

# Woolsington Hall

*Woolsington, Tyne and Wear*

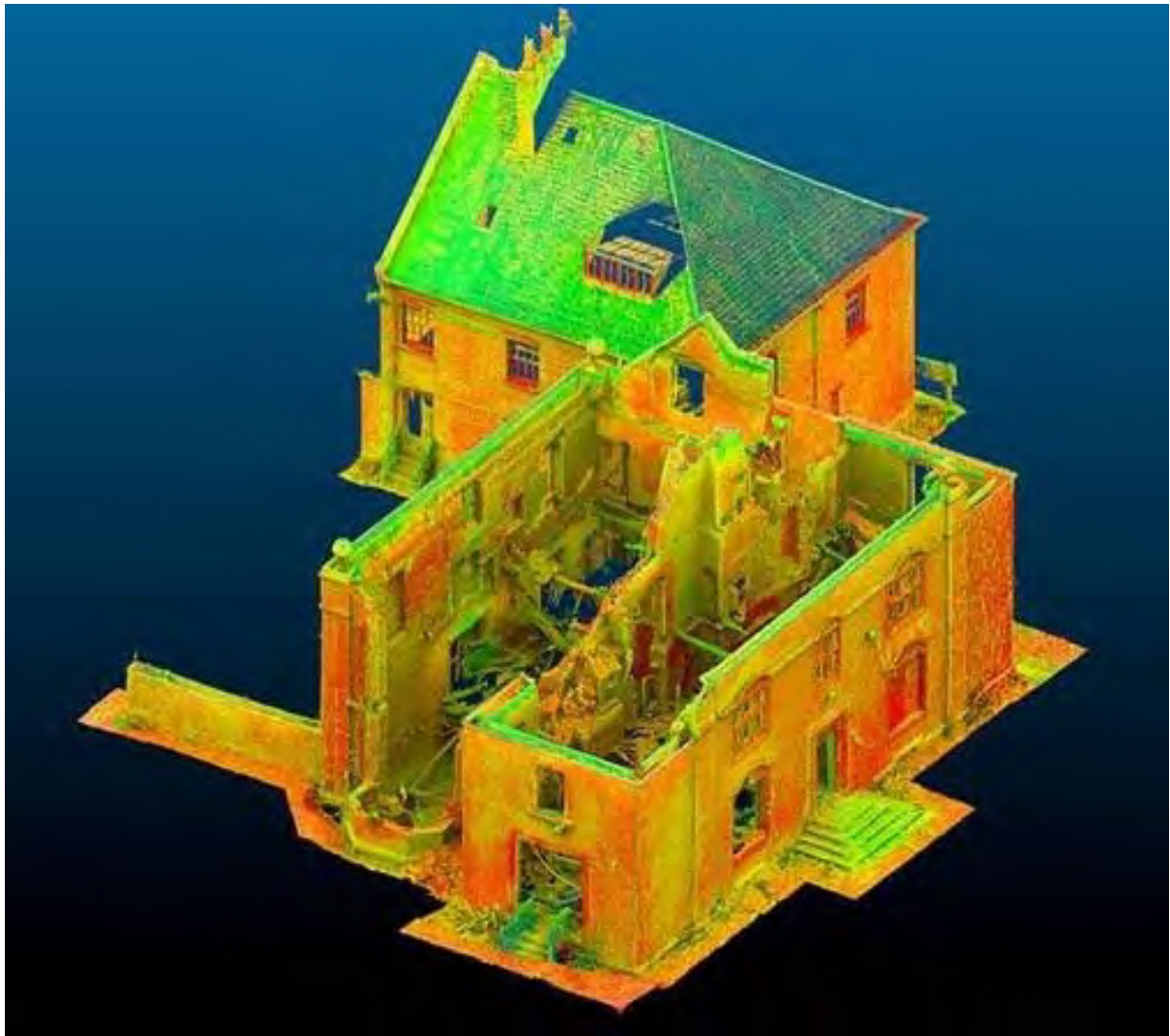
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Post-fire recording works, clearance and materials recovery

Project AA.1964

for Cameron Hall Developments

*May 2017*



**Addyman Archaeology**

Archaeology   Heritage Consultancy   Architecture



*Plate 1 Fire in progress – evening of 29 December 2015 (Tyne Tees - ITV.com)*



*Plate 2 Aftermath – January 2016*

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# Woolsington Hall

## Woolsington, Tyne and Wear

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### Post-fire recording works, clearance and materials recovery

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# Woolsington Hall

## *Woolsington, Tyne and Wear*

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### Post-fire recording works, clearance and materials recovery

#### Project AA.1964

#### *Executive Summary*

Addyman Archaeology undertook emergency and more general recording of Woolsington Hall, Woolsington Northumberland following a catastrophic fire on 29 December 2015. The works were undertaken on behalf of Cameron Hall Developments following discussions with Historic England and representatives from Newcastle City Council Archaeology Service. The works included an initial scanned and rectified digital photographic and general photographic record of the building prior to demolition of unsafe areas. A programme of ongoing monitoring and recording was carried out during downtakings, including recovery of materials and the completion of a comprehensive record of the interior of the building in advance of its redevelopment. Laser survey, photogrammetry and rectified imagery were utilised in order to create accurate phased survey drawings. Further works are anticipated during future phases of the redevelopment of the Hall and wider estate.

#### *1. Introduction*

##### *i. General*

The historic core of Woolsington Hall, Tyne and Wear, was mostly destroyed by an arsonist's fire on the evening of 29 December 2015. Addyman Archaeology carried out emergency recording work immediately after the blaze and a programme of more general recording and monitoring as access permitted and as the site was progressively cleared. The works were undertaken on behalf of Cameron Hall Developments (contact, Paul Mackings) and in consultation with IDP Partnership, project architects (contact, Roger Copestake). Development of a project design followed discussion with Historic England (contact, Martin Lowe) and representatives from Newcastle City Council (Lisa Clark, Planning Officer) and Tyne & Wear Archaeology Service (Jennifer Morrison, Archaeology Officer) as to the extent of works required and the best approach to be undertaken. A Written Scheme of Investigation for the recording works was proposed: *Woolsington Hall - post-fire - WSI (January 2016)* and accepted – *Appendix A.i*, with a further amendment as works progressed, in May 2016 – *Appendix A.ii*.

This report summarises the present state of archaeological recording works within the fire-gutted structure, carried out between 02 January 2016 and April 2017. It is issued as an interim document at a key stage of the rescue and repair process – a pause in site works and pending an application for further downtakings for which supporting information deriving from the archaeological survey is particularly relevant. This information has been requested by the statutory consultees to the project – Tyne and Wear Specialist Conservation Team (contact, Lisa Clark, Planning Officer) and Archaeology Service (Jennifer Morrison), and Historic England (contact, Martin Lowe, Historic Environment Advisor).

This report is prepared in accordance with standard Addyman Archaeology procedures and in line with the guidelines established by the Chartered Institute for Archaeologists (CIfA). A record of the watching brief has been deposited with the Online Access to the Index of Archaeological Investigations (OASIS) website hosted by the Archaeological Data Service (OASIS ID addymanal- - 284892).



Plate 3 Fire in progress – evening of 29 December 2015  
(ChronicleLive - <http://i4.chroniclelive.co.uk/incoming/article10666025.ece/ALTERNATES/s615b/JS79476600.jpg>)



Figure 1 General location



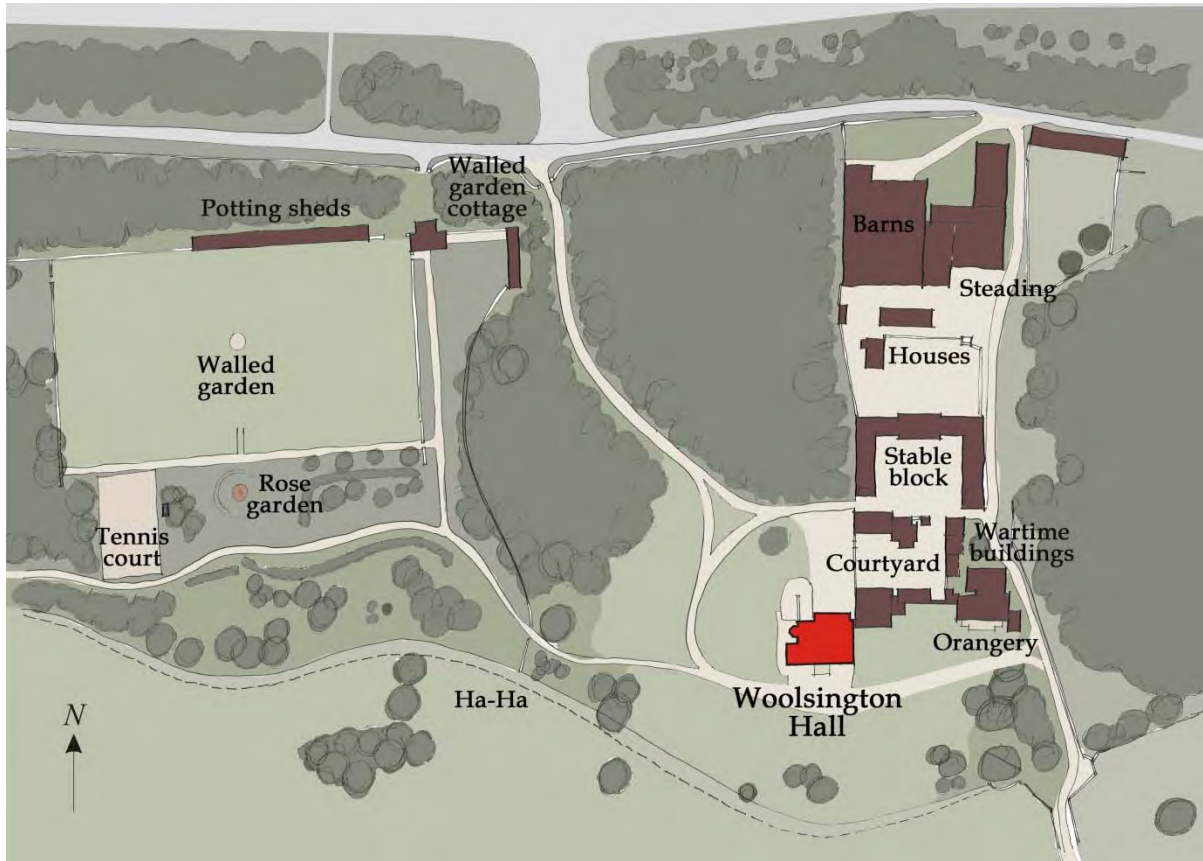


Figure 2 Site location – fire-damaged area indicated in red



Plate 4 Woolsington Hall in the early 20<sup>th</sup> century (postcard)

ii. Work carried out before the fire

Assessment of Woolsington Hall - and associated historic building survey work - has gone through a series of stages. Before the fire of December 2015 various preliminary recording works had taken place, including general photographic surveys by Simpson and Brown Architects, and architectural assessment for a Conservation Plan (Simpson and Brown with Addyman Archaeology, June 2013).



Figure 3 Phase plan at ground floor level – a preliminary interpretation from the 2013 Conservation Plan, with amendment

A preliminary programme of building recording at Woolsington Hall and estate was then carried out by Addyman Archaeology in June – July 2014, required in advance of submission of a planning application for redevelopment works. The level of recording required for each building was specified by Jennifer Morrison, Archaeology Officer, Tyne and Wear Specialist Conservation Team, (3 February 2014).<sup>1</sup> The requirement for works to be carried out at the pre-Planning stage was as specified by Lisa Clark, Planning Officer, Newcastle City Council (17 April 2014). The resulting report provided detailed supporting information that was intended to feed in to the Cultural Heritage chapter of a forthcoming Environmental Statement for the site.

Also accompanying the Environmental Statement was a detailed Desk-Based Assessment and historical study that examined early documentary evidence for the estate including the hall itself (Addyman Archaeology, April 2014).

The pre-Planning requirement included recording works to be carried out on elements of Woolsington Hall where the proposed scheme for the structure involved new interventions that might affect the

<sup>1</sup> Specification for Archaeological Building Recording of Woolsington Hall and other buildings in Woolsington Park, Newcastle upon Tyne

historic fabric. While a considerable number of individual interventions were proposed throughout the structure in general terms these had been designed so that they would have minimal physical impact on the core fabric of the 17<sup>th</sup> century hall, rather they would only affect the secondary interventions and additions made to the core structure.

The existing architects' plan set was marked up with analytical details, phasing data, etc. for each area. A more detailed drawn record was carried out as appropriate; this largely consisted drawn elevations at 1:20 or 1:50. The reporting of the analysis of the hall at that stage was necessarily an interim account, pending the more general survey required during building works, when much of the early fabric of the structure was likely to be revealed (particularly during render removal to the exterior). The written descriptions were thus limited to those areas targeted for recording – i.e. where there was proposed intervention. Context numbering was also applied to the areas where recording was carried out. A comprehensive general photographic record was made of the building in its as-existing state.

## 2. *Post-fire - methodology*

### i. *Background information gathering*

An initial review and gathering of pre-existing records of the hall was undertaken, including Simpson and Brown's architectural records and survey data, as well as that of Addyman Archaeology. The former included much pre-fire detailed photography of the interior of the hall. The latter included a selective survey of areas of the interior; a phased plan at each level; and a systematic room-by-room general photographic coverage. These sources have been collated. A summary of previous photographic survey work is included as *Appendix B.i*; location plans for each pre-fire photographic image are still to be completed.

### ii. *Comprehensive Photographic record before down-takings*

A comprehensive photographic record of the gutted building was required to be undertaken at the earliest stage following the fire, before further collapse of the surviving building shell and in advance of controlled demolition or any controlled clearance. The entirety of the roof structure and upper floors had been destroyed and parts of the masonry structure had also collapsed during the progress of the fire, in particular the south-west gable and walling below.

General photography was completed on 2 and 4 January 2016 – in both instances in poor weather conditions and with only partial success (in terms of photographic resolution).

Emergency down-taking of the parts of the structure at risk of imminent collapse was mostly by means of a mechanically-operated telescopic grab. A photographic record was maintained over these initial stages of the demolition and stabilisation process.



*Plate 5 South-east gable before demolition on 9 January 2016, illustrating its perilous state*



*Plate 6 Mechanical demolition*



*Plate 7 South-east gable during dismantling*

Following these initial works a greater degree of site access became possible. The exterior of the building could be approached more closely and the interior could be inspected and further demolition executed manually by means of a crane-suspended basket. More comprehensive photography was carried out at that stage and this method repeated at stages as demolition progressed until safe access to the interior was eventually established.



Plate 7 Merged photography – taken from suspended basket

### iii. Remote digital recording

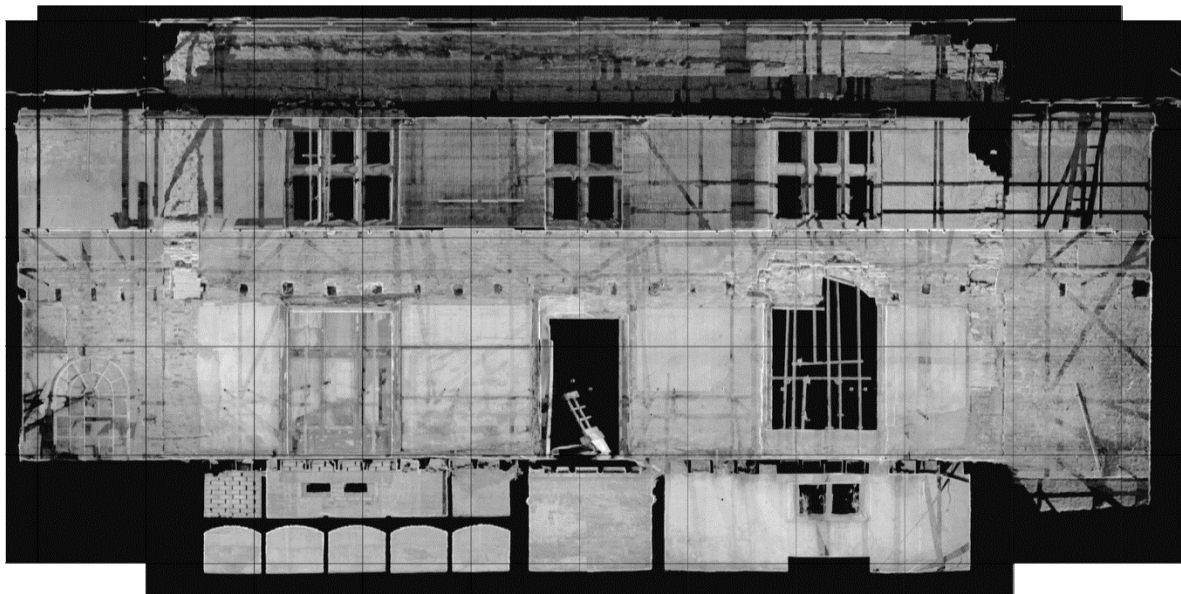
A more systematic preliminary recording of the building shell was achieved by a combination of techniques - laser-scanning from the exterior; remote data-capture from a UAV; and with additional high resolution digital photography of much of the interior by means of a long extendable pole run through the building's external openings. In summary the following were completed:

- Laser-scanning of the external elevations of the fire damaged building and the internal elevations was undertaken to the extent possible without entering the building.
- The external elevations of the fire damaged building and the internal elevations were photographed to the extent possible without entering the building.
- The internal elevation of the fire damaged building was photographed with a camera mounted on a 10m Hiperpod Premier mast to allow photography to be taken at height through doors, windows and holes in the external wall.
- Vertical and oblique photography from a camera mounted on an unmanned aerial vehicle (UAV) was undertaken using an AscTec Falcon 8. This will fly at low level over the building to obtain the vertical and oblique photography.
- A registered point cloud for the exterior and interior of the building was produced from the survey imagery and photography (see report cover) and was used as the metric framework for the production of orthophoto based plans and elevations. This has been further processed and augmented with further rectified photographic imagery for parts of the structure that were either inaccessible or debris-obscured at the time of the initial data capture.

- Further visits included a second comprehensive scan exercise of the lower parts of the structure, including the basement areas, following the majority of clearance.



*Figure 4 Merged scan imagery – basement and ground floor levels overlain*



*Figure 5 Merged scan imagery – south-facing section*

*iv. Monitoring and recording during down-takings*

An archaeological monitoring presence was established to ensure appropriate recording was carried out as parts of the superstructure were dismantled (this generally for safety reasons) and as clearance of the interior progressed.

The watching brief during the dismantling of the dangerous parts of the structure involved, as far as feasible, the targeted recovery of individual architectural components. For particular structural elements, individual features such as fireplaces, and significant dressed stones, their former positions and/or constructional arrangements were recorded, and the individual pieces appropriately identified and set aside. A catalogue of recovered elements recording location, summary description, photographs etc. was maintained.

*v. Clearance of interior materials*

Clearance of the interior was carried out on an area-by-area basis by contractors MGL Demolition, with progress within the building dictated by the extent of safe access at a given time. Clearance was by a combination of mechanical lifting by crane of individual larger items such as fallen timbers, masonry blocks, etc., and by hand excavation. The latter was generally completed by 2-4 people feeding a conveyor-belt that then took material out to the exterior. The conveyor-belt was monitored at all times and archaeologically significant items recovered. The remainder of the material was sorted for recyclable material (such as early brick), and the residue mechanically transported to a skip.

Significant architectural fragments, eg dressed stonework, elements of fireplaces, etc. were stored on site, generally on pallets and taken into the stables interiors, for further study or possible reuse.



*Plate 8 Inspection of debris on conveyor-belt, excavated from within the basement area, July 2016*

For particular elements their former positions and/or order were recorded and their components properly marked and suitably stored. Considerable effort was put into reconstructing significant architectural features from recovered fragments – such as fireplace surrounds and the dressed stone elements of early windows. In this way the details and dimensions of a number of very significant features, some not visible or even known prior to the fire, were recovered and recorded.



*Plate 9 Fallen lintel and other elements of a 17<sup>th</sup> century fireplace*

#### *vi. General recording works*

Following establishment of safe internal access by means of scaffold reinforcement and planked galleries, a more systematic record of the interior was undertaken. This included detailed drawn survey of particular features, further digital photography, a comprehensive hand mark-up of the digitally produced general architectural record drawings; and a full written and descriptive context record. These drawn and written records are still in progress, currently awaiting the next stage of access to lower parts of the structure that are still inaccessible on safety grounds – the instability of the central stacks and the presence of asbestos in the cellar areas.

The results of the work will include the production of a fully worked-up set of rectified images of the structure; a survey drawing set (annotated and phased); a narrative account of the structure that will provide a detailed description and an outline of its evolutionary history; and a fuller record of the monitoring and recording works undertaken. There will be a supporting compendium of metrical data, catalogued site records, etc.

A preliminary set of the merged scan data is included in this report in the form of plans, elevations and sections, as *Appendix C*. An interim set of digitised survey drawings is also included – see *Appendix D* – these are marked up in colour with a preliminary phasing assessment.

Recording work on site was led by Kenneth Macfadyen, and carried out during frequent site visits, and supported as required by Jenni Morrison, Andrew Morrison and Tom Addyman.



### 3. Results of archaeological works

#### i. Monitoring and recording during down-takings

Following the fire most of the structure was still standing to wall head and the central spine wall stood to the top of the chimneys. However, it was clear that much of this was precarious and in areas undermined by localised collapses.

