

The JESSOP Consultancy

EAST CORRIDOR, STOWE HOUSE

Buckinghamshire



Historic Building Survey
December 2013

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SUMMARY OF PROJECT DETAILS

OASIS ID:	Thejesso1-165142
TJC Project Code:	STO13
Project Type(s):	Building Recording Archaeological Photographic Survey
National Grid Reference:	SP 67463 37436 (centered); MK18 5DF; 130m asl.
County:	Buckinghamshire
Parish:	Stowe
Local Authority:	Aylesbury Vale
Planning Reference:	N/A
Designation Status(s):	Grade I listed building – No.1289788 Grade I Historic Garden – No.1000198 Stowe Conservation Area – designated 18.07.90
HER Record No:	0420801000 - Buckinghamshire
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Reviewed by:	Karen E Walker MIfA, FSA
Date:	December 2013

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NON-TECHNICAL SUMMARY

During emergency repairs to the floor structure of the East Corridor at the Grade I listed Stowe House in Buckinghamshire, an archaeological record was made by The JESSOP Consultancy following the exposure of historic floor timbers. The survey was undertaken at the request of the Stowe House Preservation Trust and their project Architects, Purcell.

The existing stone floor had suffered considerable deflection and it was found that the supporting floor beams had partially failed on more than one occasion. The recording identified an inserted floor within the western half of the East Corridor, the eastern section, in contrast, was supported on brick vaulting above the longitudinal basement corridor known as Plug Street. An analysis of historic plans of Stowe indicated that the initial 1680s phase of the building had a staircase located in this position, although following a period of expansion in the 1730s, it had been replaced by the existing stone cantilevered stair at the east end of the corridor.

The majority of the floor structure, which comprised of a series of principal beams spanning north-south across the room, between which tenoned and pegged joists were attached, dated to this phase of remodeling. Above the joists wooden boards were secured on small side batons to form a level surface to support the sub-floor beneath the stone flagstones. The only surviving elements of the phase 1 floor that were still in-situ were the sawn-off ends of two principal beams, one containing redundant mortices for the former floor joists. It was also noted that many of the boards used to form a level surface for the stone flooring were cut with angled edges, one of which contained a rounded edge. It is concluded that these boards are, in fact, the remnants of the timber treads from the former staircase, which included both straight and winder sections of steps. Additional timbers, and metal straps had been added to the early 18th-century floor prior to this current programme of repair, suggesting that the inserted phase 2 structure was unstable and poorly engineered.

This historic building survey represents a Level 3 record, as detailed in guidance prepared by English Heritage. This report will be submitted to the Buckingham Historic Environment Record for inclusion within their archaeological archives and uploaded to the Online Archaeological Database of Archaeological Projects – OASIS (No. Thejesso1-16512).

It is recommended that any further interventions, or exposure of the historic fabric at Stowe House, is subject to appropriate archaeological monitoring and recording.

1 INTRODUCTION

BACKGROUND

This document is an interpretative report on a programme of emergency historic building recording of the timber floor structure beneath the East Corridor of Stowe House in Buckinghamshire (**Figure 1**). The building is a Grade I Listed structure dating to the 1680s. It is currently in use as an Independent Boarding School.

The floor of the East Corridor was in a state of partial collapse and essential strengthening was required to rectify this, which involved removing the stone flagstones and the introduction of new steelwork within the floor structure. An archaeological record was made during this programme of repair in August 2013.

AIMS OF THE FIELDWORK

The aim of the survey was to make a rapid photographic and measured record (EH Level 3; English Heritage 2006) prior to, and during the repair of the floor structure.

PRINCIPAL DELIVERABLES DERIVING FROM THIS WORK:

- A descriptive account of the structural components of the floor, accompanied by a measured and photographic survey;
- The submission of a bound and digital report and site archive to the Stowe House Preservation Trust.

DISSEMINATION

Printed and digital copies of this report will be distributed to the Client, and Buckinghamshire HER. In addition, once permission has been obtained from the Client, a digital copy will be uploaded to the OASIS (Online Access to the Index of archaeological investigations) with the reference number: **thejesso1-165142**.

ACKNOWLEDGEMENTS

Guidance and advice regarding the development of the house has been provided by Nick Morris (Director of Operations at Stowe School) and Anna McEvoy (Stowe Learning and Research Manager). Ian Bird (Senior Contract Manager at FWA) and Ben Eagles (FWA Site Manager) arranged site access and provided help during the site survey. James Mackintosh and Marie Purcell from Purcell are thanked for sharing their knowledge of the building and for providing plans and background information.

