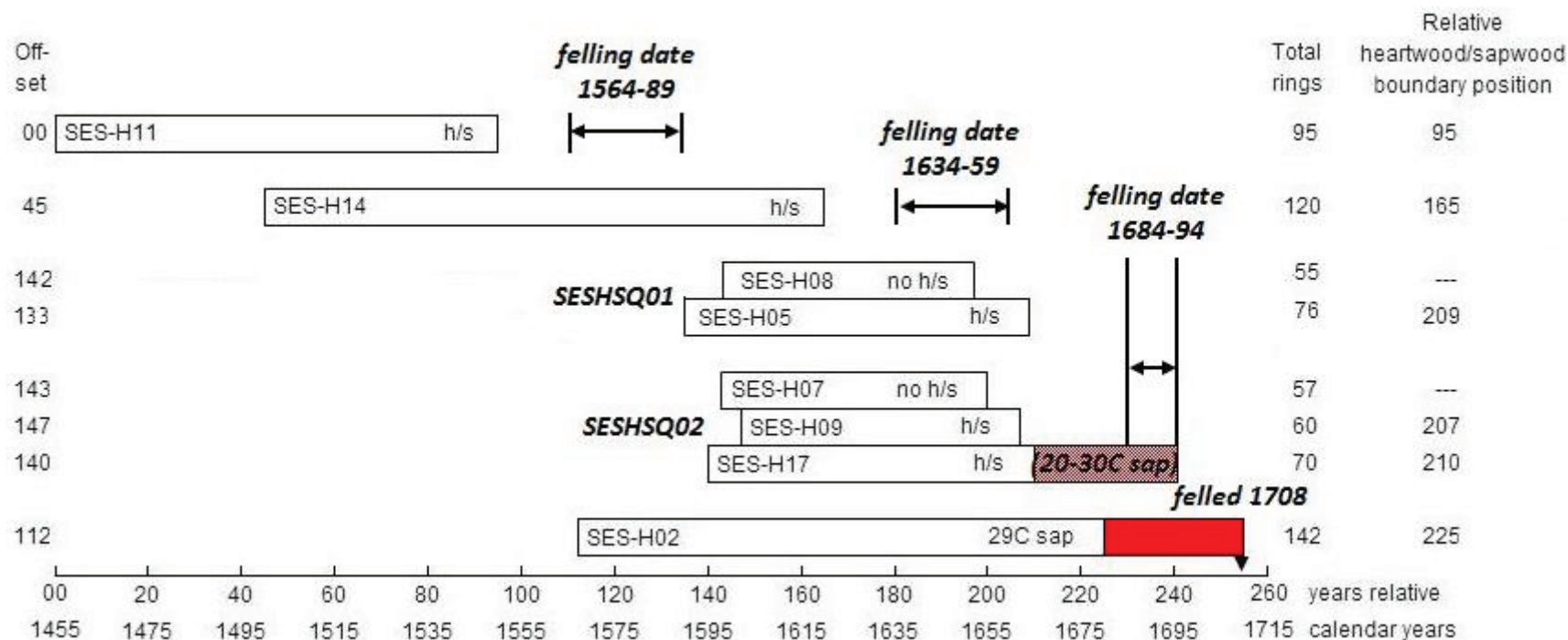


Figure 3c: Plan of the floor joists to rooms G5 and G7 to help locate sampled timbers (see Table 1) (after Greenlane Archaeology Ltd)



White bars = heartwood rings; Filled bars = measured sapwood rings; Hatched bars = estimated unmeasured sapwood rings; h/s = heartwood/sapwood boundary, i.e., only the sapwood rings are missing; C = complete sapwood is retained on the sample; where dated, the last measured ring date is the felling date of the timber

Figure 4: Bar diagram showing all samples (dated either as a component of a site chronology (SESHSQ01 & SQ02) or individually (SES-H02, H11, & H14)) at their relative dated positions.

The component samples of site chronologies SESHSQ01 and SESHSQ02 are shown here at relative off-set positions where the growth ring patterns of the constituent cores cross-match with each other, the similarity being caused by the constituent trees used for each group of beams having grown at the same time and place as each other (although it would appear that the trees for each group grew in different places). The data of the

measured ring widths of the constituent samples have been combined to form two 'site chronologies' which have then been dated by comparison with the 'reference chronologies' (see Tables 2 and 3). Although not cross-matching with either site chronology, or with each other, the three individually dated samples are also shown at their relative dated positions.

A number of samples retain the heartwood/sapwood boundary, this meaning that although they have lost all their sapwood rings, it is *only* the sapwood rings that are missing. By taking the date of the heartwood/sapwood boundary, and allowing that most oak trees have between a minimum of 15 sapwood rings and a maximum of 40, a felling date range may be calculated within which it is most likely that the cutting of the tree took place. One individually dated sample, SES-H11, from a floor joist in room G7, has a felling of some point between 1564 at the earliest and 1589 at the latest, while another timber, represented by the individual sample SES-H14 from a joist in room G5, has a felling of between 1634 at the earliest and 1659 at the latest.

Within site chronology SESHQ02, one sample, SES-H17, retains a number of sapwood rings which, because of their decayed state, cannot be reliably measured, this sapwood probably being complete to the final growth ring of the tree before felling. It is estimated that there are between 20–30 such sapwood rings. Given that the last measured, heartwood/sapwood, ring on this sample is dated 1664, this would suggest that this timber (and probably all the others of similar date) were felled at some point between 1684 at the earliest and 1694 at the latest.

One sample, SES-H02, retains sapwood complete to the bark. The last measured ring on this sample, and thus the felling of the tree, is dated 1708.

It will be seen from the bar diagram, and from Table 1, that there is some overlapping, to a greater or lesser extent, in the date spans of the two site chronologies and the three individually dated samples. There is, however, no, or only very low or insignificant, cross-matching of the growth patterns of these samples in their overlapping portions (hence their not all being combined into a single data-set). This would suggest that although there is some overlapping period of growth, the trees represented by this programme of sampling were growing in completely different woodlands and are probably from varied sources.