In order to allow safe access to the structure unsafe portions had to be dismantled. This was undertaken in a number of stages; the first was the reduction of the upper parts of the chimney stacks by contractors Thomson's of Prudhoe as part of the initial making-safe exercise. Following these initial works further areas of masonry were identified as in danger of collapse, most notably the central spine wall that carried all the fires, flue-stacks and chimneys above. The upper parts of this structure were subsequently dismantled in stages in part by hand and in part mechanically, this as and when its masonry should signs of instability during the clearance operation. The manual demolition works were undertaken from above using a basket suspended from a crane. Where possible cast iron fireplace furniture and their masonry surrounds were removed intact and carried down in the basket.

It was not possible to examine in detail the upper parts of the chimneys; these had been cement-rendered after they emerged through the roof. However it was possible to record the lower structure of the two stacks in some detail. Parts of these had been drawn before the fire and otherwise recorded photographically. Their brick structure had been laid bare within the attic storey; however on the floors below they were obscured by plasterworks and later linings. Most of the latter had been destroyed by the fire and the brickwork and masonry beneath laid bare. Consequently it was possible to record the stacks in detail, and to analyse their phasing and internal structure as they were being dismantled. This analysis served to confirm their significance as principal components of the 17<sup>th</sup> century house but also provided evidence of secondary work such as the installation of additional fireplaces and flues in the later 18<sup>th</sup> century, and various fireplace reductions subsequently.



*Plate 10 east gable post fire pre collapse /demolition*

With the gables, arranged double-pile in pairs to east and west, the main collapses during the fire were associated with major historic slappings-through of the masonry walling at ground floor level (to the south-west and south-east) or at both levels (as with the bay window to the north-west). To the south-east where the southern ground floor room had been extended, the masonry above had been supported by a major timber beam which failed in the fire, being completely burnt through, and the masonry immediately above at first floor level had fallen. This weakened the gable that still precariously bridged the void above to such an extent that it subsequently collapsed at the first attempt at dismantling.

To the south-west the southern ground floor room had also been extended outwards; here the supporting timber beam had also failed, in this case bringing down all of the walling above including the gable. The north-west gable had had much of the lower two stories slapped out to fit a bay window in the 19<sup>th</sup> century, as described, this leaving the attic level hanging precariously following the fire. This gable was dismantled in the first phase of making the building safe; it was possible to recover the coping stones.



*Plate 11 west gable north half post fire*



*Plate 12 composite photograph of central spine post-fire*

Following the building being made safe for initial access, clearance of the interior by MGL Demolition commenced. During these works the vibrations of the clearance made further parts of the masonry unstable, the central spine wall especially. This was consequently reduced down to first floor ceiling level. Later further localised demolitions were also undertaken to maintain access safe during clearance.



Plate 13 The masonry of the spine wall after the first stage of demolition



Plate 14 The masonry of the spine wall following further reduction

ii. *Clearance of interior following safe access*

Following the making safe of the masonry the inside of the main external walls was covered with debris netting and the clearance began. This clearance was undertaken by hand with debris shovelled onto a series of conveyor belts; these ran into the bucket of a machine and were then moved to either a skip for rubbish or the brick pile. The demolitions had covered the fire debris with a deep layer of brick and mortar, which massively increased the amount of debris to be removed.



*Plate 15 Rubble collapse within Woolsington Hall*

Large pieces of interest were picked out from the rubble by the contractors during the clearance and put aside within the building. Smaller pieces were picked off the conveyor and stored. The recovered pieces were examined by the Archaeologist and recorded with a rough location of the find spot, basically which room it came from. It became quickly apparent that because of the intensity of the fire almost all interior detail had been completely consumed leaving relatively little fabric other than burnt stone and metal. Only the occasional fragment of moulded timberwork survived the blaze.

A basic record of features and finds was maintained. This comprised a list of finds and a photograph of each find with the find number visible in the photograph. Small finds were numbered and bagged. The masonry of the windows from the collapsed gables was gathered up and reconstructed on the ground showing almost 100% recovery of the parts.



Plate 16 north half pre clearance looking east



Plate 17 south half pre clearance looking west

The reusable bricks were separated from the general spoil and stored in a pile for eventual reuse in the reconstruction; most of these came from the demolition of the chimney stacks and a high percentage were broken or damaged, however a large number of reusable whole and half bricks were recovered.

### iii. Recovery of roof

Of the timber that survived this was almost universally heavily charred at best and mostly burnt right though leaving little detail. The entire roof and attic was represented by only a few remnant pieces of timber associated with major iron repairs, this again reflecting the ferocity of the fire.

The roofing slate was very noticeable by its absence from the deposits mostly represented by small fragments and only a small handful of partial slates; the majority were evidently completely destroyed in the fire. A small number of copper slating nails were seen on the conveyor belt. The roof ridges (find no 067) were all heavily heat affected and shattered into small friable lumps of coarse grained sandstone but a few were intact enough to reconstruct the profile (*figure 1*).

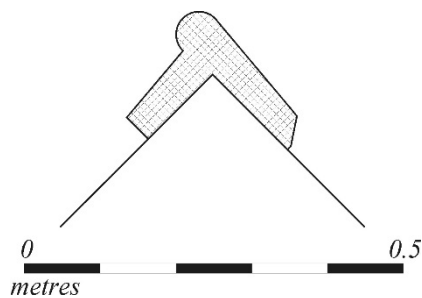


Figure 6 roof ridge profile (find no 067)



Figure 7 roof ridge profile (find no 067)



Plate 18 Roof ridge before the fire

iv. Recovery of Features and fireplaces – Second Floor/Attic

Much of the attic/second floor had been stripped back to masonry or timber before the fire during roof repairs leaving little to be recovered apart from the fireplaces.

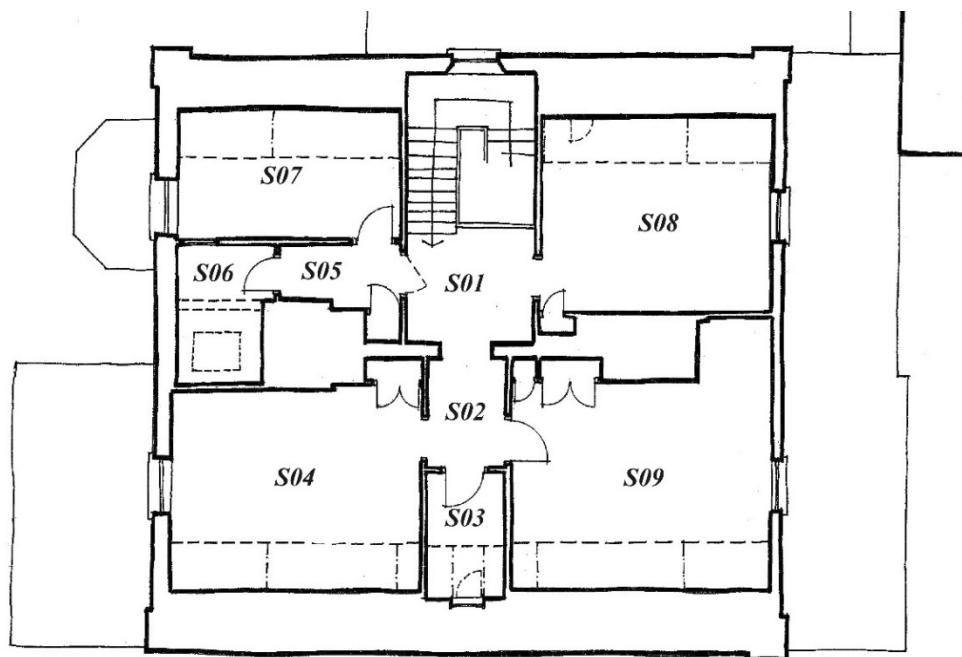


Plate 19 Second floor room numbering (north to top)



Plate 20 S09 fireplace in situ



Plate 21 S09 fireplace as recovered (find no 019)

a. Room S09

The stonework of the window surround in the east wall was largely recovered in pieces, all fire-damaged but enough to identify this (and the other attic windows) as not having the same detail as the surviving early windows on the floors below. Unlike those the window was not mullioned and may have been replaced (or modified) when the roof configuration was adjusted in the 18<sup>th</sup> century; evidence for this can be seen where one of the jambs was cut down from an early sill with matching profile to the original windows.



Plate 22 Room S09 - window lintel and sill (find no 106)



Plate 23 Room S09 - jamb stone showing evidence of reuse, cut down from an early sill (find no 106)

b. Room S08

The cast iron fire within the earlier fireplace was partly overlain by an even later plain polished stone surround; the lintel of this had fallen or had been removed prior to the fire. Heavily fragmented remnants possibly of this surround were noted in the debris but not enough to reconstruct it or comprehensively identify them as the surround for this fireplace.

The gable window to the east was largely recovered in pieces (find no. 100) but all were recovered apart from parts of the shattered lintel.



Plate 24 S08 fireplace in situ



Plate 25 S08 fireplace as recovered (find no 18)





Plate 26 room S08 window (find no 100)



Plate 27 room S04 window (find no 098)

c. Room S07/6/5

This fireplace within the stack on the south side of this area sat within a plain polished sandstone surround; again this surround was very fragmented and only partially recovered. The fireplace ironwork was recovered in tact during controlled demolition (find 007).



Plate 28 S07/6/5 fireplace in situ



Plate 29 S07/6/5 fireplace as recovered (find no 007)

d. Room S04

The fireplace within the stack on the north side of this room was fronted with carved stone in to which the iron work sat. The stone shattered into small pieces as seen in post-fire photography prior to demolition and was not recovered, but the ironwork of the hob-grate (find no 081) survived and was recovered. The masonry of the window within the gable wall to the west was mostly recovered, though again heavily heat affected and shattered; the feature was reassembled and recorded.



Plate 30 S04 fireplace in situ



Plate 31 S04 fireplace as recovered (find no 081)

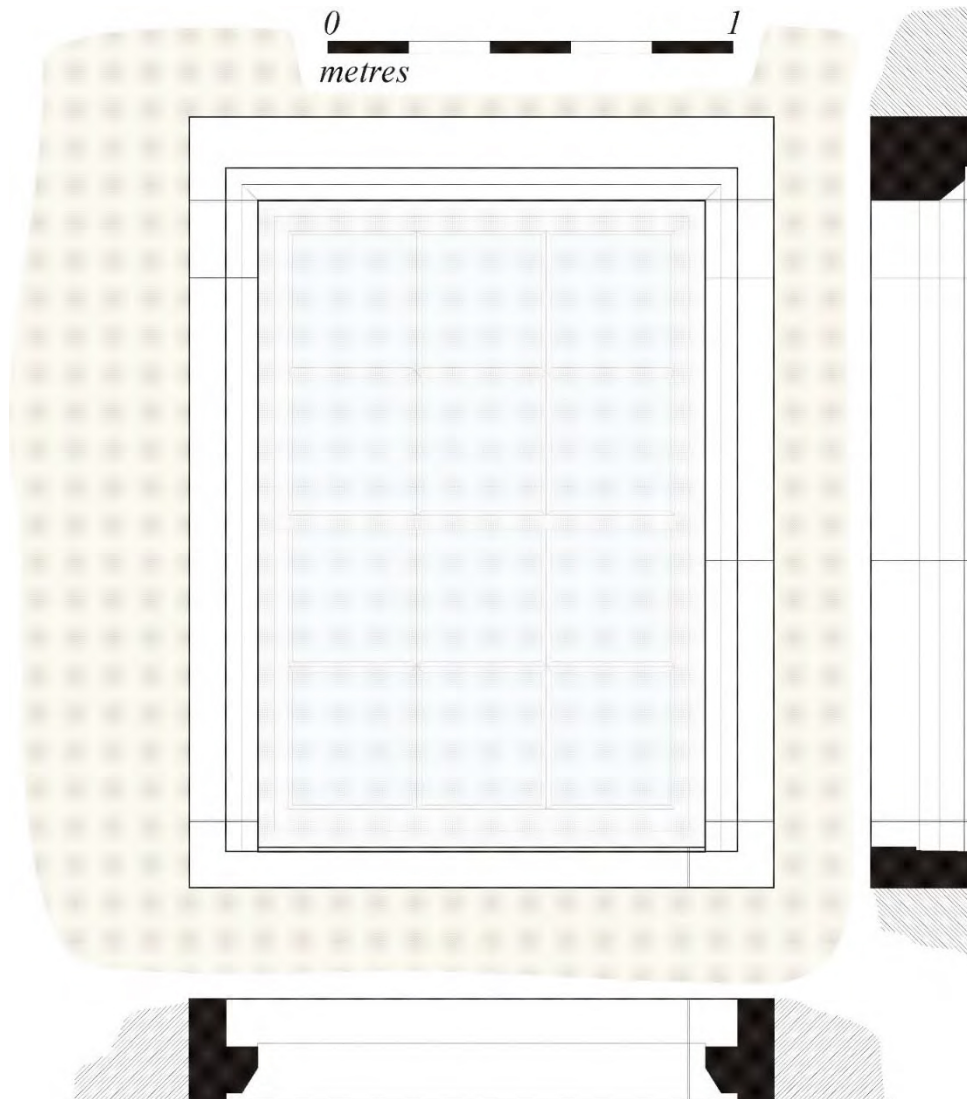


Plate 32 attic window reconstruction

v. Recovery of features/fireplaces – First Floor

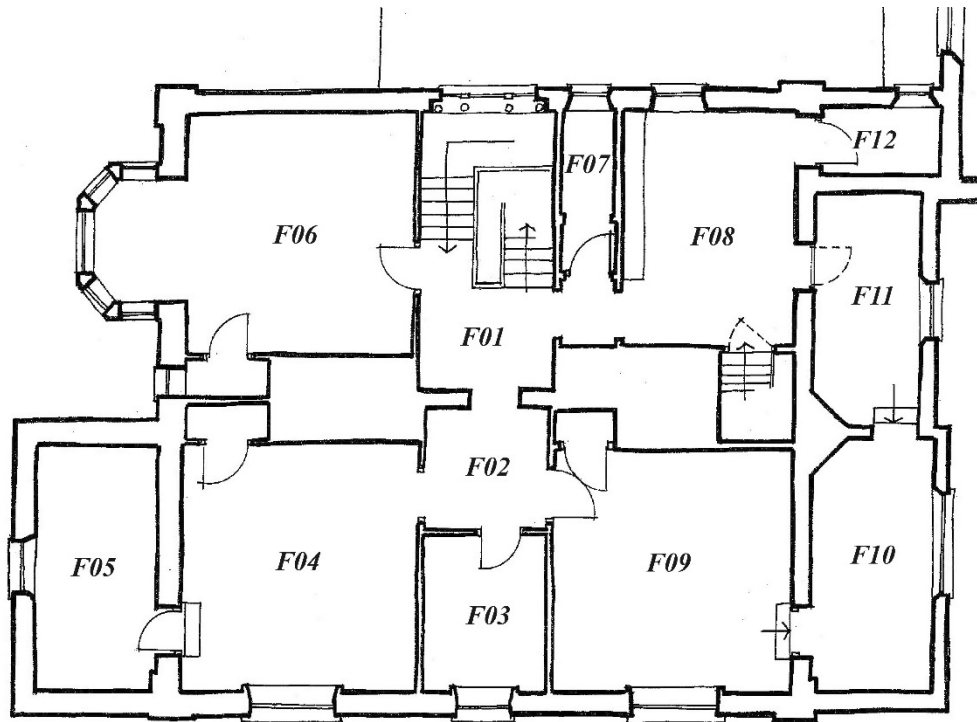


Plate 33 First floor room numbering

a. Room F04

The timber surround of the fireplace on the north wall of room F04 had been lost but much of its polished stone surround was recovered in fragments (find 096); the cast iron fire grate (find 020) was also recovered, in two pieces, during the demolitions, as were most of the jambs and lintel.



Plate 34 room F04 fireplace and surround in situ



Plate 35 room F04 fireplace and surround in situ post fire



Plate 36 F04 fireplace as recovered (find no 020)



Plate 37 F04 fireplace surround (find no 096)

The blocked up original mullioned window within the west wall of room F04 had been visible within the later westwards extension (room F05) before the fire. This fell when the walling and gable above collapsed. Its masonry (find 097) was recovered but the pieces were mostly broken. However by piecing the bits together a record and reconstruction of the original form was made from measurements from the fragments.



Plate 38 The former window within the west wall of Room F04, as seen in situ before the fire within room F5 (find no 097)



Plate 39 Room F04 original window remnants as recovered (find no 097)

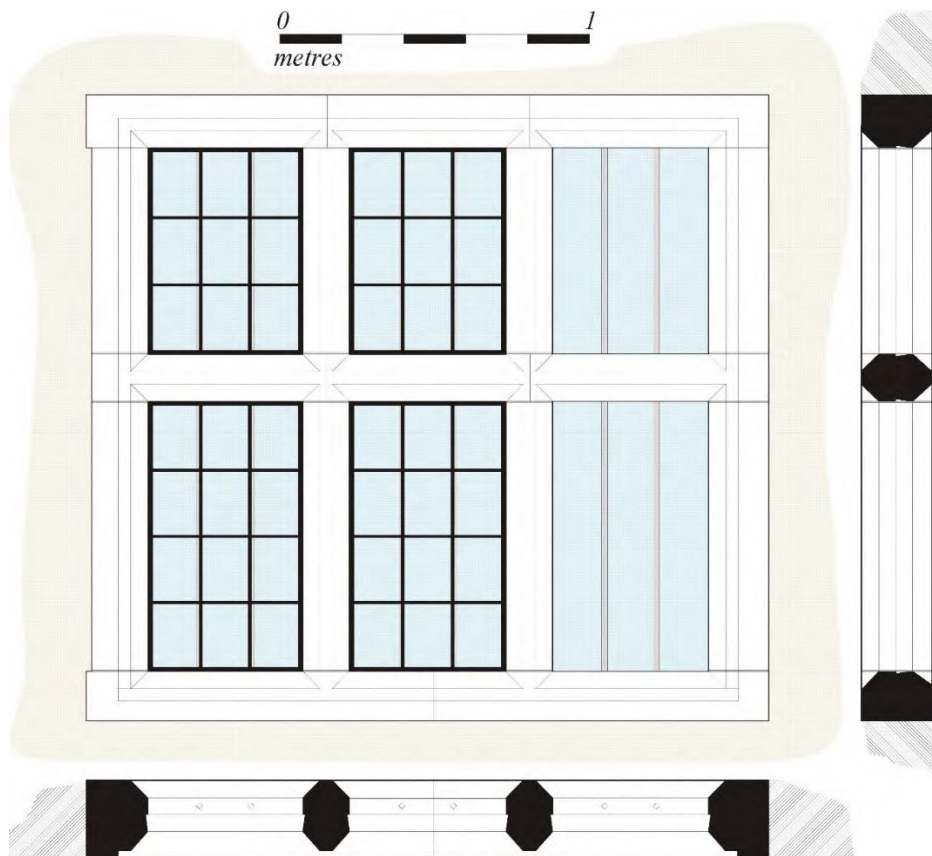


Figure 8 Room F04 original window reconstruction (find no 097)

b. Room F06

The fireplace on the south wall of room F6 (find 022) appeared to have had a timber surround but this was revealed to have been of grey, veined marble painted to look like wood. This fireplace collapsed into the basement below during the fire and was buried beneath the demolition rubble, this collapse breaking the cast iron work within and the marble slips recovered in multiple fragments.



Plate 40 F06 fireplace in situ



Plate 41 F06 fireplace as recovered (find no 022)



Plate 42 F06 marble surround? (find 023)



Plate 43 F06 marble surround detail (find 023)

Also fallen into the basement was a massive stone fireplace lintel of 17<sup>th</sup> century character (find 060); this had evidently been concealed behind plaster; parts of the jambs of the feature were also recovered.



Plate 44 F06 large stone lintel

c. Room F08 (linen room)

Formerly existing along the west side of room F08 was a full-length linen press, possibly of later 19<sup>th</sup> century date. Although wholly destroyed a number of its door/drawer locks were recovered.



Plate 45 F08 linen cupboard pre fire

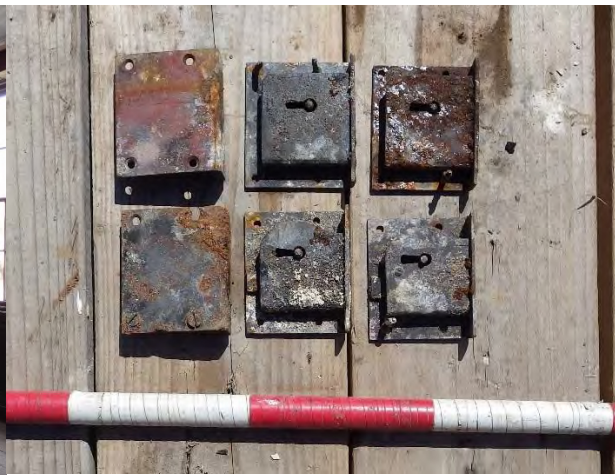


Plate 46 F08 remnants of linen cupboard

The walls within the room had been fully lined and plastered but following the fire and collapse/demolitions a large stone fireplace surround was revealed on the south wall, this of the same character as that seen in F06 (find no 060), of late 17<sup>th</sup> century date. The stones of the feature were recorded in situ before that part of the chimneybreast was dismantled and the stones recovered.



Plate 47 F08 south elevation pre fire



Plate 48 F08 south elevation post fire , fireplace (find no 025) exposed



Plate 49 F08 stone fire surround recovered (find no 025)

d. Room F09

Before the fire the surround of the fireplace on the north wall of room F09 had already been removed; but it was clear from what remained of its interior that this must have been of 20<sup>th</sup> century date. During demolition this later work proved to be an infill within an original fireplace opening; the large side slabs of the original revealed still to be *in situ*.