2 SITE LOCATION

LOCATION

Stowe House is located 4km to the north-west of Buckingham (**Figure 1**), at the end of a formal entrance avenue. It is centred on NGR SP 67463 37436 and is c.130m above sea level. The house is a Grade I listed building and is located within a Grade I registered park and garden, that together, combine to form the Stowe Conservation Area.

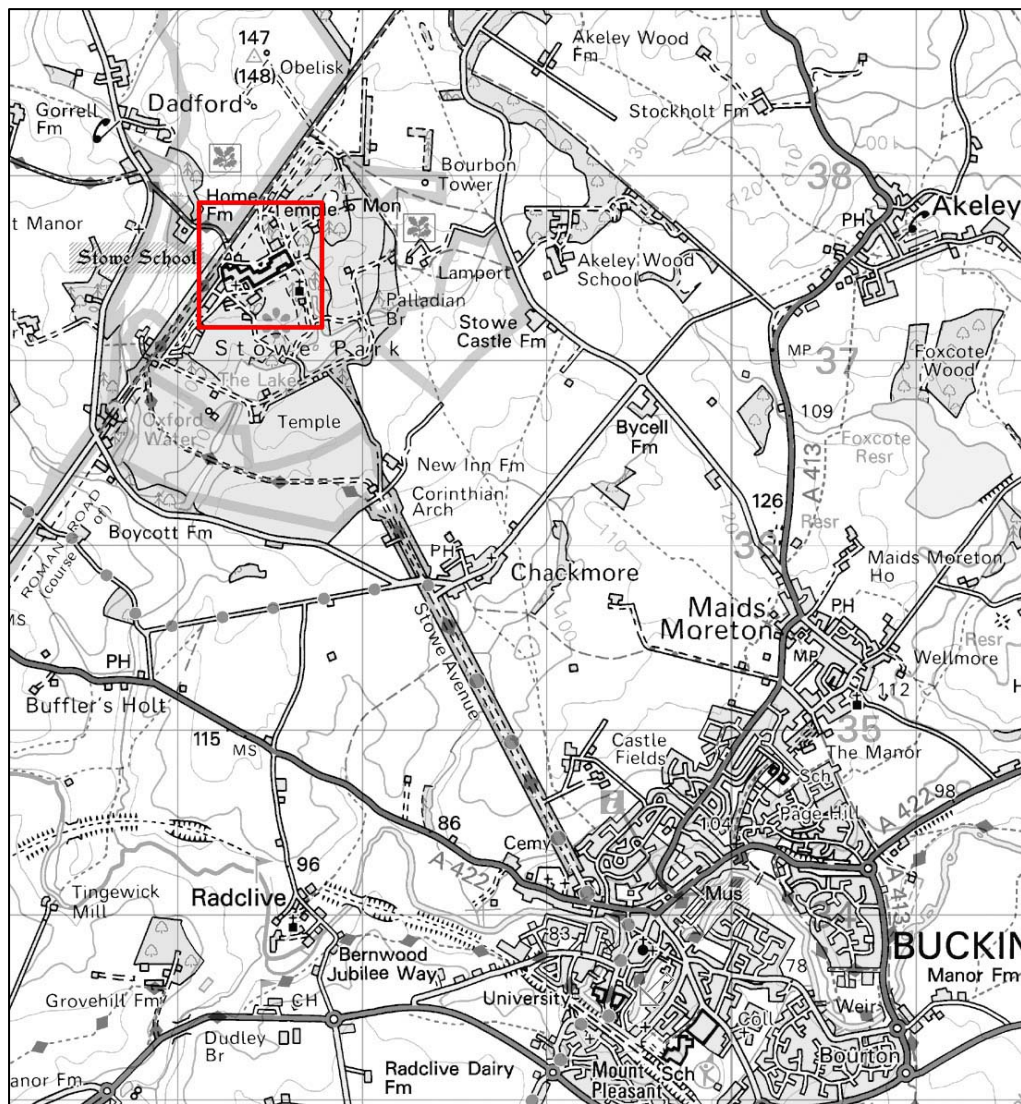


Figure 1: Location map of Stowe House (marked with a red rectangle).