Plate 50 F09 - modern fireplace infill



Plate 51 F09 - fireplace under demolition, revealing rear of side slab of original

e. *Room F11*

Room F11 was an extension infilling the space between an earlier extensions to the south and the wing to the north-east. Before the fire this room had largely been stripped back to bare brick. This had exposed the remains of an original external window that had seen the secondary slapping of an entrance through into room F08. This feature had been more fully exposed by the fire; it was partly demolished during making-safe works. The recovered pieces of this window comprised one lintel section and one jamb stone; the remainder had been lost historically.

The blocked entrance in the north wall of the room proved to be a relic window within the south wall of the north-east range, latterly built over by this extension and converted into an entrance.

The corner brick fireplace at the south-west angle of the room was of plain character and had seen secondary bricking-up. It had been constructed within the cavity of an early window that had been central to the east frontage of the original mansion house. The interior parts of the feature were exposed during the demolitions.



Plate 52 room F11 pre fire



Plate 53 room F11 shows early window (find no 058)



Plate 54 room f11 (find no 058) recovered window remnants

f. Room F10

Similar to F10, the corner fire had a polished plain stone surround which would have disintegrated in the fire, cast iron fire surround was not recovered and possible stones of the original window buried in the wall were not seen in the rubble

vi. Recovery of features and fireplaces - Ground floor

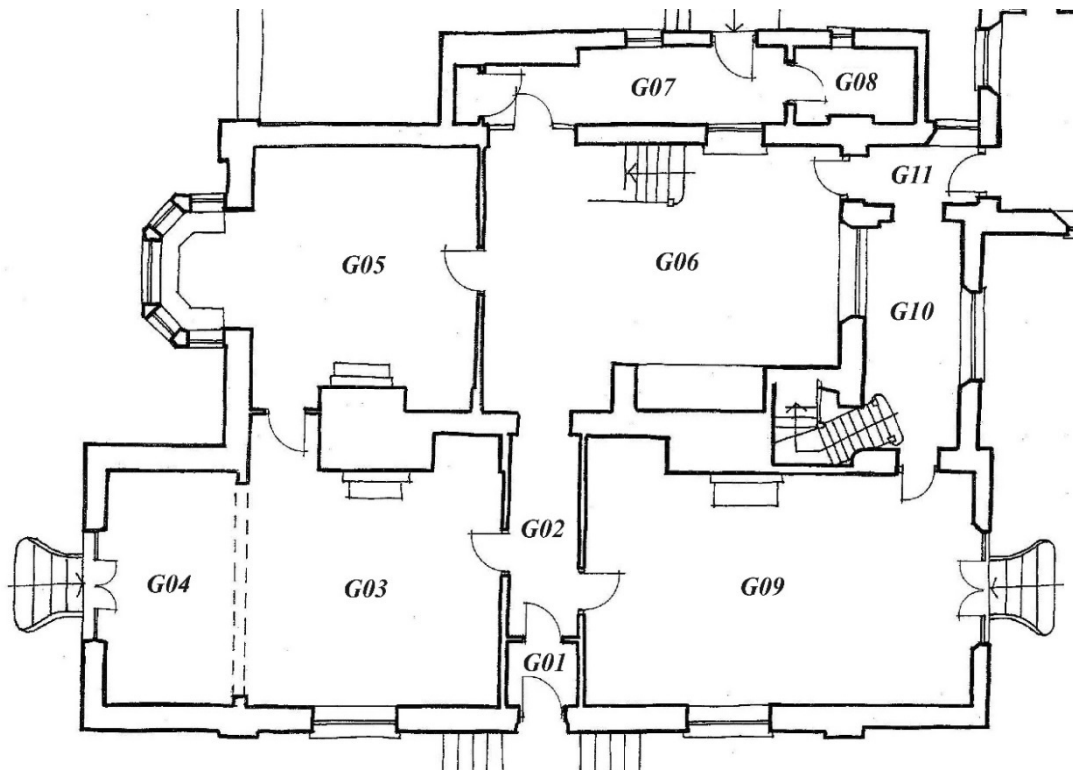


Figure 9 ground floor room numbering

Much of the flooring remained intact throughout the ground floor level, though with the exception of parts of rooms G03/4 and G09 and the complete loss of the floor in G05. The floor was covered with 0.3m + of cinders and collapsed/ melted plasterwork representing the remains of the floors and roof above a deep deposit of brick and masonry; on top of this was the result of the demolitions.



Plate 55 Ground floor flooring with the burnt remnants of the structure above reduced to 30 cm of ash



*Plate 56 Room G09 flooring as exposed*

a. *Room G03/G04*

The floorboards ran east-west and ran continuously from G03 into the extension of G04, showing this flooring to postdate the extension. The flooring within the extension was heavily fire damaged and had to be removed but the flooring within the room was only damaged in front of the window.

Some fragmentary remnants of the decorated plasterwork were recovered (find no 084).



Plate 57 room G03 fireplace pre fire



Plate 58 G03 fireplace post fire



Plate 59 room G03 remnant of timber fire surround (find no 080)



Plate 60 room G03 remnant of marble surround (find no 083)

Part of the western gable at ground floor level had previously been slapped out into an extension. The major timber beam that had been inserted to support the gable was of interest. It was a composite of three timber parts cramped and bolted together. The parts comprised a 40cm square beam sawn in half with a check for a 12.5cm square beam running down the middle. All were held together by a number of bolted plates (find no 073).



Plate 61 major beam G03/4

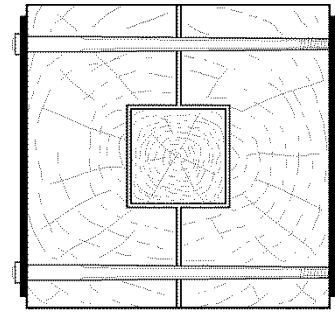


Figure 10 detail of major beam G03/4

This beam, despite its size, had completely burnt through to the south and the gable above had collapsed as a result.

b. Room G05

The timber surround to the fireplace was lost in the fire, however the metal front to the fire was recovered from the rubble (find no 045); the fire was a relatively modern brick insertion. Much of the room had been stripped back to structural masonry for repairs pre-fire and no further fittings from this room were identified, with the exception of the window furniture related to the secondary bay window (find no 011 sash weights/050 window fittings). The sash weights were suspended by (copper?) chains rather than rope, were square in profile and came in four different lengths/weights.



Plate 62 find no 011 bay window sash weights



Plate 63 find no bay window fittings

The floor was completely lost in the fire within the extent of this room, but the rooms surrounding the floor were largely intact.



Plate 64 room G06 fireplace



Plate 65 G06 fireplace post fire

Between room G03 and G05 the width of the chimney stack would have formed a corridor with doors either end into the rooms. This corridor was lighted by an original window, which was latterly blocked with brick and covered with cement on the exterior. Service channels for pipe work were formed within the blocking on the interior. The window was partially exposed in the demolitions and clean up; on the exterior the cement ran up to the corner downpipe which had melted, leaving a jamb exposed. On the interior, removal of piping partially exposed the plastered ingo and soffit of the window; this showed two coats of plaster on the square ingos, with the earlier pecked for grip. The window jamb also showed no evidence for a transom, showing it to have been an open window.



Plate 66 early window G03/G05



Plate 67 early window G03/G05 detail of plaster

c. Room G06

Prior to the fire a recovered window from the orangery was stored in this room for safekeeping; it was protected by plywood boards on top and this kept the window largely intact if a little crushed. Further sashes from recovered windows were also stored upright in here, but these were crushed and removed

in pieces as find no 053; although it is likely that some pieces of the attic windows (room S08) were mixed with these on recovery. The floor remained intact and in good condition as it was generally protected from the fire by the collapse of the upper floors.

The large fireplace to the south remained intact, although some small cracking was noted on the lintel and in the brickwork.

Light fittings from the room were recovered as find no 026, the square lantern, which was recovered slightly crushed and find no 027, the triangular fitting formerly beneath the stairs to the west. The square lantern looked to have been originally a gas lantern, which was latterly converted for an electric bulb.



*Plate 68 find no 026*



*Plate 69 find no 027*

d. *Room G09*

The flooring in this area was largely intact with a large hole in front of the fireplace where tons of collapse had fallen into the basement. The floor boarding was in two parts, with the western half stopping on the line of the former external wall and the eastern half infilling the extension, showing this to be of two phases of work.

The timber surround for the fireplace had survived mostly intact, although it had been slightly damaged and knocked loose. Exposed behind this was a plain chamfered sandstone lintel and jambs from an earlier fire; this may not be original as partially exposed above the lintel was a timber over lintel and voids, perhaps showing this was inserted. Further investigation/stripping of plaster would be required to confirm this.

The lintel had a series of six lead-set cramps for an attached timber surround and a light shadow of this surround can be seen on the stone.





Plate 70 room G09 shows earlier flooring to west stopping on line of former gable



Plate 71 room G09 shows early fireplace lintel

The two chandelier light fittings (with fake plastic candle holders for the lightbulbs) were recovered as find no 104 and a loose light fitting last seen on the fire lintel was recovered as find no 052.

The extension to the east slapping out the original ground floor masonry required a major timber support beam to hold up the gable above, as at the western gable and this timber also burnt completely through as did the one at the west; the remnants had shattered when it collapsed and brought down much of the gable in the fire. The timber was different in composition to the western one as it was a simple single major pine beam approximately 0.40 m square and in excess of 80 yearly growth rings were counted.

Cut into the side of surviving fragments of the beam were some race marks. The beam had shattered and the bits had to be sawn up into manageable pieces to remove them from the building but the pieces with the surviving race marks were reassembled and they were recorded, see *figure 11* below.

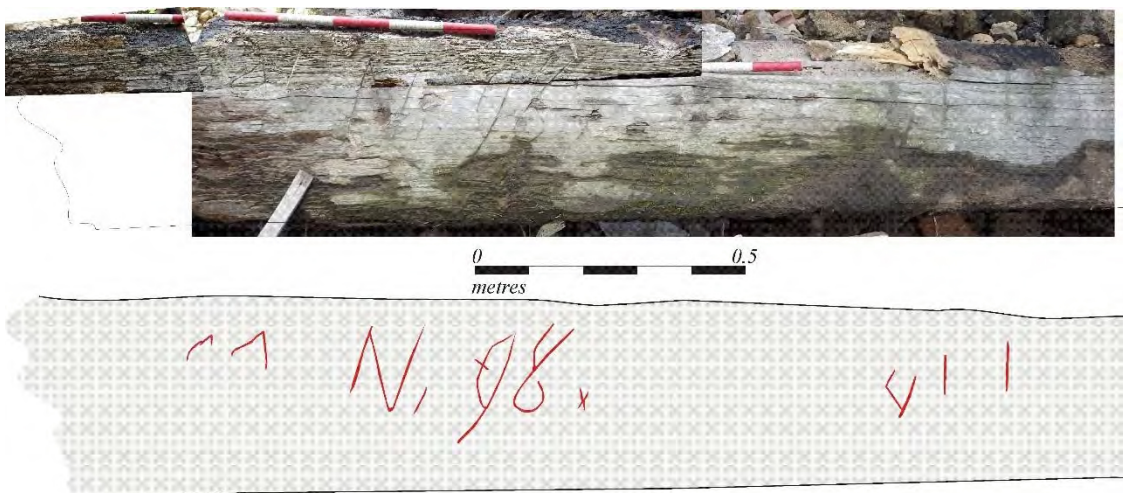


Figure 11 partial race-knife marks on main support beam

A blocked door was uncovered between the fireplace and the former eastern elevation, which formerly opened into G06 to the north. This was blocked up on both sides when room G10 was added and a stair well running from G10 to F08 on the floor above was added through the void of the door (this may have provided servants access to the linen room).

e. *Room G10*

Room G10 is an extension corridor infilling the space between the eastern extension and the range to the north-east and gives access to the linen cupboards in F08 above. This room was largely intact although infilled with rubble from the gable collapse. A number of lead sash weights (find no 034) were recovered from here, mostly partially melted. In the surviving exterior window of G10 was a similar lead sash weight, partially exposed within the window.



Plate 72 lead sash weights find no 034

Within this room a number of earlier wall finishes were noted; on the west wall, the former exterior of the original building, a large amount of a lime washed render was visible behind the existing lath and plaster.



Plate 73 room G10 original exterior finish



Plate 74 exterior of eastern extension shows finish

Some earlier paint schemes around the window were noted; in particular an original square ingo plastered on the hard had been latterly overlain with lath and plaster to form a splay, with colours of red, pink and green observed. The northern elevation of the room consisted of a large arched opening, presumably an original exterior door.

f. *Room G11*

Largely untouched link corridor between the house and service quarters to the north-east.

g. Room G06

Much of the eastern part of room G06 survived the fire, including parts of the ceiling structure and its floor structure. However the remaining ceiling timberwork, and a mass of overlying collapse material, had to be dismantled and removed to enable stabilisation of the structure.



Plate 75 room G06 pre fire



Plate 76 room G06 fireplace under excavation

h. Room G06 (stairwell)

A major loss was the stairwell and staircase. The stair was a very elegant structure of mid-late 18<sup>th</sup> century date occupying the entirety of the central bay on the north side of the building. It had seen secondary modification at ground floor level when its eastern partition wall was removed and the lower flight re-aligned to descend eastwards rather than to the south – into the amalgamated chamber, room G06.

The timberwork of the stair was almost entirely consumed, with only a few parts of the lower flight recovered. A complete single turned baluster was recovered but most others were fragmentary and badly charred at best.



Plate 77 Stair hall, room G6, looking WNW towards the stairwell, showing re-alignment of the lower flight

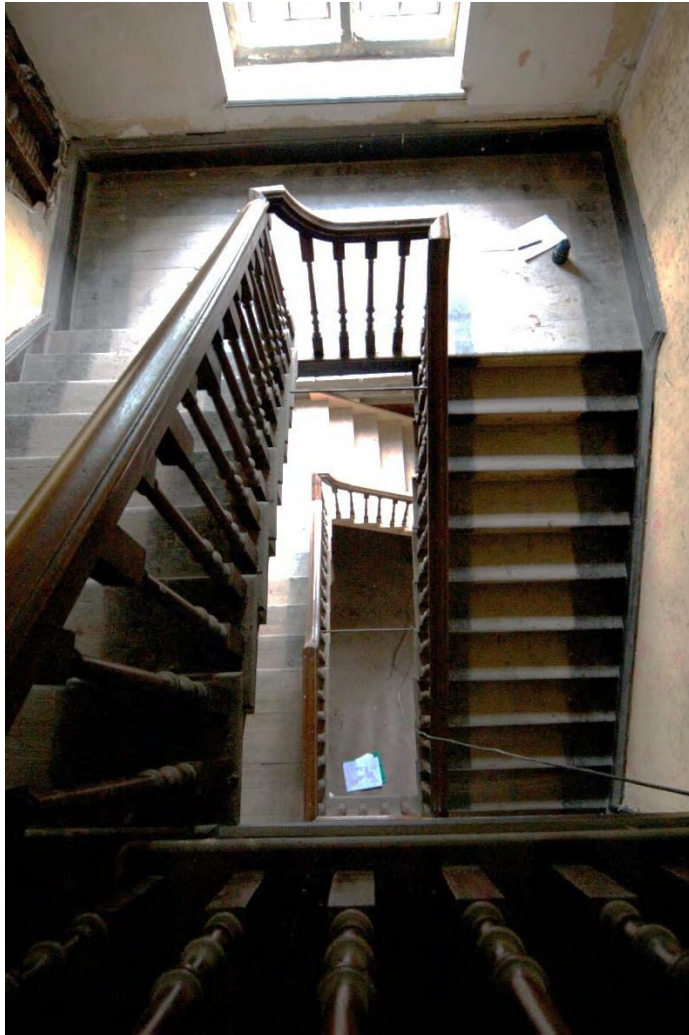


Plate 78 Stairwell looking vertically down, north to top



Plate 79 Remnants of the stairwell find no 013

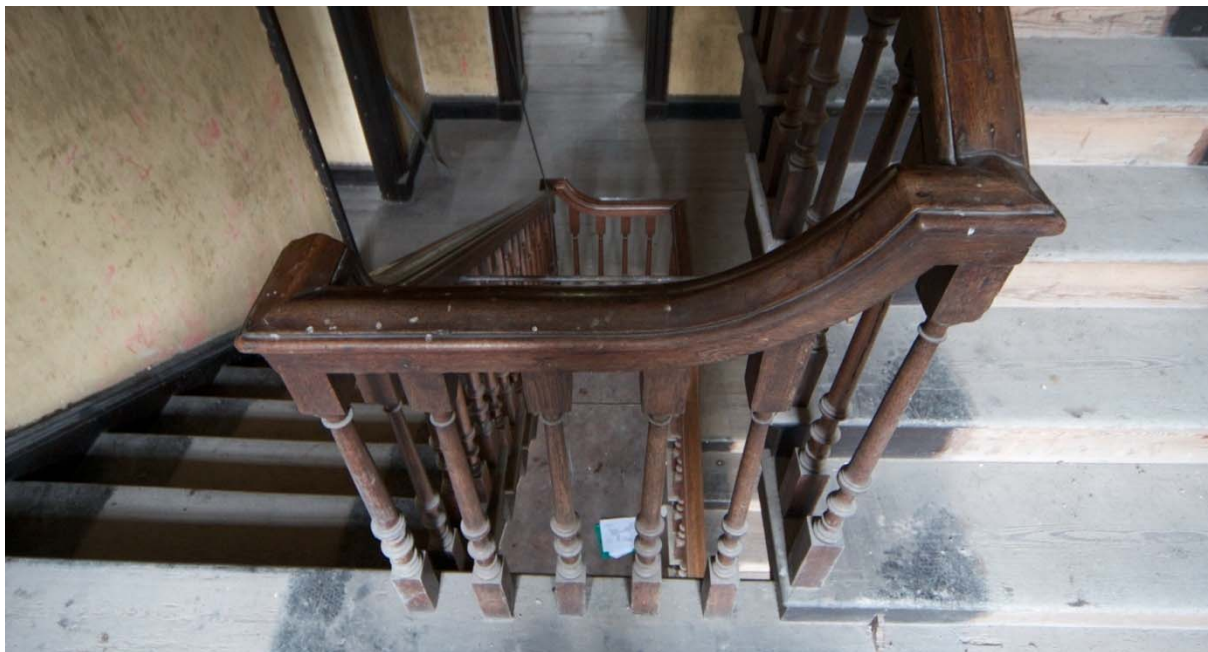


Plate 80 Stairwell – detail of balustrade

i. Room G06 (stair window)

The stairwell was particularly notable for the presence of a tripartite ‘Serlian’ window at what had been the landing level between ground and first floor. To the interior this feature had been enriched with a well formed architrave with good moulding detail and paired turned timber column shafts with naively executed ionic capitals. Before the fire the decorative timberwork had been largely dismantled to allow for damp repair, and stored elsewhere in the building. While these pieces were wholly destroyed, the remaining *in situ* parts of the architrave remarkably survived the fire.



Plate 81 Stair window – view before the fire



Plate 82 Stair window – detail



Plate 84 Stair window – detail of capital



Plate 83 Stair window – ex situ sections of woodwork – destroyed in the fire

vii. Recovery of features/fireplaces - basement

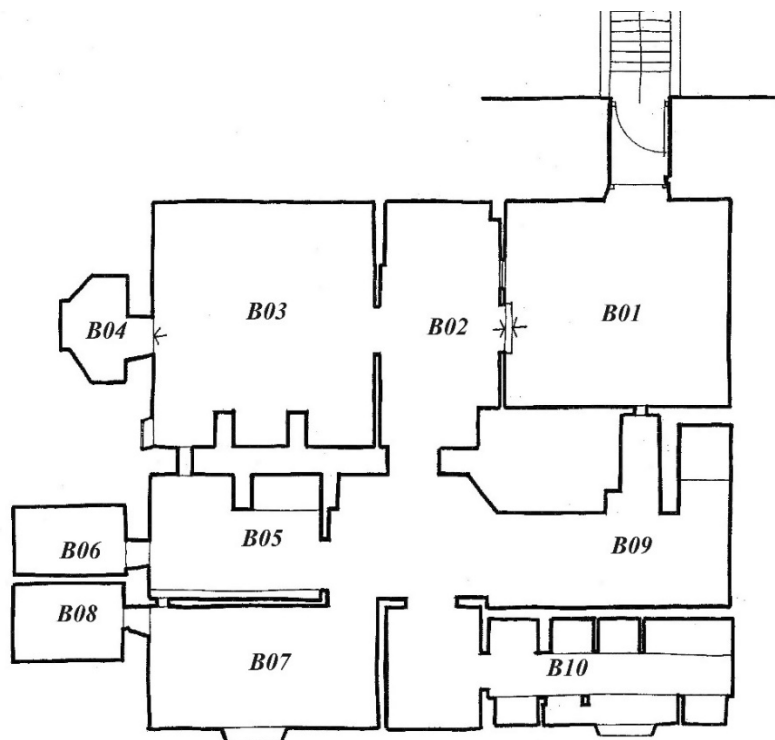


Figure 12 ground floor room numbering

a. Room B03/B04

The floor above room B03 was completely lost in the fire; the interior of this space was thus fully exposed. Much of the interior was brick and unaffected though the brick partition to the east partially collapsed. A former basement window was newly exposed to the west. This window was partly slapped-through to form an entrance into the basement area below the 19<sup>th</sup> century bay window

extension. To the interior its splayed imgo survived and the new opening slapped through the south half of the window.

The lintel and jamb were recovered from the collapse, find 008. The lintel had shattered into many heat-affected fragments but was reconstructed and with the rest of the survival it was shown that this was originally a double window with a central mullion. The window's upper parts formed an integral up-step to the plinth course running around the lower part of the structure.

It was notable that above the chamfered sandstone plinth course the build is of brick but below it is of sandstone rubble construction.

The construction of the bay window and the formation of the basement beneath involved exposing the foundations of the building. These were stepped out by 0.1m and were of much coarser construction than the above-ground masonry. The slapping of the entrance through to the space below the bay window also involved the bricking up of the surviving half of the pre-existing cellar window.



Plate 84 Room B03 - basement window remnants, looking east

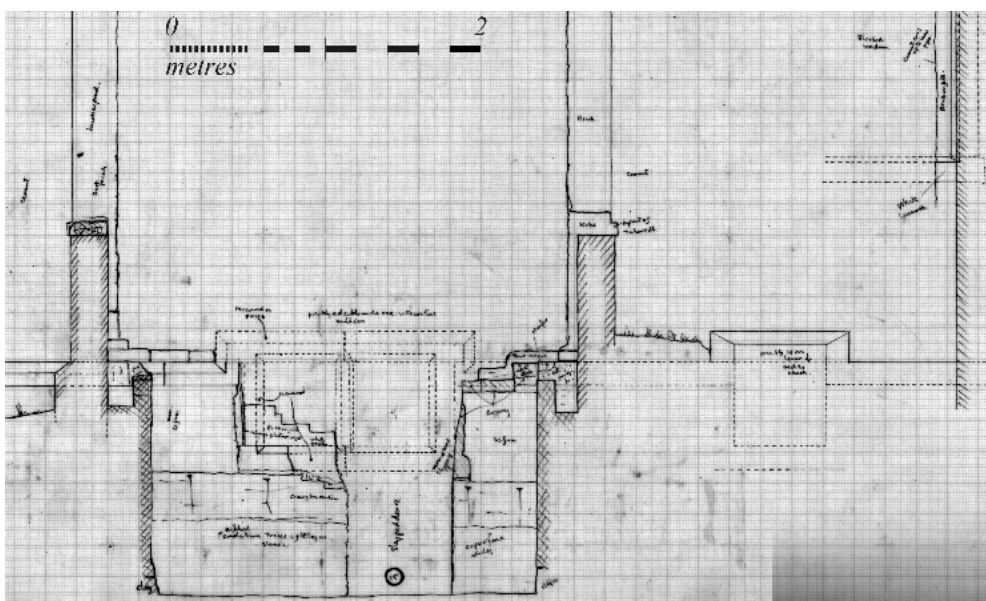


Figure 13 Field drawing showing details of the basement window in the west wall of room B03, partly reconstructed – dotted

#### **4. Discussion**

This interim report principally describes the process of recording and materials recovery at Woolsington Hall, an operation that is still on-going. It also presents the extent of recording that has now been achieved. However it is at too early a stage to attempt a comprehensive overview of the analytical history of the building – there is much still to be revealed, to record and to assess.

Though the fire was a catastrophe on most levels, it has nonetheless presented an opportunity to carry out a detailed examination of many parts of the superstructure and sub-structure that would otherwise have always remained inaccessible. The result will be a comprehensive understanding of the evolutionary history of the structure and a deeper awareness of the design, planning and architectural details of the first phase of construction.

Some key observations;

- More than was understood previously the core building at Woolsington Hall is (in spite of later remodelling of the interiors and particularly of the roof structure, and in spite of later additions) confirmed as a largely complete building of one principal period, this apparently of the later 17<sup>th</sup> century.
- The early building is confirmed of being of a very neat, well-planned and coherent design of double-pile form. Much of the detail of its original form is recoverable.
- There is more reason now to suppose this may be a building of Robert Trollope, and a very good example of its type. The fire has resolved various issues about the phasing of the structure and has revealed many new details – it is now possible to more reliably compare Woolsington to other Trollope buildings.
- The central spine wall and fire stacks are essentially survivals of and integral to the late 17<sup>th</sup> century structure although with some secondary additions. The stacks preserved original stone fireplace surrounds at ground and first floor levels that display fine moulded detail; these have a considerable bearing on how the spaces they served were originally arranged. There is more yet to be revealed.
- The details of many original windows were revealed or more fully revealed within the east and west exterior walls of the original mansion house, including new evidence that there had been narrower central windows between the larger windows to either side at ground and first floor levels. Where fallen, the majority of these features were salvaged during the clearance process.
- Other details of the exterior design of the original mansion house were confirmed – particularly the extent and position of stone string courses, their moulding profiles, etc.
- The existing ground-floor floor structure is clearly partly of the 17<sup>th</sup> century construction and the study of its remains is likely to have a considerable bearing on the understanding of the original planning of the interior space at basement and ground floor levels.

Clearly the recording and monitoring works as reported so far are part of an intended on-going process. Significant areas of the damaged structure have remained inaccessible or partly unavailable for close scrutiny. These areas include the exterior walls of the original mansion house, still obscured by cement render; the ground-floor floor structure, still mostly obscured by later flooring above and currently inaccessible below; and the basement areas including its flooring, presently inaccessible on safety grounds. All these areas have considerable potential to add important additional information about the analytical history of the structure. Similarly the surviving remains of the central spine wall and fire stacks are complex structures that have seen a number of re-workings, modifications and additions – it is of particular importance to more fully understand those.



## **5. Recommendations**

It is recommended that there should be a review of the recording regime that has been in place to date, and that priorities for the work going forward are identified and agreed by the design team and statutory consultees.

In summary:

- Continue the monitoring regime over further dismantling, clearance and invasive works.
- Extend the general record to cover areas that have so far remained inaccessible – particularly cellars.
- Cellar floors – where these have been debris-obscured at the time of original survey – these need careful cleaning and rectified photographic recording /analytical survey.
- Remaining areas of ground floor structure – controlled dismantling of these is necessary to assess the nature of flooring (earlier flooring may be overlain by later coverings – such as parquet); the floor structure itself should be fully recorded, including jointing details – the principal timbers may well preserve much evidence for the ground floor interior arrangements (evidence for early partition positions, etc.)
- Lower parts of stacks – controlled dismantling. Remains of at least two early fireplace surrounds survive –perhaps mostly intact – on the south sides of the stacks. Both the stacks and the fireplaces within are complex, multi-period features. They need to be dismantled under supervision to reveal their structural history and what remains of their early arrangement.
- Other areas of downtakings – eg extension to the north elevation – monitor and record.
- Detailed recording of the exterior walls following removal of render; monitoring during render-removal.

*Appendix A: Project documentation*

*i. Written Scheme of Investigation (January 2016)*

# Woolsington Hall

## *Woolsington, Tyne and Wear*

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Historic Building Survey : Written Scheme of Investigation

Project AA.1964

for Cameron Hall Developments

*January 2016*

### **1. Introduction**

Following the fire that gutted Woolsington Hall a strategy for emergency and more general recording became an urgent necessity. The extent of the required work and the best approach towards achieving it was discussed with the project team on Monday 4 January and further on site with representatives of Historic England and Newcastle Council.

While the nature of the required recording has changed in relation to the new circumstances on site the overall need to undertake a comprehensive survey of the hall as a condition of planning consent relating to the wider redevelopment of the site by Cameron Hall Developments has not.

The following Written Scheme of Investigation for the recording works is proposed:

### **2. Recording strategy**

*i. Immediate requirements – background information-gathering*

Review and gathering together of existing records of the hall. At this stage this will include a review of Simpson & Brown's architectural records and survey data, as well as that of Addyman Archaeology. The former includes much pre-fire detailed photography of the interior of the hall. The latter includes selective survey of areas of the interior; a phased plan at each level; and a systematic room-by-room general photographic coverage. It is proposed to collate these sources, and provide location plans for each pre-fire photographic image. This collated resource of pre-fire data for the hall will then be made available to the project team and statutory parties.

*ii. Immediate requirements - before duntakings*

*a. General*

A comprehensive photographic record of the gutted is required as soon as possible – before further collapse and ideally carried out before the erection of scaffolding and before any dismantling and

clearance takes place. This can be most effectively achieved by combining techniques, by means of laser-scanning from the exterior, by remote data-capture from a UAV; and with additional high resolution digital photography of much of the interior achieved by means of a long extendable pole run through the building's external openings.

*b. Initial photographic survey work*

A limited photographic survey was carried out post-fire on the morning of 4<sup>th</sup> January (TA), from the exterior as access permitted.

*c. Laser scanning and digital photographic survey*

The photographic recording can also be augmented by means of any physical access that may be available through the demolition contractor's works – e.g. suspended basket, mobile platform. Close coordination with demolition contractor.

- Laser-scan of the external elevations of the fire damaged building and the internal elevations to the extent possible without entering the building.
- Photographing the external elevations of the fire damaged building and the internal elevations to the extent possible without entering the building.
- Photographing the internal elevation of the fire damaged building with a camera mounted on a 30 foot Hiperpod Premier mast to allow photography to be taken at height through doors, windows and holes in the external wall.

*d. UAV photography*

Obtaining vertical and oblique photography from a camera mounted on an unmanned aerial vehicle (UAV). An AscTec Falcon 8 will be used. The Falcon 8 will fly at low level over the building to obtain the vertical and oblique photography.

*e. Deliverables from data-capture*

The deliverables will be:

- A registered point cloud for the exterior and interior of the building to the extent possible without *entering the building*. *The registered point cloud will act as the metric framework for the production of orthophoto based elevations in the next phase of the work (see below).*
- Terrestrial, mast and UAV photography for the exterior and interior of the fire damaged building.

The data will be further processed to produce rectified or orthophoto elevations. This can follow once the data / imagery we have been able to capture without entering the building has been assessed. The data capture at this stage will also be augmented with further rectified photographic imagery for parts of the structure that are either inaccessible or debris-obscured.

*iii. During duntakings*

*a. Monitoring and recording*

A monitoring presence will need to be established in order to ensure appropriate recording is carried as dismantling progresses.

*b. Materials recovery*

There is a need for the coordination / organisation of the recovery of architectural elements as far as is feasible during the dismantling of the dangerous parts of the structure. For particular elements it is important that their former positions and/or order are recorded and properly marked and suitably stored, e.g. dressed stonework, elements of fireplaces, etc. This process will require close coordination with demolition contractor and a suitable storage area to be identified.

*iv. Clearance of interior following safe access*

The clearance of the interior of the hall will need to be monitored and closely coordinated with the building contractor. Of particular importance is the identification of significant architectural elements – both as part of the archaeological record of the structure and for potential reuse. For example the collapsed walling from above the western single-storied wing had contained a large blocked stone-built mullioned and transomed window of the original build – its stones should be recovered and a record made of their details.

As far as possible materials will be salvaged for re-use. For particular elements it is important that their former positions and/or order are recorded and properly marked and suitably stored. The latter might include dressed stonework (eg. copes). More general building material particularly early brick should also be recovered for reuse as far as possible. Other features, fixtures, fittings also to be identified as clearance progresses, and significant items retained, catalogued and stored. This process will require close coordination with demolition contractor and a suitable storage area to be identified.

It is proposed that a catalogue be maintained of recovered elements that would record location, summary description, photograph, etc.

*v. General recording works*

With safe internal access established it is planned to complete a comprehensive record of the interior. This will include systematic digital photography and/or rectified imagery (as appropriate); a drawn record; and a comprehensive written context record.

This stage of work will result in the production of a fully worked-up set of rectified images of the structure; a survey drawing set (annotated and phased). A narrative account of the structure will also be produced that will provide a detailed description, an outline of its evolutionary history, and of the recording works undertaken. There will be a supporting compendium of metrical data, catalogued site records, etc.

*vi. Monitoring of future work*

A provision will be made for recording that may be necessary during any invasive works that may be required during the on-going repair / rebuilding works to the structure; the existing records will be augmented accordingly.

*vii. Suitable publication.*

A suitable form and format for publication will likely need to be considered.

Addyman Archaeology  
8 January 2016

ii. *Written Scheme of Investigation : Addendum (May 2016)*

# Woolsington Hall

## *Woolsington, Tyne and Wear*

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Historic Building Survey : Written Scheme of Investigation

Addendum : Preambles for archaeological works

Project AA.1964

for Cameron Hall Developments

*May 2016*

### ***1. Introduction***

This document forms an addendum to the *Historic Building Survey : Written Scheme of Investigation* (project design for archaeological recording works) in relation to the recent partial destruction by fire of Woolsington Hall, issued in January 2016. Following detailed discussion with the client and client's representatives (engineer and architects) this methodology was developed in relation to the archaeological management of the clearance operation of collapsed materials fallen into the building, in relation to the monitoring and recording to be carried out during the clearance operation, and for the completion of recording of the superstructure of the building once emptied and made safe. Clearance will be a controlled process carried out in close coordination with the appointed demolition contractor, MGL Demolition of Durham.

### ***2. Archaeologist***

An experienced buildings archaeologist will attend the site to provide a monitoring presence and will need site induction but will have their own Personal Protective Equipment. The archaeologist will ensure appropriate recording is carried out as clearance and dismantling progresses.

### ***3. Materials Recovery - summary***

There is a need for the coordination/organisation of the recovery of demolished material, such as bricks and stone, as far as is feasible during the dismantling of the dangerous parts of the structure. For particular elements it is important that their former positions and/or order are recorded and properly marked and suitably stored, e.g. dressed stonework, elements of fireplaces, etc. This process will require close coordination with the contractor and a suitable storage area to be identified.



*Rubble collapse within Woolsington Hall*



*Recovery of major architectural elements*

In general rubble will be carefully sifted and individual elements of significance recovered. Recording of locational information is of particular importance both for the record and understanding of the structure and given that it may be possible to reinstate many individual elements. For example a number of historic windows fell during and following the fire; some of these were extant openings, others were blocked or otherwise modified and obscured to a lesser or greater extent. From examination of their fallen remains it is apparent that these windows, which were each formed from a number of individual dressings, have further shattered into smaller fragments. Initial clearance of one exterior rubble pile demonstrated that such elements could be successfully recovered, each component identified and then set aside and laid out / reassembled in their correct original articulation such that a drawn record could be made of the original configuration, the feature's details, mouldings, etc.



*Example - initial identification, recovery and laying-out of shattered dressed window elements, prior to recording labelling and storage*

An example of an architectural elements recording catalogue for another site is provided at the end of this document. A catalogue of similar will be tailored to the requirements of the Woolsington site and to the types of materials recovered.

The 17<sup>th</sup> century bricks that comprise the main walling material of the original mansion house are readily identifiable. These will simply be sorted during the clearance operation, stock-piled and stored for re-use.

#### **4. Clearance of Interior**

The clearance of the interior of the hall will need to be monitored and closely coordinated between the project archaeologist and the building contractor. Of particular importance is the identification of significant architectural elements – both as part of the archaeological record of the structure and for potential reuse. For example the collapsed walling from above the western single-storeyed wing contained a large blocked stone-built mullioned and transomed window dating from the original build – its stones should be recovered and a record made of their details.

As far as possible materials will be salvaged for re-use. For particular elements it is important that their former positions and/or order are recorded and properly marked and suitably stored. The latter might include dressed stonework (eg. copes). More general building material particularly early brick should also be recovered for reuse as far as possible. Other features, fixtures, fittings also to be

identified as clearance progresses, and significant items retained, catalogued and stored. This process will require close coordination with the contractor and a suitable storage area to be identified.

Clearance is to be generally by hand, undertaken by one or two teams of two personnel to be organised by the site contractor. This clearance will be supervised closely by a buildings archaeologist as required. It will need to be determined with the site contractor whether debris removal is to be undertaken wholly by hand, or with the additional assistance of a mini-digger.

It is proposed that clearance will be on a compartment basis. Each compartment will be photographed before clearance. The more obvious significant materials will be recovered and set aside before clearance starts. During clearance the debris will be hand sorted and any further significant materials will be recovered and set aside. It is anticipated that the personnel doing the clearance can be rapidly trained by the buildings archaeologist to recognise and set aside significant material.

Once clearance of a room is complete the set-aside material will be assessed. Significant items will then be recorded and retained as appropriate. A storage area has been allocated. Within this area suitable robust temporary shelving will be erected.

The record will be undertaken on a compartment basis, employing the established room numbering system for the structure. Following sorting and discarding of extraneous material, items retained will be removed to the storage area.

Each item will be assigned a unique number; this will be affixed or applied to the object. The number will be entered into a summary database.

Each object or group of related objects (such as fragments of one window) will be digitally photographed as appropriate.

Selected objects or details may also be drawn. This will relate to their perceived significance. For example, for the architectural process it is important to keep a record of the details of woodwork – particularly moulding profiles, details of interior finishes, etc. A further priority will be to record any details of moulded decorative plasterwork.

In some areas there are more substantial fallen architectural elements such as windows, joinery elements, fireplaces, fallen chimney stones, etc. Given that some of these may be reinstated it is important that they are recovered carefully, their locations recorded and that they be stored suitably.

Once recovered, the materials will be stored in one or more of the stables interiors. [TBC] These interiors to be cleaned out and temporary shelving put in as necessary. As far as possible materials will be stored in groups, according to the rooms from which they come. Smaller items will be stored in plastic containers.

General bricks and stones will be stored on the grass around the building. It is possible that these materials will be re-used in rebuilding.

The larger pieces will be laid out upon wood (battens, palettes, etc) in their correct sequence and organised so as to be accessible for inspection.

The archaeologist will maintain a catalogue of recovered elements that would record location, summary description, photograph, etc.



## **5. General recording works**

The archaeologist will complete a comprehensive record of the interior walls and exterior once the cement render has been removed. This will include systematic digital photography, a drawn record, and a comprehensive written context record.

## **6. Health and Safety**

Hand removal of fallen masonry and other materials must be carried out safely. There is a risk that lead, asbestos and other contaminants are present.

Removal, stacking and transporting of masonry elements should be carried out by operatives wearing gloves at all times. There should be washing facilities on site.

As the materials are being removed piece by piece, a normal watch should be taken for materials which might include asbestos. If any materials of this type are suspected or if a large area of masonry is to be removed at one time and it is not possible to see the full area which might be disturbed, protective masks should be worn in case of dust which could contain harmful particles.

If a material that could contain asbestos is discovered, then clearance work should cease and the materials should be removed by a specialist contractor. The specialist contractor should be suitably qualified. Their work would be subject to a separate method statement which would be specific to the asbestos carrying material as it is discovered and specific to the practicalities of its removal.

Some internal paint finishes contain asbestos – this is considered to be a low risk at Woolsington. No such paint finishes were noticed in the fire damaged part of the building before the fire and they are unlikely to have survived the fire if they do exist. If such asbestos containing paint layers do exist, then they are unlikely to cause any risk to health because the asbestos will remain encapsulated.

It is possible that lead will be discovered within the fallen debris. There was lead on the roof. This would have melted during the fire and so it is likely to be discovered as pools of solidified and molten lead in amongst other debris. The hazards associated with handling lead should be considered and a contractor should be aware of these risks. However, lead can be handled safely using gloves and with adequate washing facilities on site.

Some historic paint finishes might contain lead. It is very unlikely that any painted surfaces have survived undamaged within the rubble inside the building. The main risk to safety from lead based paints is in sanding back in preparation for a fresh coat. This is not part of the proposed works. There may be paint finishes on joinery elements on the outside window elements that have survived the fire. If considered important, these elements should be removed and stacked in storage. However, it is unlikely that any element of painted timber will be regarded by the archaeologist as worthy of retention. Timber elements that remain in the walls will be left in situ during this contract.

Normal manual handling safety for lifting stones, bricks, etc. will apply as they would in any contract involving lifting building materials.

## **7. Outline Method Statement for Clearance**

The following is the proposed methodology for clearance at the site on an area-by-area basis, this factoring in logistical and health and safety considerations, engineering requirements and general accessibility. The floor plans (see diagrams below) have been divided into the following areas:

### Zone A

The parts of the building interior identified as Zone A within the plan will be the first areas to be cleared. These areas have been identified as being safe to clear rubble. The walls around this zone have been secured and stabilised by scaffolding. The normal safety considerations and description of handling of masonry apply. Timber and stone elements will be stacked on pallets. Some stone elements considered to be of particular value will be stacked on pallets in a secure place such as the interior of the stables [TBC] Whole bricks will be stacked in a pile on the grass close to the wall where the bricks have been removed. On completion, there might be five or six piles of whole bricks around the south east and west sides of the hall.

In Zone A1, bricks and other salvaged materials will be removed. These may be removed in a basket or by barrowing along temporary boarded ramps. The material will be cleared down to cellar floor level. Zones A2 are areas that can be cleared by reaching in to the building from the plane of the outside wall. As much material as possible should be cleared from these positions. This clearance should include any remaining floor covering, boarding or floor structure.

Notify structural engineer in advance of completion of clearance of A zones. At completion of clearance of A zones, work with engineer to develop strategy for clearing Zone B. This must include a health and safety appraisal and a method statement.

### Zone B

Without standing on the floor within zone B between basement and ground floor, rake off material into the zone A1 area. This is intended to reduce the weight of material. Clear material raked off from Zone B roof, within Zone A by following the same procedure. In consultation with structural engineer, insert metal adjustable props from between cellar floor and remaining floor construction within Zone B. Allow for 4 props and suitable packers. Folding wedges might be needed at the upper edge of the props to ensure that the props are firmly fitted.