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LAYOUT

The layout of Stowe House, is typical of Italianate influenced houses of the 18th century, with the principal floor being at first floor level, referred to as the Piano Nobile (**Figure 2**). The ground, or basement, level provided service and ancillary functions for the household. The house is approached from the north, via the north hall. This then provides access into the west and east corridors on either side and a link to the marble hall and the state rooms along the south façade of the building.

The east corridor has a series of doorways that give access to ancillary rooms and spaces, although its principal role is to facilitate access to the upper floor (**Appendix 1.1**). The corridor is 4.4m wide and has a cantilevered stone staircase at its east end with open quarter landings and is lit from a window at first floor level (**Appendix 1.2**). It is one of the principal access routes of Stowe School, connecting the North Hall, with the Ante-library and on into Grenville and Chandos houses.

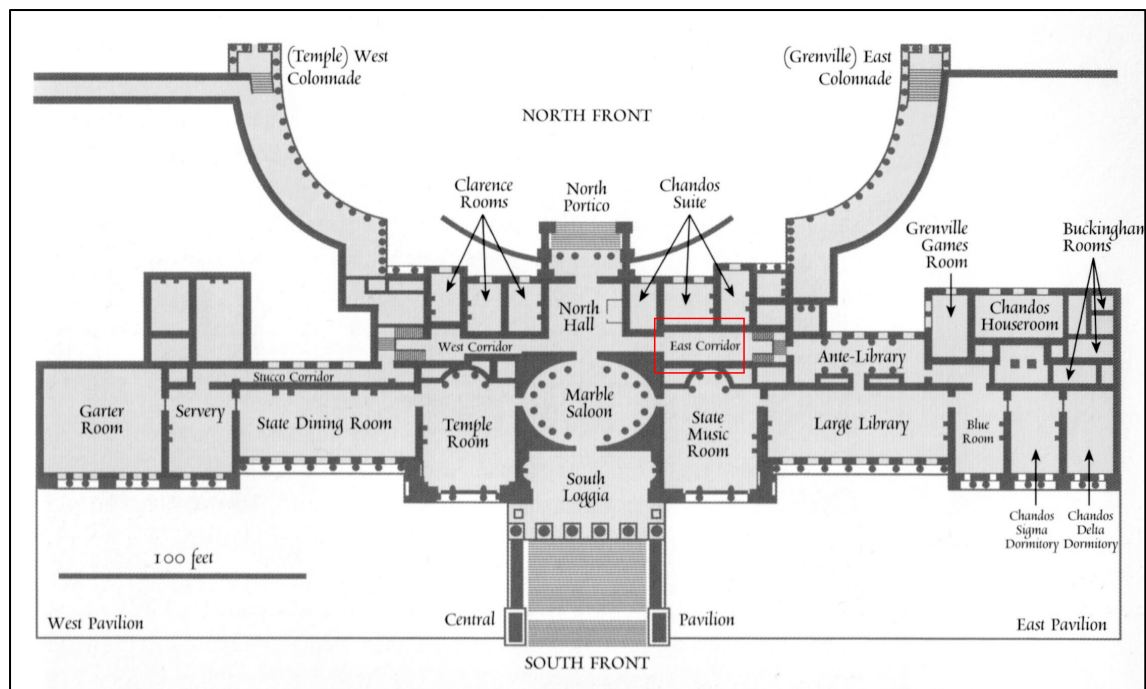


Figure 2: A plan of the state rooms and Piano Nobile (first floor), east corridor marked with red rectangle; after Bevington 2002.

3 HISTORICAL BACKGROUND

THE HOUSE (AFTER BEVINGTON 2002)

The original house at Stowe was built between 1677-83 for Sir Richard Temple, replacing an earlier manor house, and it forms the core of the current house that exists today. The original design was thirteen bays in length and four storeys in height (**Figure 3**).



Figure 3: South Front of Stowe House, c.1683 (after RCHME and Bevington 2002).

The house was designed by William Cleare, Sir Christopher Wren's master joiner, and was a double cube design built with brick and stone dressings to the openings. Perhaps the most unusual feature was that the side elevations were stepped in, thus giving the impression of projecting corner towers. The building was constructed by Thomas Miler (bricklayer) and John Heynes (carpenter), for a sum of £2,600 (Bevington 2002, 11).

Internally, the layout was such that it could accommodate a large staff and guests. Bevington (2002, 8) describes that the arrangement was such that there was a dressing room in the two-bay recesses of the façade, bedchambers in the two bay wings and a closet in each corner pavilion, or tower (**Figure 4**). Between these suites or rooms, were connecting staircases, that mirrored one another on either side of the house and provided access throughout the various floors of the house.