On completion of propping, remove remaining material from upper surface of floor. Stack as for other salvaged material as described for Zone A1. Consult structural engineer to agree detailed method for clearance of Zone C.

### Zone C

Repeat process described for zone B, including method for raking fallen material into zone A1 and clearance of material from zone A1.

Allow for 6 props. Zone C2 includes clearance through opening at centre of the building between the two chimney stacks southwards, following the same process as described for zones A2.

Consult structural engineer to agree detailed method for clearance of Zone D.

### Zone D

Repeat the process described for zone C.

Consult structural engineer to agree detailed method for clearance of Zone E.

### *Zone E*

Procedure of clearance to be agreed with engineer once full inspection can be made. Clearance will generally follow the same process as zones C and D. Some special process is to be agreed with structural engineer.

Zone E could be the most important area in terms of archaeology. The pile of fallen material towards the western end will contain stone from a 17<sup>th</sup> century window. This might also be the case in the fallen masonry to the east.

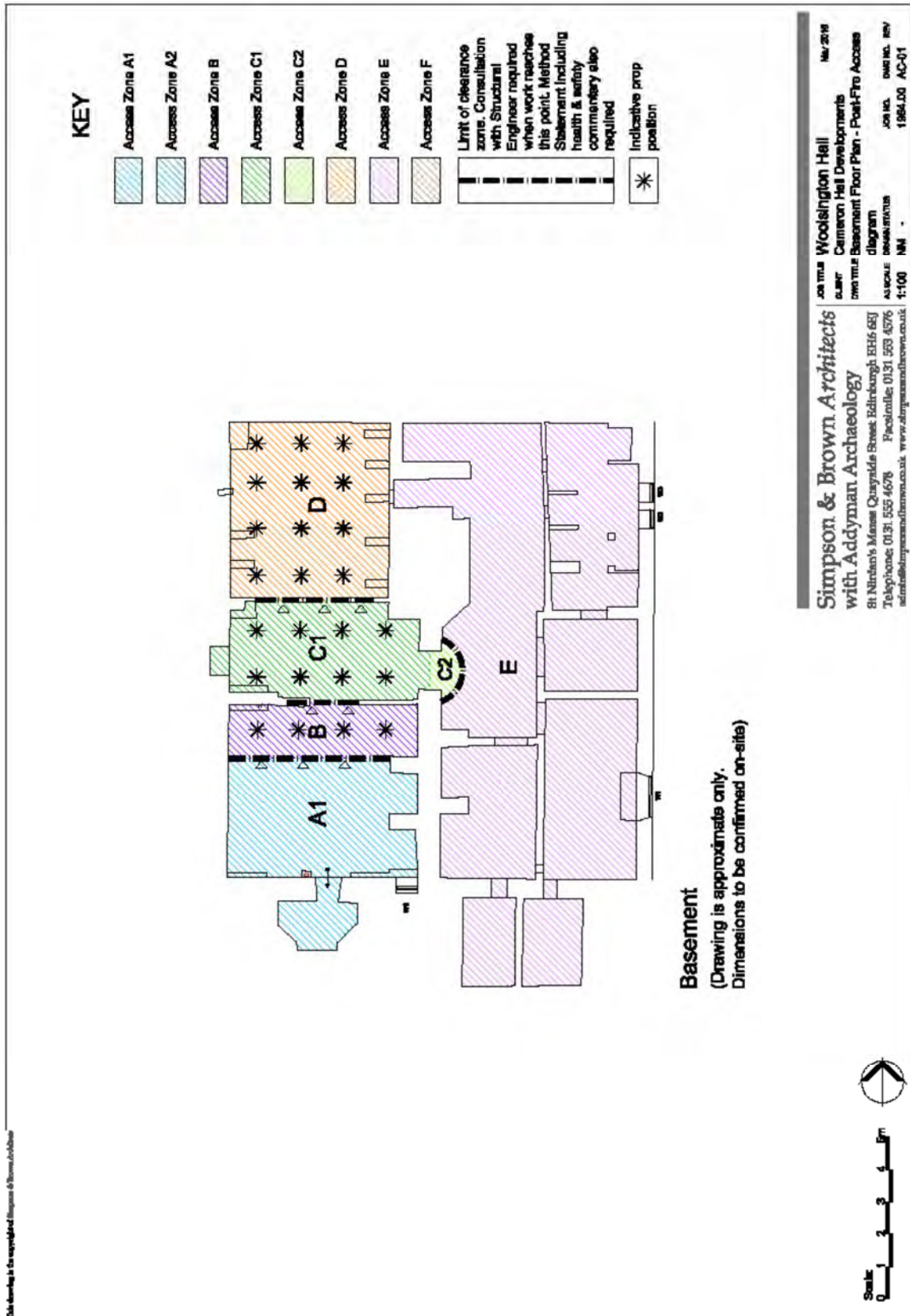
The remains of the fire surround on the eastern chimney at ground floor level is to be salvaged and set aside for re-use within Woolsington Hall.

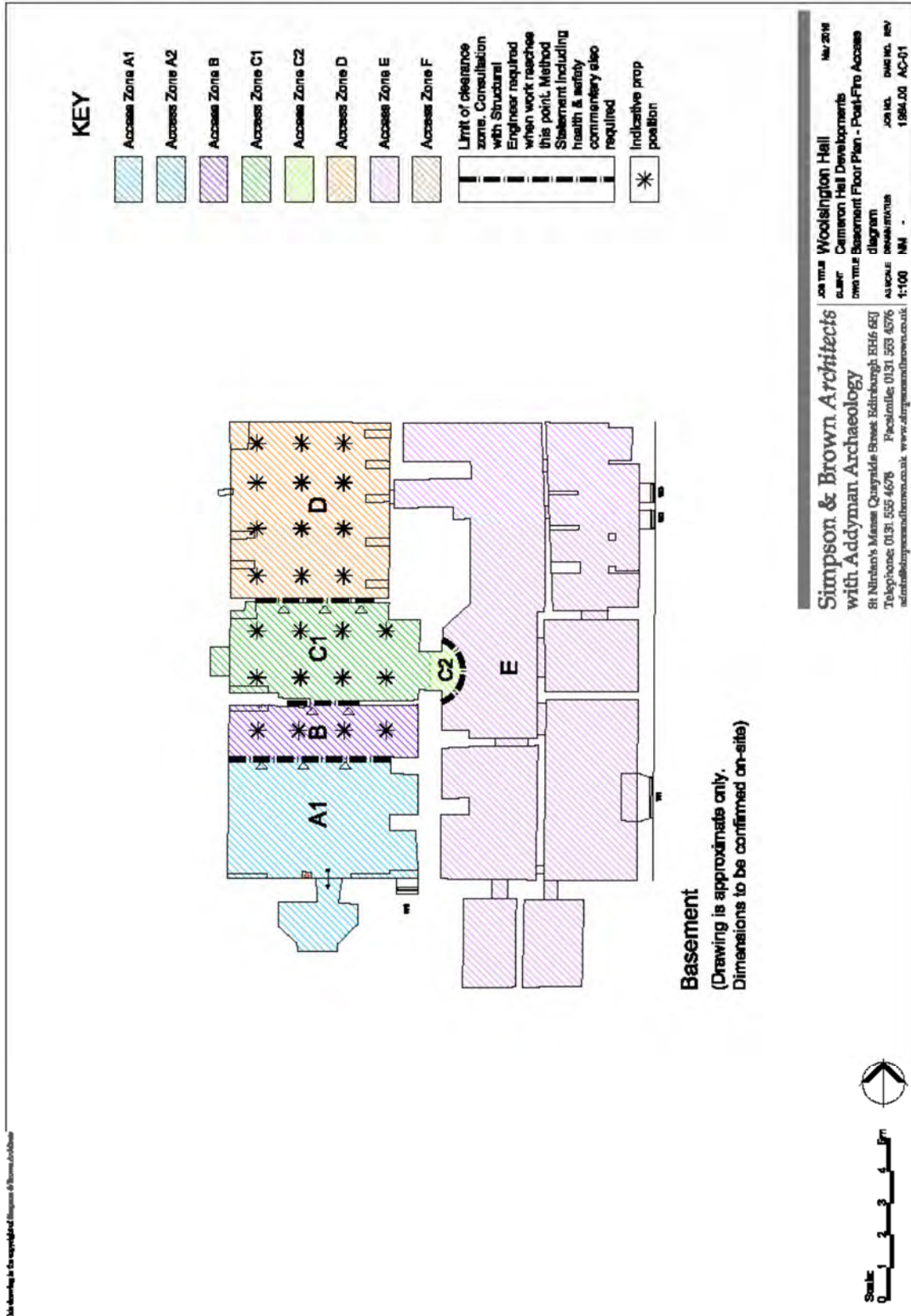
One possible method for ensuring safe clearance of material in this zone would be to fill the cellar with sand so that the material can be removed safely without the risk of falling into the cellar. The sand would be removed on the completion of the removal of the fallen material.

Consult structural engineer to agree detailed method for clearance of Zone F.




### *Zone F*




Repeat the process described for Zone C.





*Example of architectural element recording catalogue :*

<i>stone No.</i>	<i>location</i>	<i>summary</i>	<i>Description</i>	<i>images</i>
WS 001	Room 3	fireplace lintel	<p>Fireplace lintel. Coarsely hewn of locally derived limestone (?)</p> <p><i>Likely provenance :</i> from first or second floor fireplace in east wall of Room 3 (eastern room within the principal range) : probably early C18th</p> <p><i>Condition :</i> broken at angle</p>	
WS 002	Room 2	fireplace lintel	<p>Fireplace lintel; coarsely hewn of locally derived limestone (?)</p> <p><i>Likely provenance :</i> from first or second floor fireplace in east wall of Room 2 (western room within the principal range) : probably early C18th</p> <p><i>Condition :</i> good</p>	
WS 003	Area 8	jamb stone	<p>Entrance jamb stone; broad quirked angle roll; double rebate</p> <p>Fine-grained hard crystalline buff sandstone</p> <p><i>Likely provenance :</i> principal landward entrance to castle : probably C16th</p> <p><i>Condition :</i> excellent, undamaged</p>	

				
WS 004	Room 4	Spout	<p>Fine-grained pale crystalline sandstone. Broken spout,</p> <p><i>Likely provenance :</i> from the south wall head of the principal range – can probably be matched to broken face : late medieval</p> <p><i>Condition :</i> broken off from wall face; this piece in very good condition</p>	
WS 005	Area 8, SW quad 25/06/2013	voussoir	<p>Voussior from arched head of entrance; broad quirked angle roll; double rebate Fine-grained hard crystalline buff sandstone</p> <p><i>Likely provenance :</i> principal landward entrance to castle : probably C16th</p> <p><i>Condition :</i> good, displaying fire reddening and soot-blackening; one chipped piece (retained)</p>	

**Appendix B: Project documentation***i. Pre-fire photographic surveys*

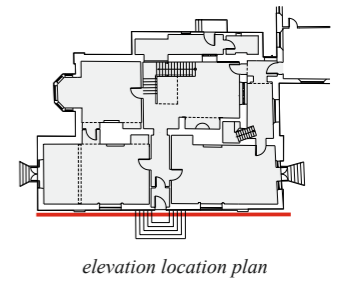
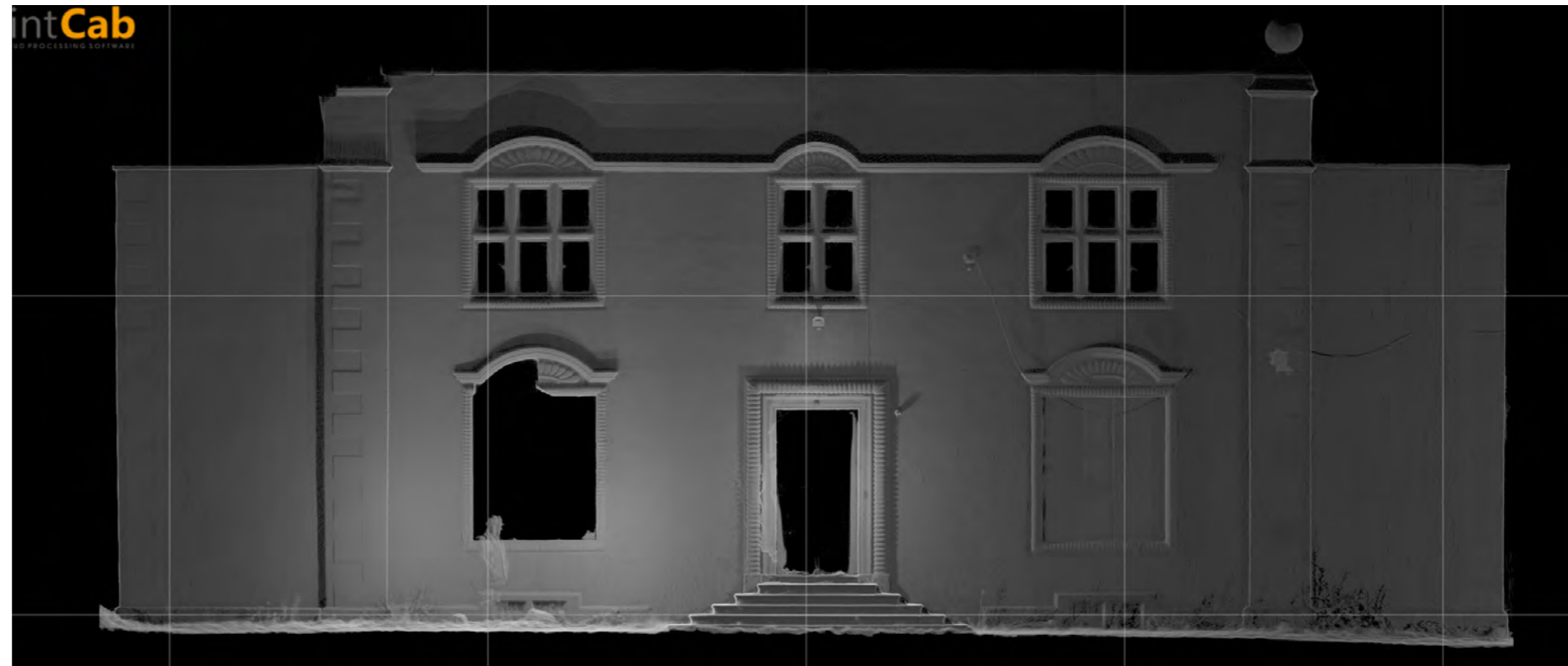
<i>Survey date</i>	<i>No. of frames</i>	<i>frame Nos.</i>	<i>by</i>	<i>areas</i>
02 December 2011	25	3001 - 3025	S&B	13 exterior; 12 interior, mainly ground floor (poor resolution)
08 December 2011	227	3026 - 3252	S&B - TP	general photographic survey - interior (for Conservation Plan)
11 January 2012	68		AA - TOA	interior - especially cellar spaces; some exterior
14 October 2013	69		S&B	roof details
23 May 2013	9		S&B	exterior
18 June 2013	6		S&B	interior details - ceiling moulded plasterwork and stair
14 October 2013	343		S&B	architectural survey photography
22 October 2013	8		S&B	Room F-08 - linen press
22 October 2013	41		S&B	interior - details of Serlian window
26 November 2013	364		AA	interior - individual room surveys; some exterior
04 December 2013	4		S&B	exterior - general
01 July 2014	281		AA - TR	Interior and exterior - general photographic survey

*ii. Post-fire photographic surveys*

<i>Survey date</i>	<i>No. of frames</i>	<i>frame Nos.</i>	<i>by</i>	<i>areas</i>
02 January 2016		1263 - 1340	S&B - JRS	clearance
04 January 2016		1341 - 1428	AA - TOA	clearance
09 January 2016		1429 - 1651	AA - TOA	clearance
13 January 2016		1652 - 1705	AA - KMcF	clearance
22 July 2016		5000 - 5023	AA - TOA	clearance
25 July 2016		5024 - 5029	AA - TOA	clearance
June - August 2016		5057 - 5663	AA - KMcF	clearance
August 2016		5664 - 5699	AA - KMcF	clearance
August 2016		5700 - 5739	AA - KMcF	clearance

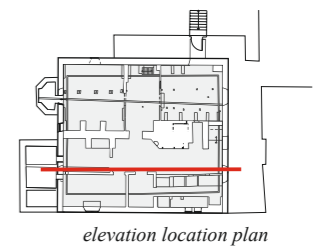


Appendix C Scanned imagery



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metres

Southern frontage exterior (initial scan)

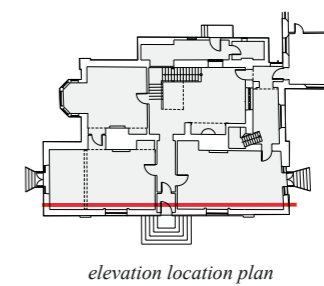


Basement partition (2nd scan)



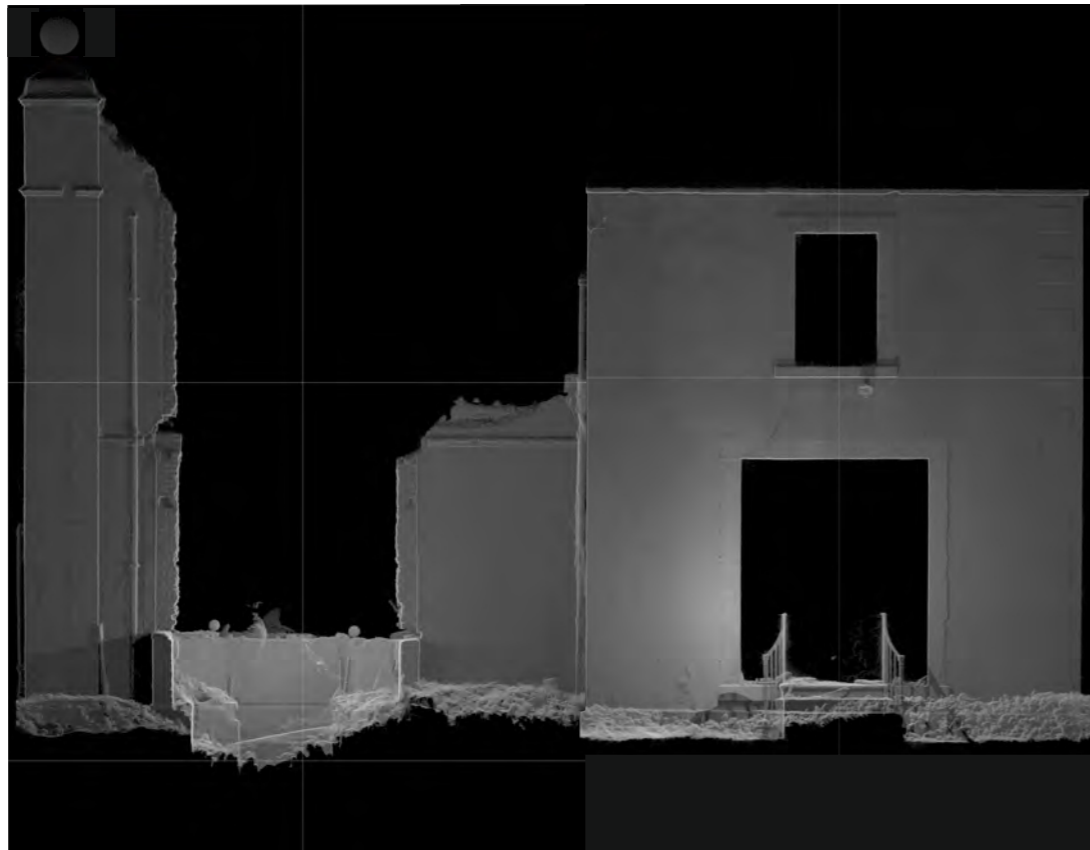
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metres

*Southern frontage interior (initial scan)*

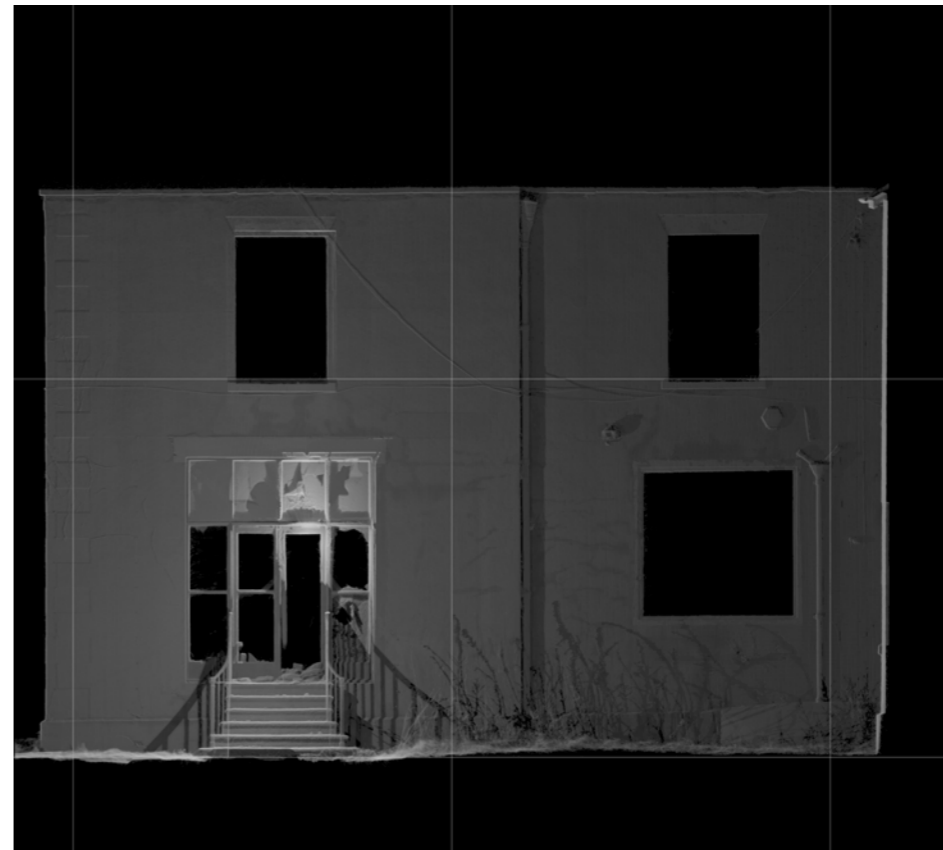


*elevation location plan*

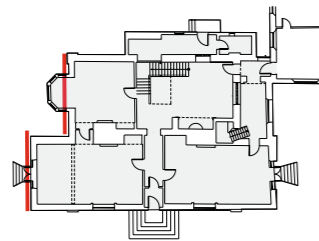
*Southern frontage interior (2nd scan)*



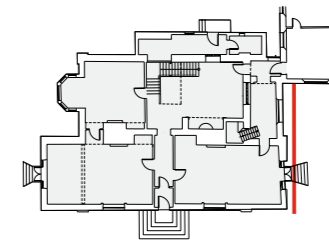
Western exterior (initial scan)



Eastern exterior (initial scan)



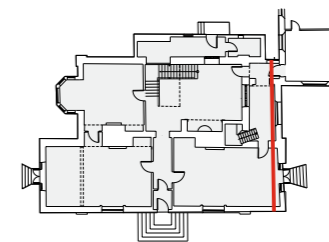
elevation location plan



elevation location plan



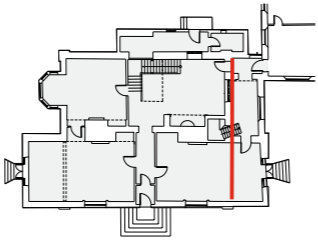
Eastern interior (2nd scan)



elevation location plan



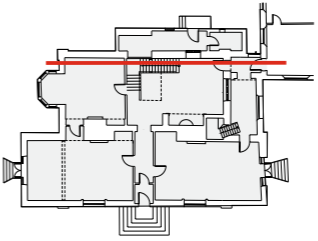
original Eastern interior (composite initial and 2nd scan)



elevation location plan



Northern interior (initial scan)



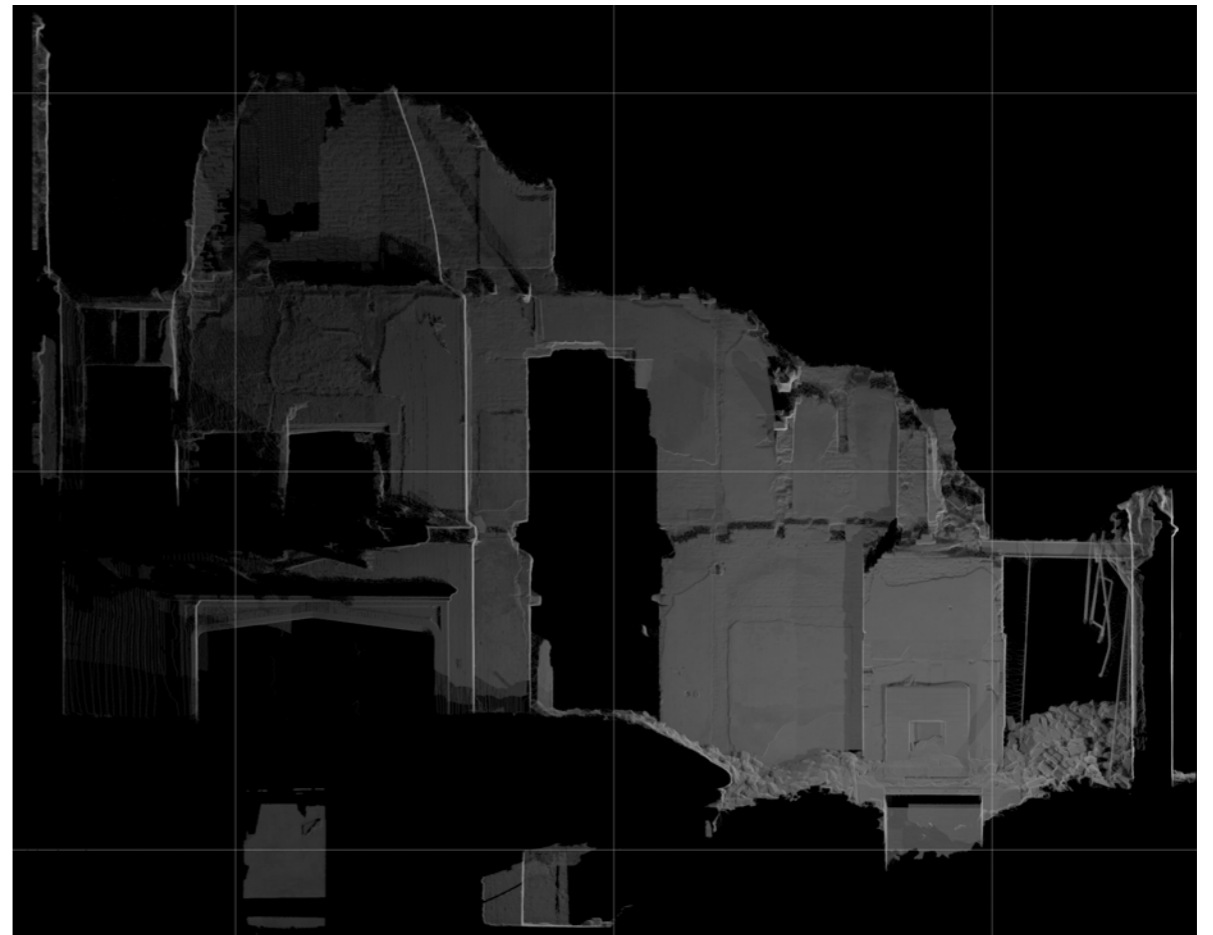
elevation location plan



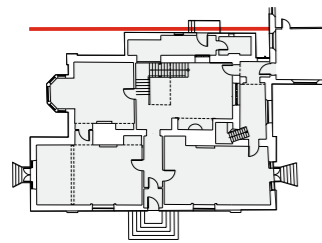
Northern interior (2nd scan)



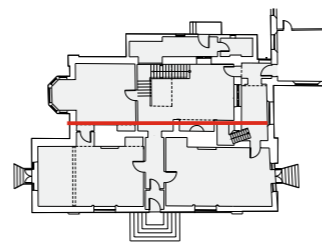
*Northern exterior (initial scan)*



*Central spine northern elevation (initial scan)*



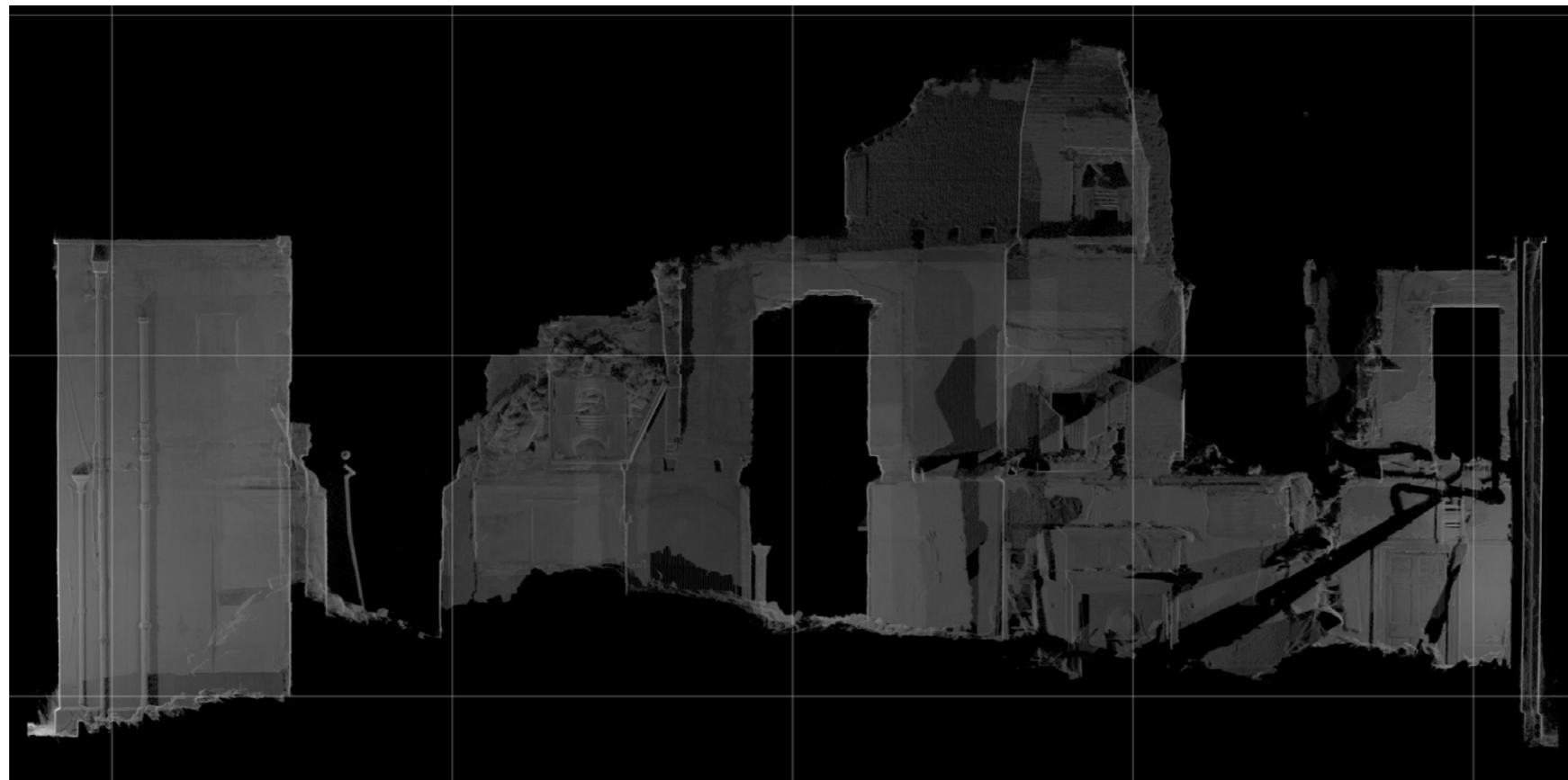
*elevation location plan*



*elevation location plan*



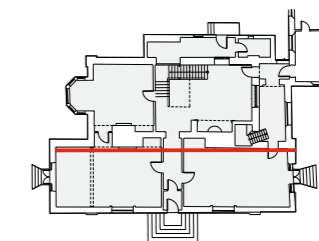
*Central spine northern elevation (2nd scan)*



Central spine southern elevation ( initial scan)



Central spine southern elevation ( 2nd scan)



elevation location plan



Woolsington Hall Basement laser scan plan



Woolsington Hall Basement and ground floor composite laser scan plan





Woolsington Hall Ground floor laser scan plan

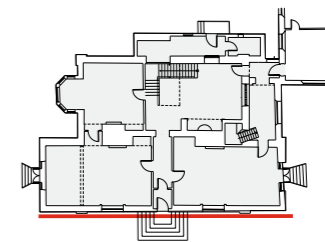
Appendix D Digitised record drawings with interim phasing

key

- Phase 1: 17thC
- Phase 2: Mid to Late 18thC
- Phase 3: Late 18th/early 19thC
- Phase 4: Late 18th/early 19thC
- Phase 5: 19th C infill ?
- Phase 6: modern



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metres

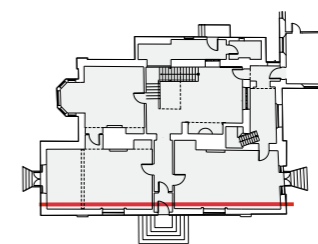


elevation location plan

Southern frontage exterior

key

- Phase 1: 17thC
- Phase 2: Mid to Late 18thC
- Phase 3: Late 18th/early 19thC
- Phase 4: Late 18th/early 19thC
- Phase 5: 19th C infill ?
- Phase 6: modern

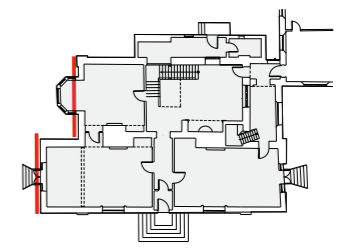


elevation location plan

Southern frontage interior



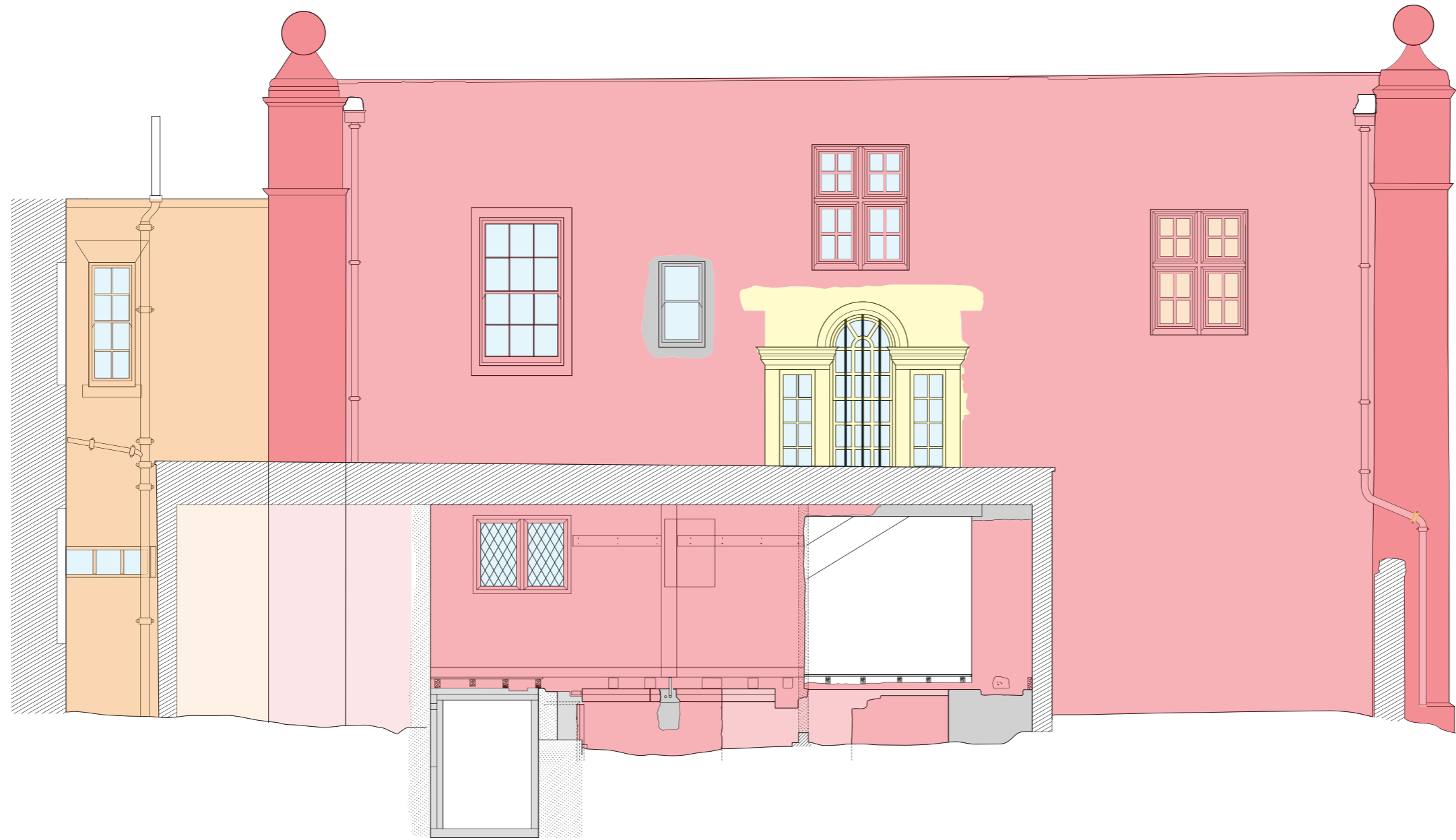
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  - Phase 3: Late 18th/early 19thC
  - Phase 4: Late 18th/early 19thC
  - Phase 5: 19th C infill ?
  - Phase 6: modern



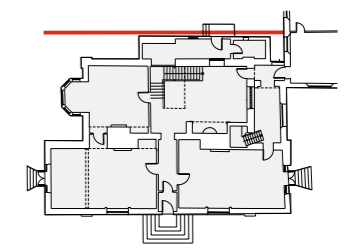
elevation location plan

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metres

Western frontage exterior



- key
- Phase 1: 17thC
  - Phase 2: Mid to Late 18thC
  - Phase 3: Late 18th/early 19thC
  - Phase 4: Late 18th/early 19thC
  - Phase 5: 19th C infill ?
  - Phase 6: modern



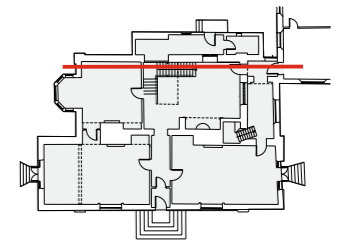
elevation location plan

Northern frontage exterior



- key
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  - Phase 3: Late 18th/early 19thC
  - Phase 4: Late 18th/early 19thC
  - Phase 5: 19th C infill ?
  - Phase 6: modern

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metres



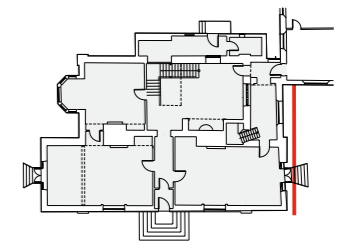
elevation location plan

Northern frontage interior



- key
- Phase 1: 17thC
  - Phase 2: Mid to Late 18thC
  - Phase 3: Late 18th/early 19thC
  - Phase 4: Late 18th/early 19thC
  - Phase 5: 19th C infill ?
  - Phase 6: modern

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metres

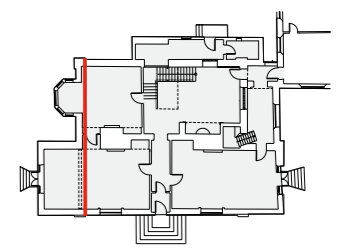


elevation location plan

Eastern frontage exterior



- key
- Phase 1: 17thC
  - Phase 2: Mid to Late 18thC
  - Phase 3: Late 18th/early 19thC
  - Phase 4: Late 18th/early 19thC
  - Phase 5: 19th C infill ?
  - Phase 6: modern



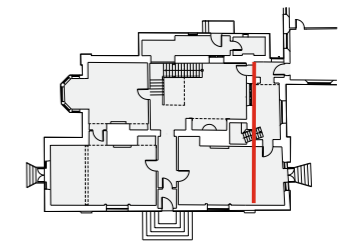
elevation location plan

Western Gable interior





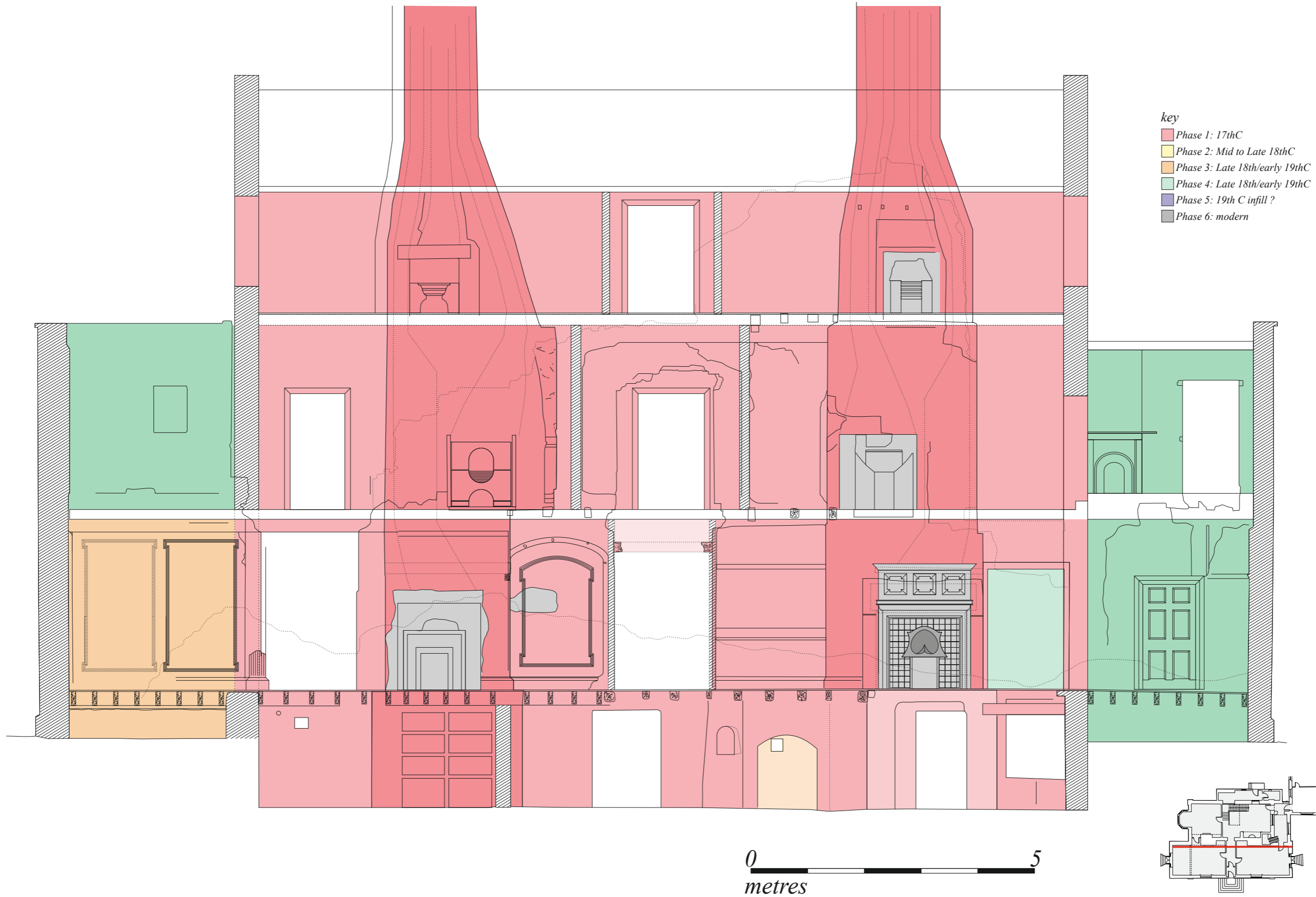
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  - Phase 4: Late 18th/early 19thC
  - Phase 5: 19th C infill ?
  - Phase 6: modern