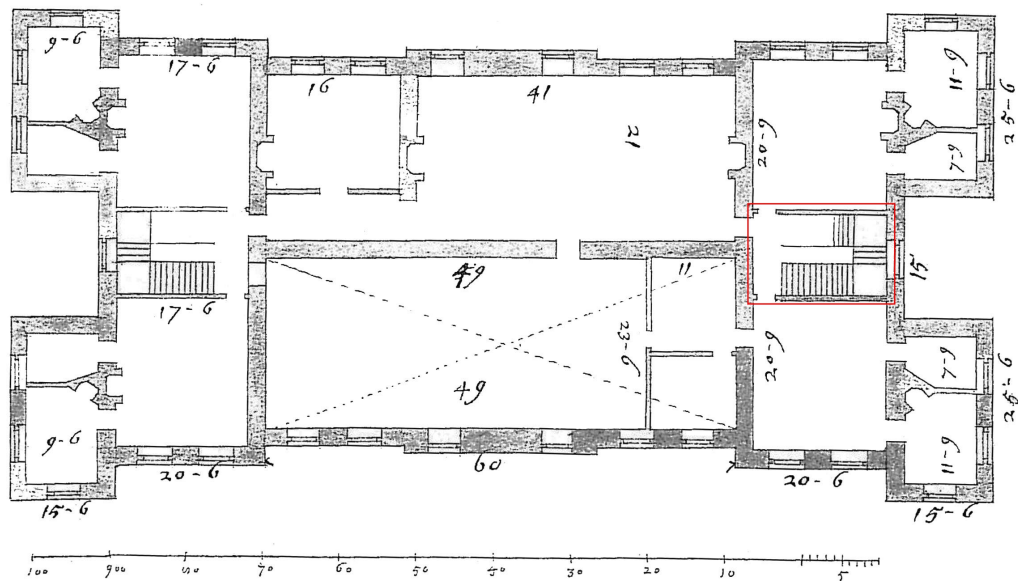


Figure 4: Late 17th-century first floor plan of Stowe House; east corridor marked with a red rectangle (provided by James Mackintosh of Purcell).

Additions to the original design included a cupola in the centre of the flat roof in December 1688, although it was not until the 1720s, when Sir John Vanbrugh enlarged the dining room to form the Clarence suite that the remodeling of the house in the 18th century got underway.

The development of the house is complex, and virtually none of the original 17th-century fabric is visible today, although this programme of archaeological recording has demonstrated that substantial remains do survive, being encased within subsequent phases of construction.

The principal phases of development can be summarized as follows:

1677-1683	Brick house built for Sir Richard Temple by William Cleare
1720s-1733	Addition of north portico by Sir John Vanburgh and internal remodeling
1740s-1760s	Expansion of west and east state apartments
1770s	The south front was re-designed by Robert Adam and quadrant colonnades were added
1800s	East gallery re-modeled into the Large Library, Egyptian Hall and Gothic Library added on the ground floor by Sir John Soane

THE EAST CORRIDOR (AFTER DIX 2012)

The East Corridor is believed to be a contemporary of the North Hall, dating from the 1730s, and corresponding with a second staircase in the west half of the house. The ceiling is adorned with Francesco Sleter's *Fame and Victory*, an original painting that survived Earl Temple's remodelling in the 1770s. The corridor was a secondary route through the house, and notably less imposing than the enfilade linking the state rooms along the South Front.