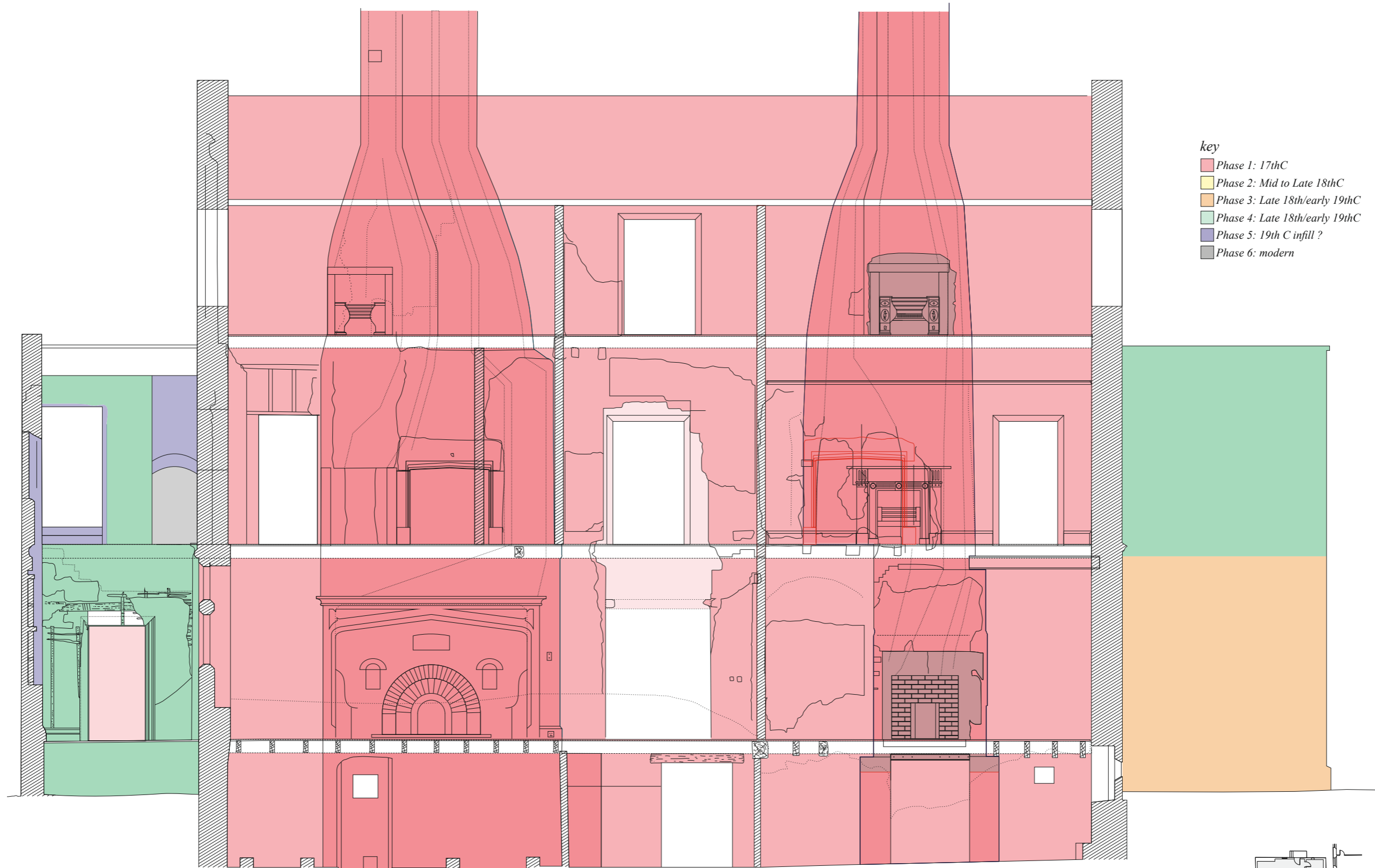
elevation location plan



Eastern Gable interior

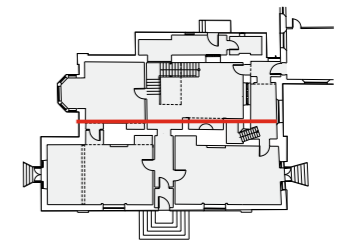


Central spine wall southern face



- key
- Phase 1: 17thC
  - Phase 2: Mid to Late 18thC
  - Phase 3: Late 18th/early 19thC
  - Phase 4: Late 18th/early 19thC
  - Phase 5: 19th C infill ?
  - Phase 6: modern

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metres

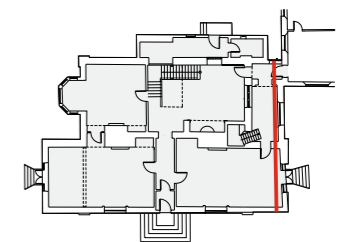


elevation location plan

Central spine wall northern face

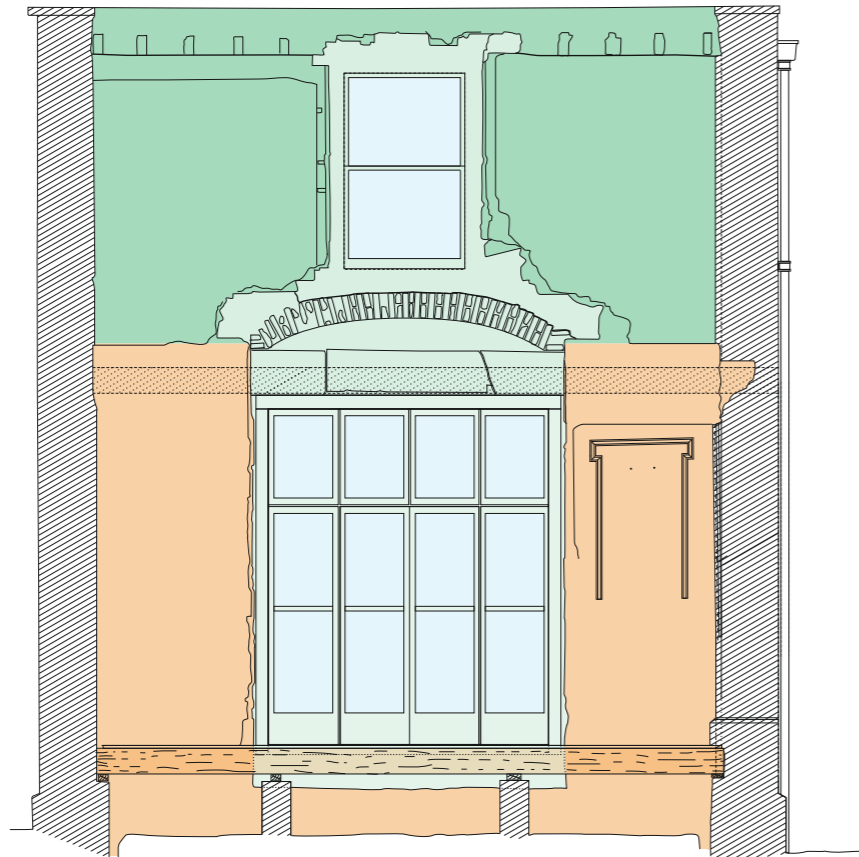
key

- Phase 1: 17thC
- Phase 2: Mid to Late 18thC
- Phase 3: Late 18th/early 19thC
- Phase 4: Late 18th/early 19thC
- Phase 5: 19th C infill ?
- Phase 6: modern



elevation location plan

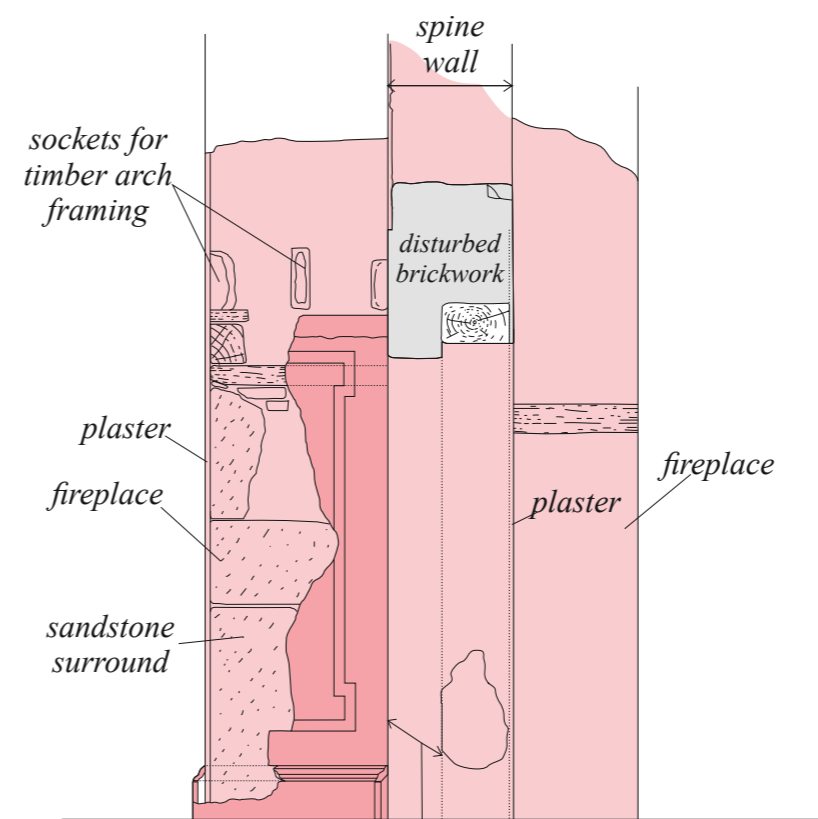
Eastern extensions interior



0 5  
metres

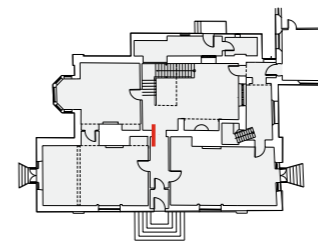


elevation location plan



brickwork built up against  
timber frame and left unfinished

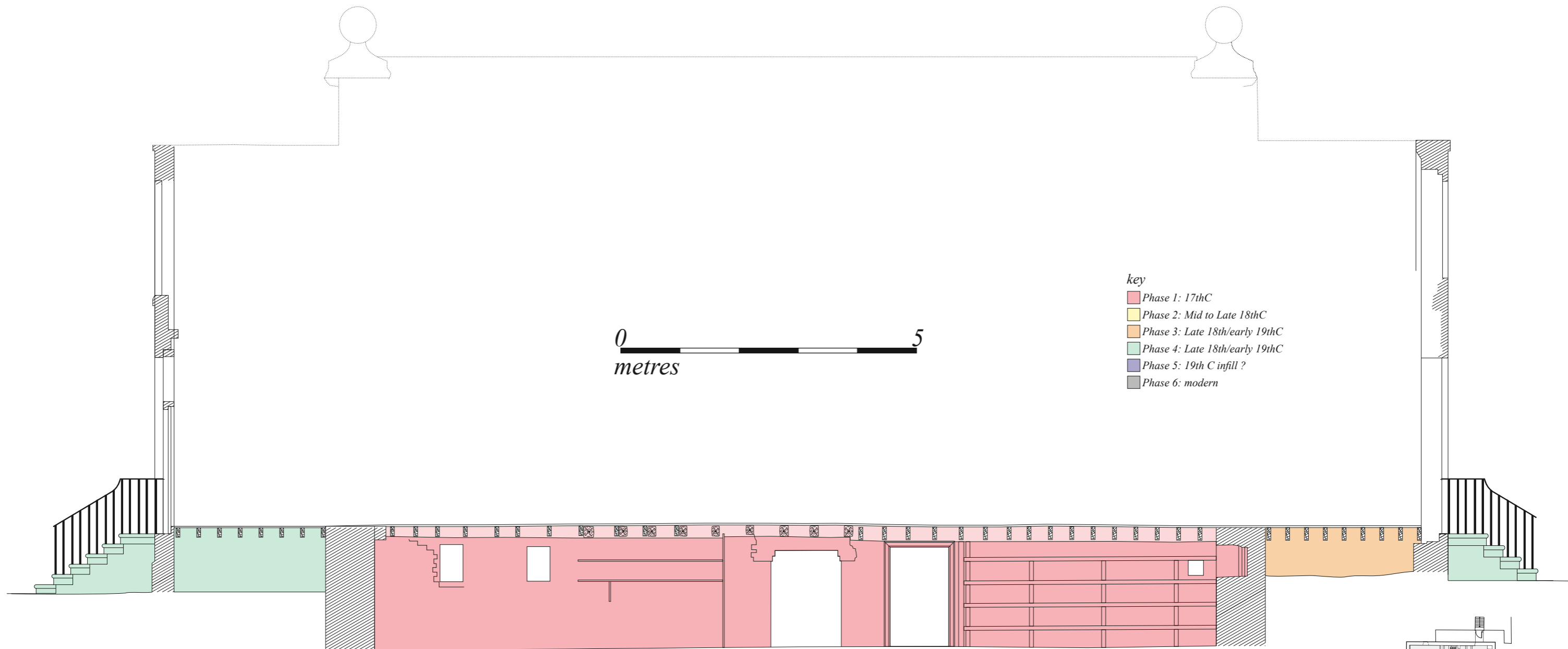
0 2  
metres



elevation location plan

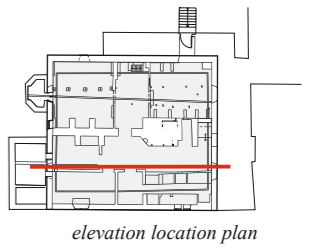
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- Phase 2: Mid to Late 18thC
- Phase 3: Late 18th/early 19thC
- Phase 4: Late 18th/early 19thC
- Phase 5: 19th C infill ?
- Phase 6: modern

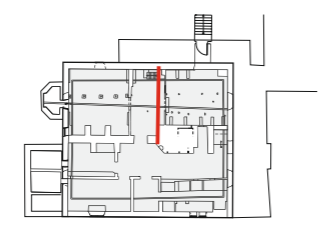
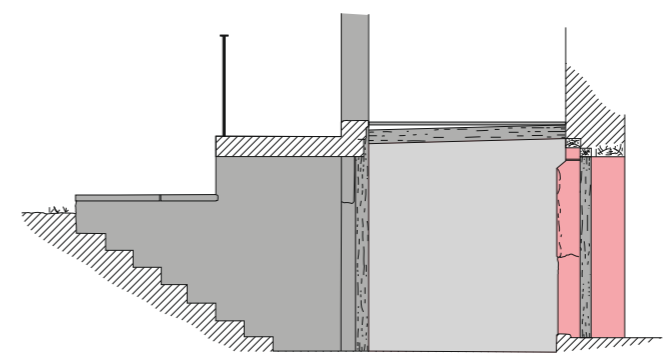
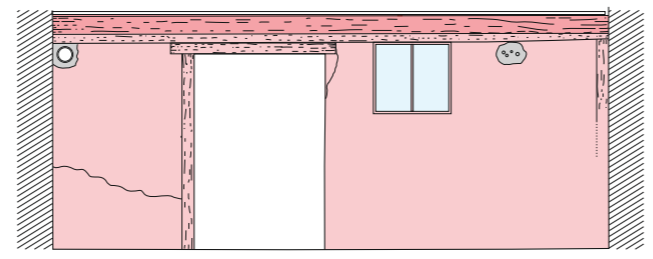
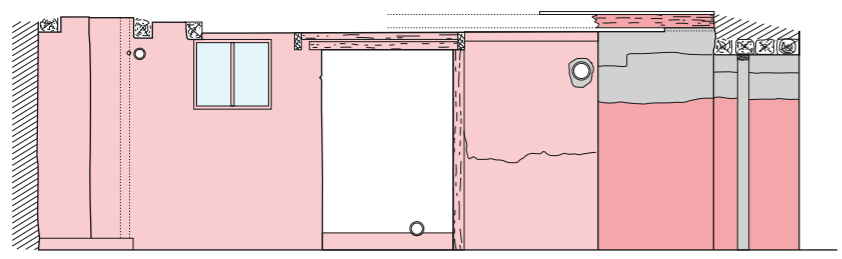


0 5  
metres

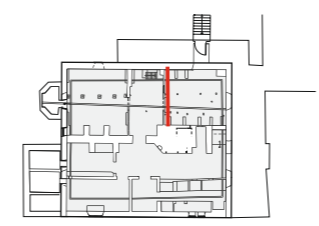
- key
- Phase 1: 17thC
  - Phase 2: Mid to Late 18thC
  - Phase 3: Late 18th/early 19thC
  - Phase 4: Late 18th/early 19thC
  - Phase 5: 19th C infill ?
  - Phase 6: modern