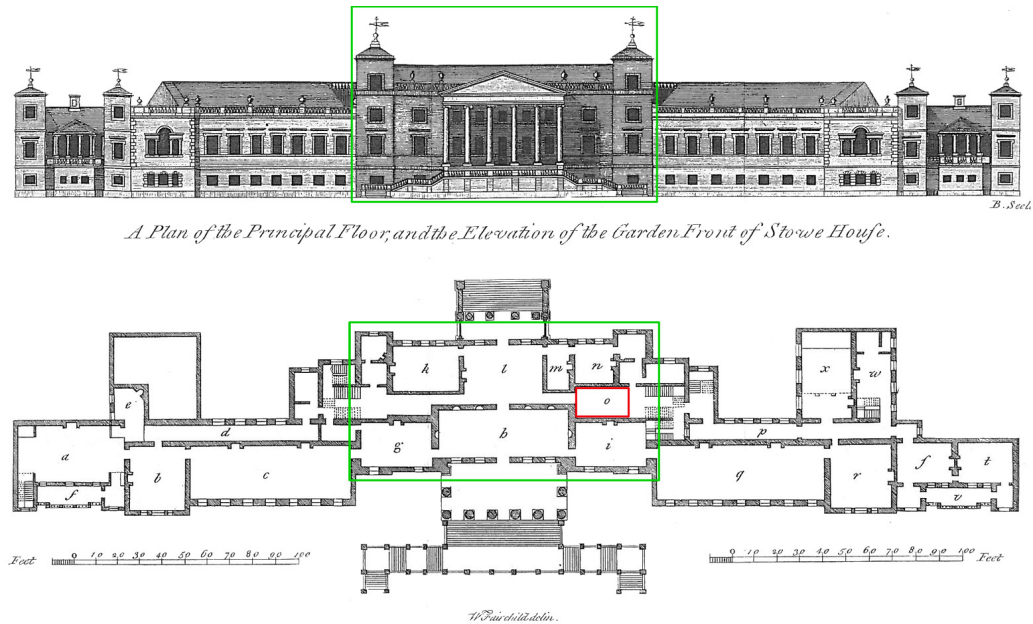


Figure 5: Plan and elevation of the principal floor at Stowe in 1766. The core of the original house is outlined in green and the east corridor is marked in red.

There is only one identified archive reference in the Huntington Library to work being undertaken in the East Corridor, although the nature of such work is unclear: "3 June 1775 pd Ed Batchelor for mason work To work at the East Coridore".

Despite being identical in design to the cantilevered staircase to the west of the North Hall, from 1762 the stair in the East Corridor has been identified as '*the Grand Staircase*', implying that it was considered to have greater significance in the arrangement of the house.

The limited reference and archive material from the 19th century mainly concerns the decoration of the corridor and there is only limited comment, if any, in the published guidebooks for visitors to the house. In 1817 the paintings above the Grand Staircase are attributed to Jones, and in 1848 the Corridor was filled with antiquities gathered during Grand Tours.

4 METHODOLOGY

METHODOLOGY

This scheme of archaeological recording has been undertaken in accordance with the guidelines issued by the Institute for Archaeologists (IfA 2008), and English Heritage (2006) and with industry best practice. The survey represents a Level 2-3 survey, comprising written notes, measured drawings, record photography, followed by archive research and the preparation of this report.

The photography comprised 35mm b/w and digital images, which included a metric scale of an appropriate size, and positioned in suitable locations within each frame. A written register and location plan have been used to document the location of all photographs as part of this archive.

It should be noted that none of the opening up work was observed, and the archaeological recording occurred after the flagstones and underlaying layer of bedding sand and mortar had been removed.

NOMENCLATURE

To aid the recording and overall interpretation of the floor structure within the East Corridor the individual elements have been broken down as follows and as illustrated in **Figure 6**.

Structural elements:

- The floor is supported on a series of timber beams that are orientated north-south and are labeled as *principal beams* (e.g. **P1**).
- The principal beams divided the floor into three *bay divisions* (e.g. **Bay 1**), numbered from west to east.
- Spanning between the principal beams are floor joists, orientated west-east. They are numbered according to which bay they are located in and in sequence from north to south (e.g. **J2.1**, of **J3.7**).
- Additional structural timbers used to secure parts of the floor or the surrounding building, are labeled as *timbers* 1-6 (e.g. **T4**).
- A layer of thin planks is nailed on to batons between the joists, and are labeled as *boards*. Due to the large quantity of these planks none are individually numbered.