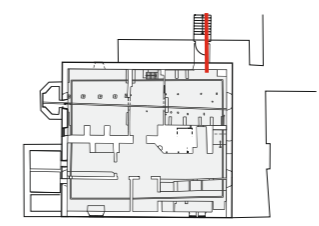
elevation location plan



elevation location plan



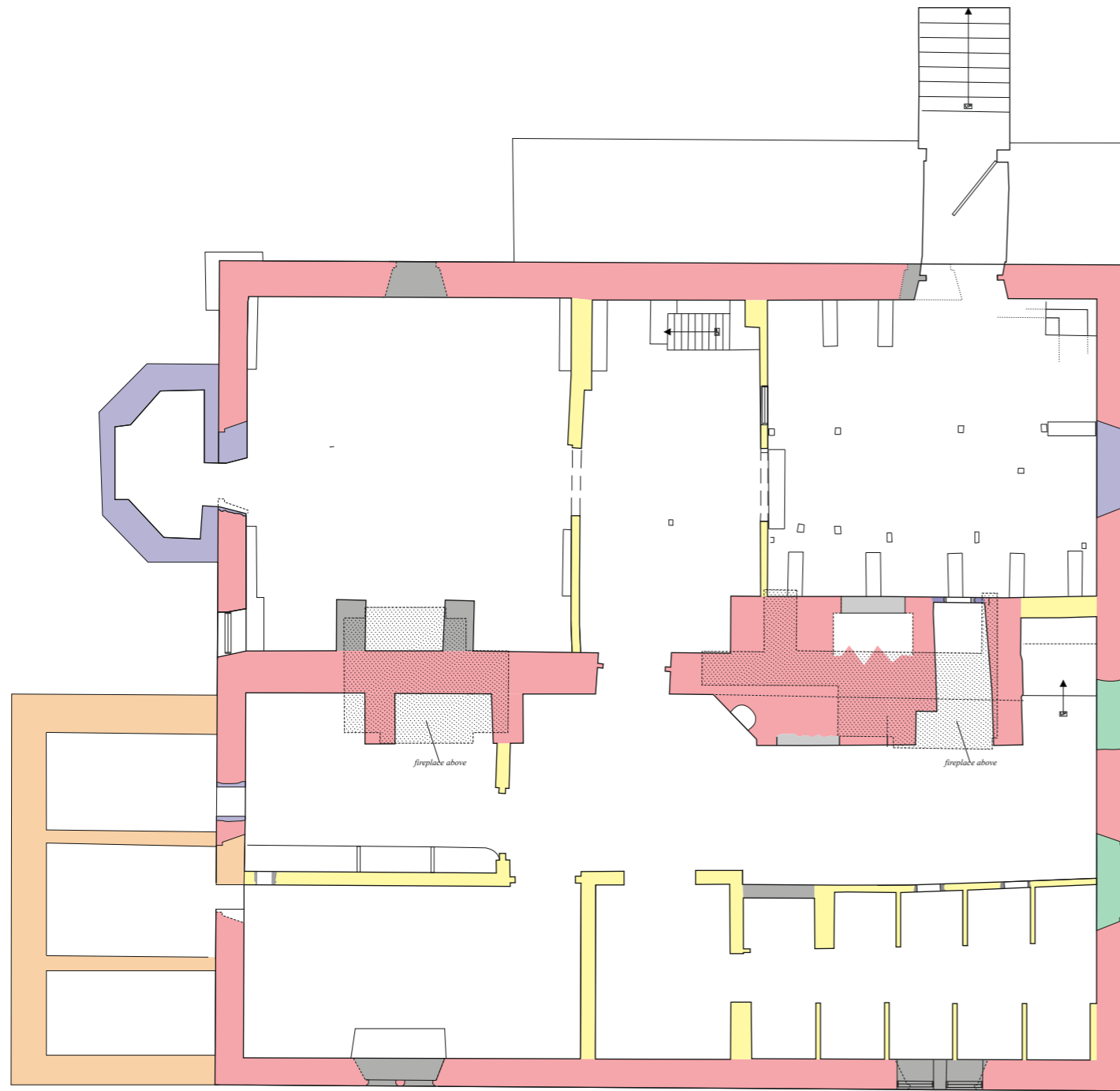
elevation location plan



elevation location plan

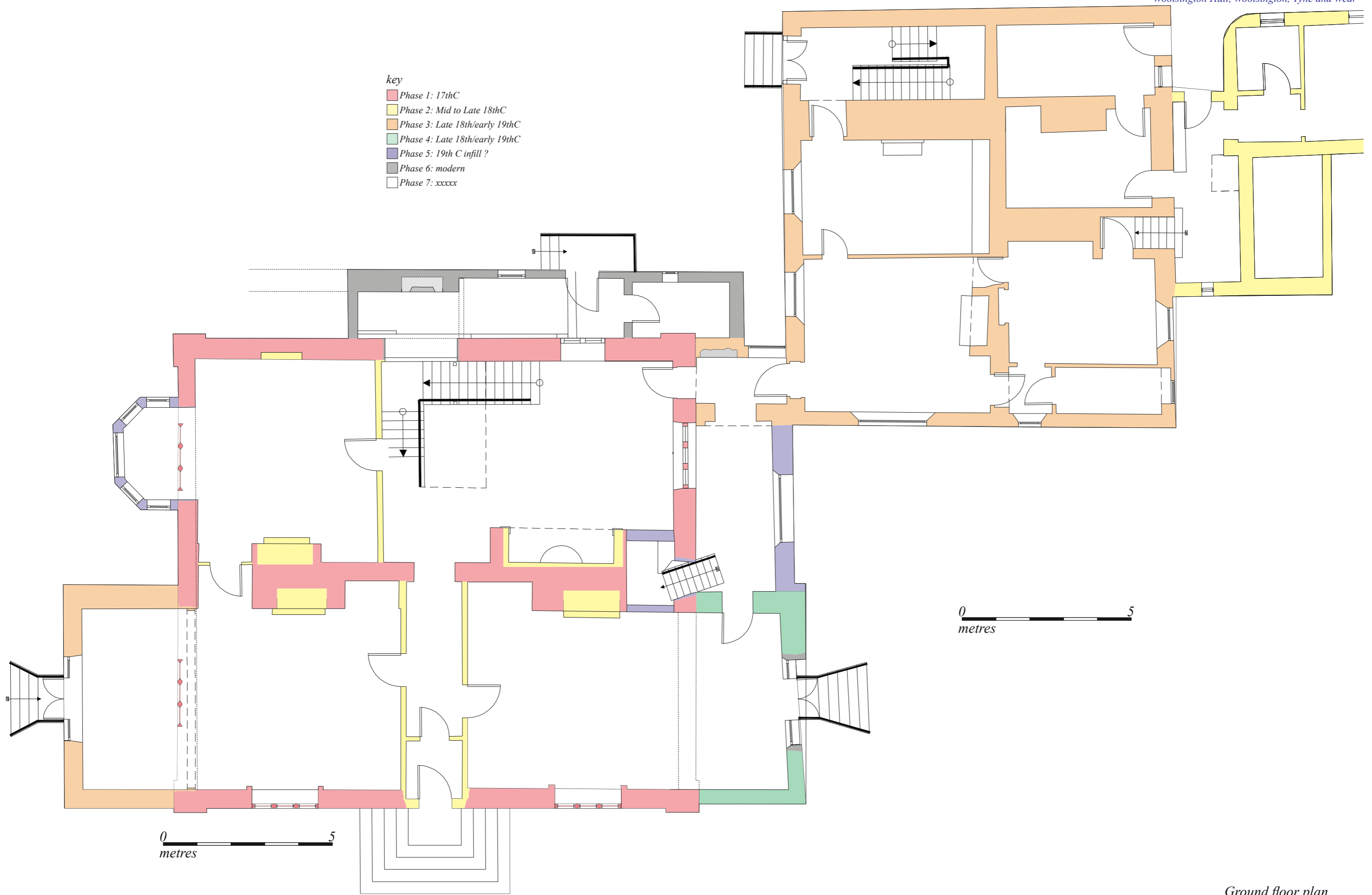
Basement elevations

- key
- Phase 1: 17thC
  - Phase 2: Mid to Late 18thC
  - Phase 3: Late 18th/early 19thC
  - Phase 4: Late 18th/early 19thC
  - Phase 5: 19th C infill ?
  - Phase 6: modern
  - Phase 7: xxxxx



Basement plan

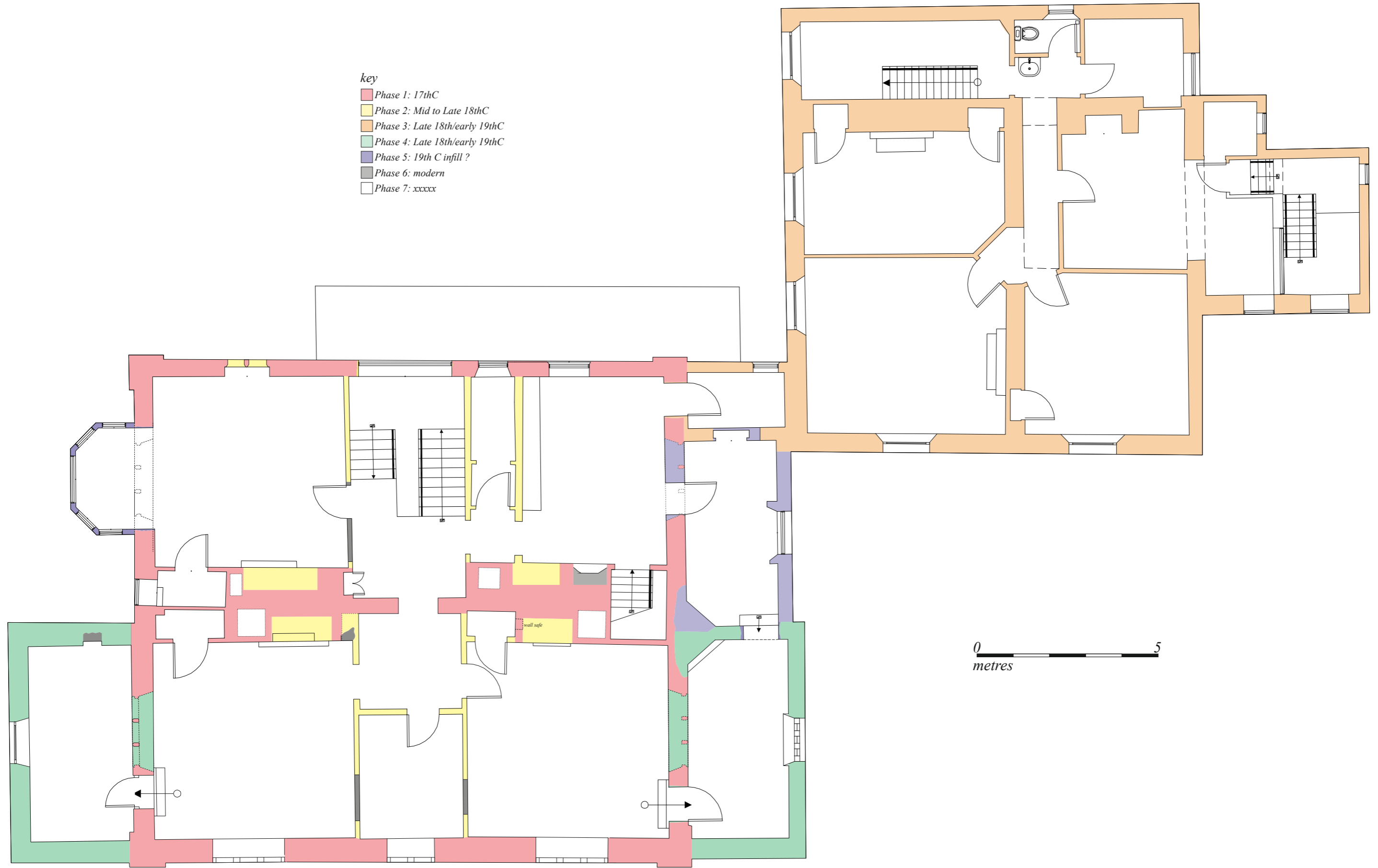
- key
- Phase 1: 17thC
  - Phase 2: Mid to Late 18thC
  - Phase 3: Late 18th/early 19thC
  - Phase 4: Late 18th/early 19thC
  - Phase 5: 19th C infill ?
  - Phase 6: modern
  - Phase 7: xxxxx



Ground floor plan

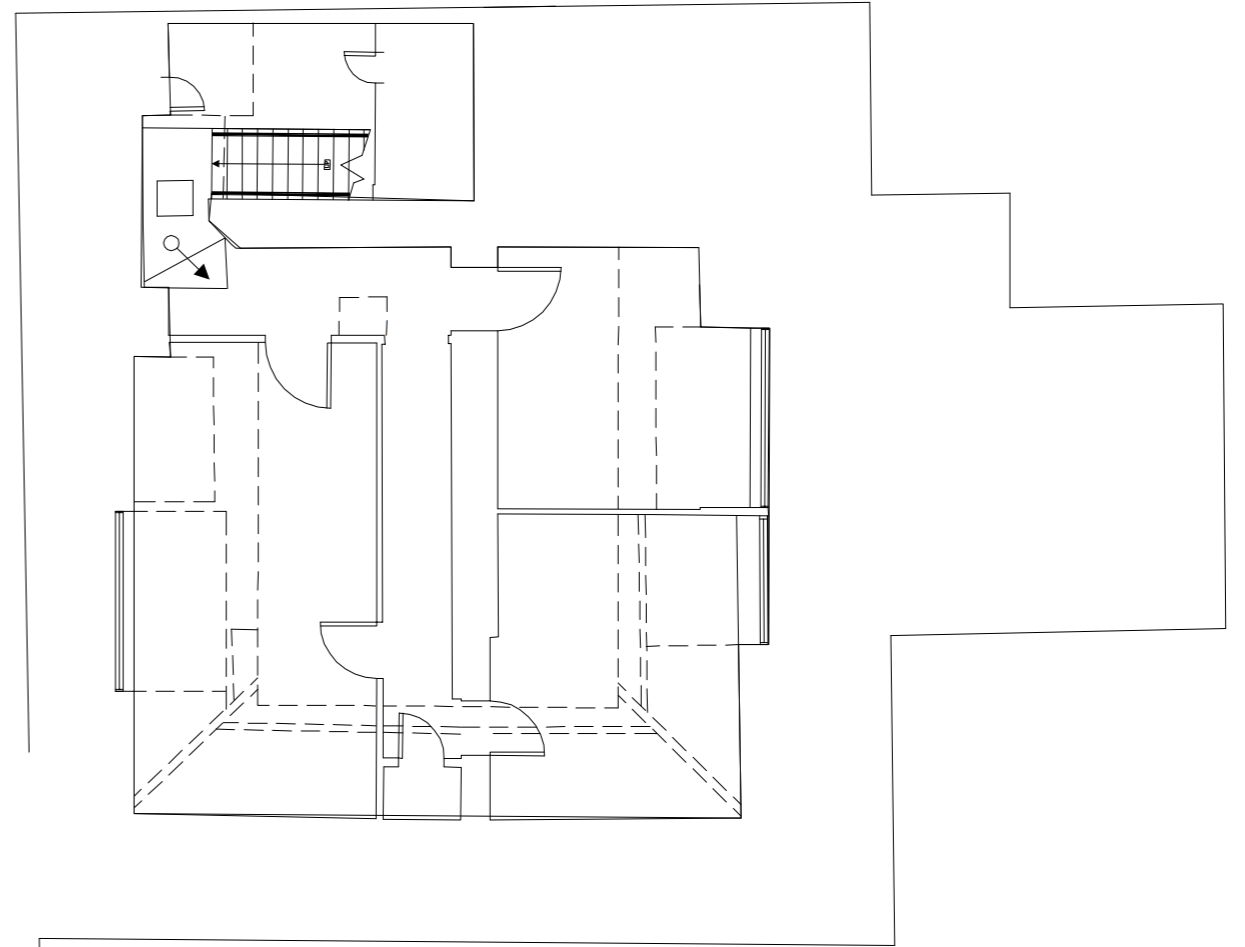
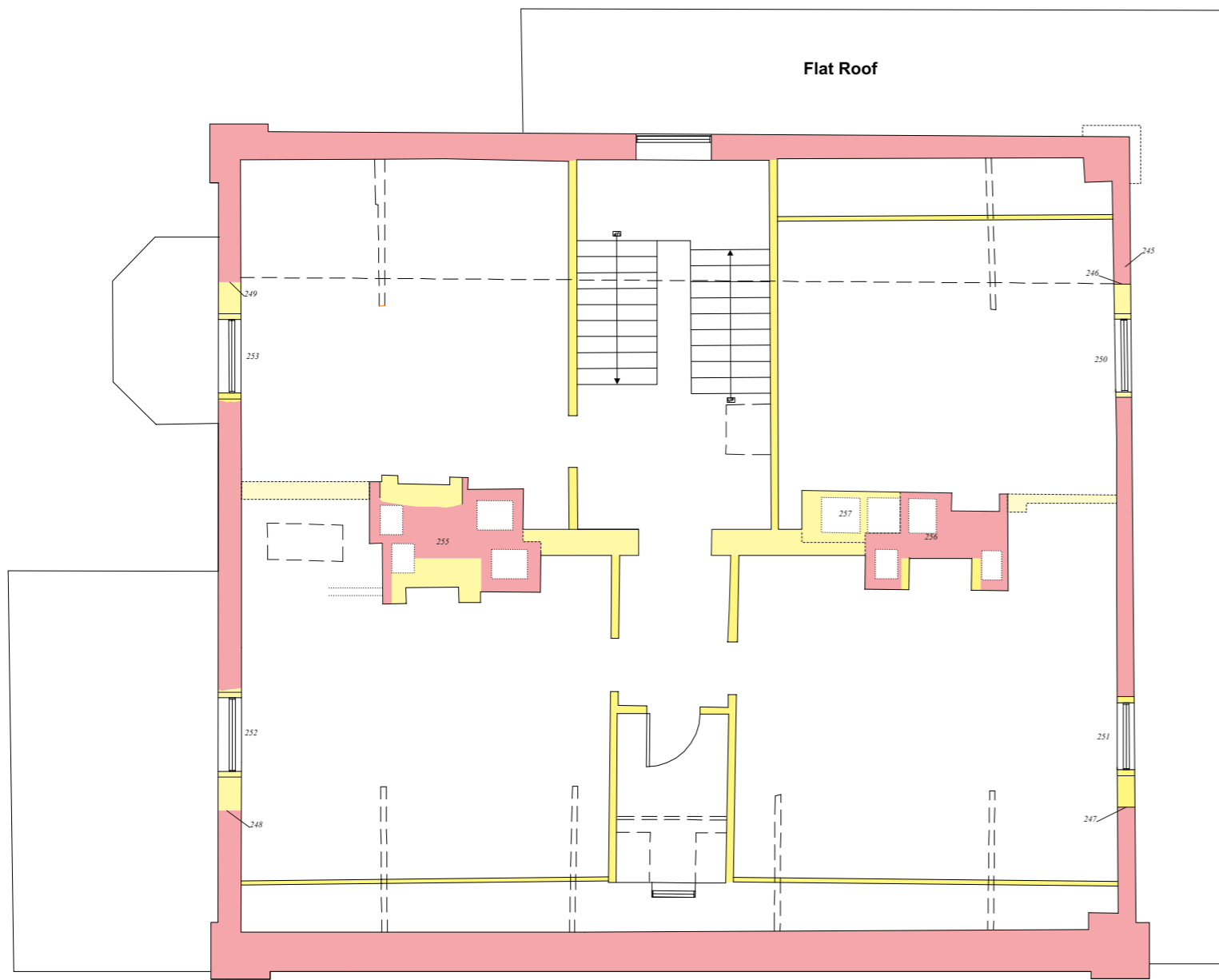


- key
- Phase 1: 17thC
  - Phase 2: Mid to Late 18thC
  - Phase 3: Late 18th/early 19thC
  - Phase 4: Late 18th/early 19thC
  - Phase 5: 19th C infill ?
  - Phase 6: modern
  - Phase 7: xxxxx



First floor plan

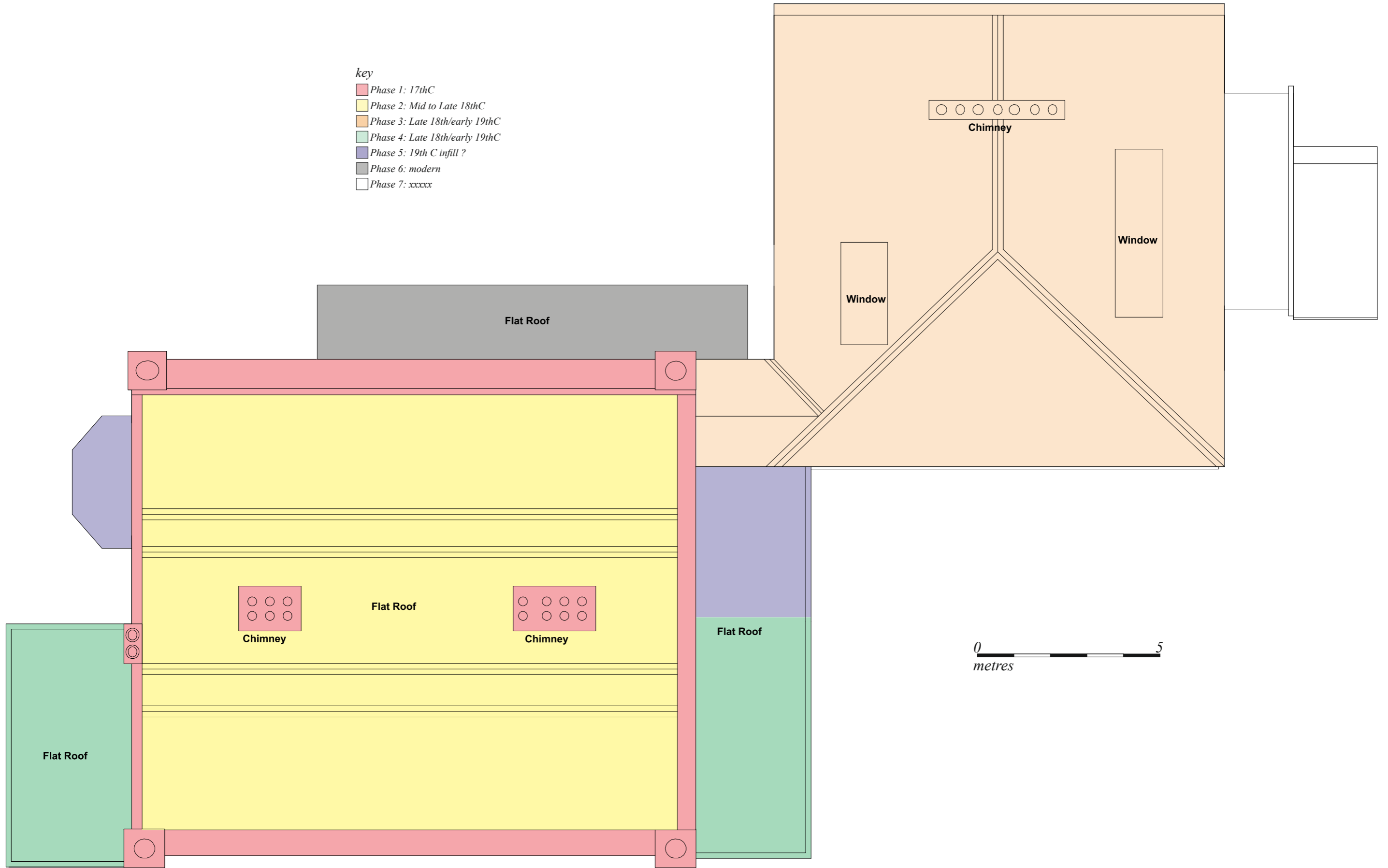
- key
- Phase 1: 17thC
  - Phase 2: Mid to Late 18thC
  - Phase 3: Late 18th/early 19thC
  - Phase 4: Late 18th/early 19thC
  - Phase 5: 19th C infill ?
  - Phase 6: modern
  - Phase 7: xxxxx



0 5  
metres

Second floor plan

- key
- Phase 1: 17thC
  - Phase 2: Mid to Late 18thC
  - Phase 3: Late 18th/early 19thC
  - Phase 4: Late 18th/early 19thC
  - Phase 5: 19th C infill ?
  - Phase 6: modern
  - Phase 7: xxxxx



Roof plan