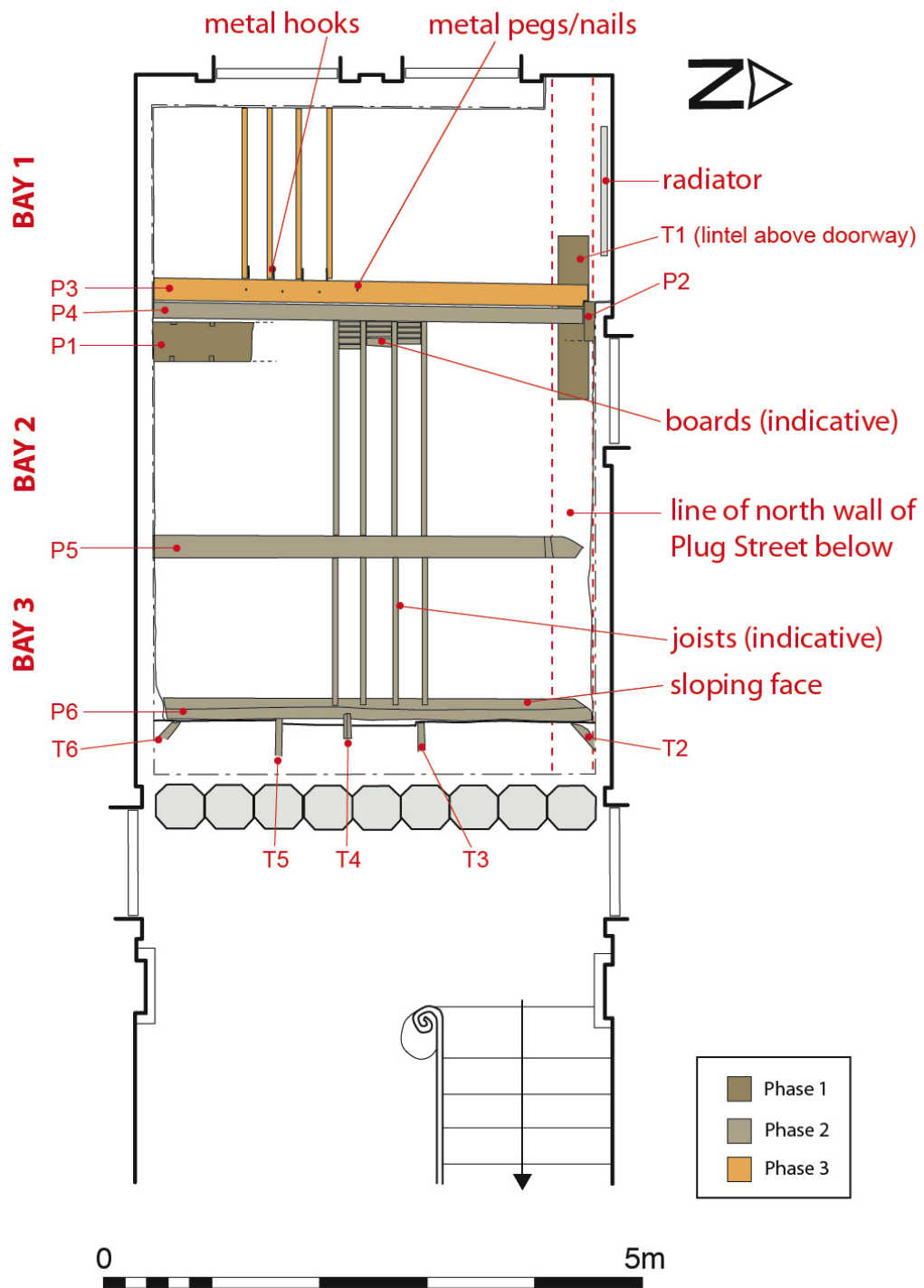


Figure 6: Layout of principal structural elements within exposed floor of East Corridor.

5 OBSERVATIONS

INTRODUCTION

This section of the report describes the structural development of the western half of the floor of the East Corridor and should be read in conjunction with the photographs included as **Appendix 1**, and **Figure 6**. A total of five phases of change and alteration have been identified, each of which is described below.

ARCHAEOLOGICAL OBSERVATIONS

PHASE 1 – THE ORIGINAL HOUSE (C. 1680s)

In the 1680s, the East Corridor can be regarded as a connecting space containing a staircase linking together the various floors and rooms in the east side of the house. Whilst there is illustrative evidence for such a staircase with an open-well design and quarter landings, on a late 17th-century plan from the Huntington Library (**Figure 4**), no definitive evidence for such a stair survives today. The investigations of the floor structure did, however, identify two timbers **P1** (**Appendix 1.3**) and **P2** (**Appendix 1.4**) that are interpreted as being from this initial phase of construction.

Timbers **P1** (**Figure 6**) and **P2** project from either side of the room and are of similar dimensions - c.35cm wide and 15cm thick. In phase 2, they have both been reduced in width, but it is likely that they would have once extended further into the centre of the room. The timbers are within the western third of the East Corridor, although it is important to note that they are not in direct alignment with one another, being 2.1m and 2.32m from the west wall. This offset is difficult to interpret, although one explanation is that they originally connected with a structural element in the centre, or at one side of the room, such as a staircase that has subsequently been removed.

Additional evidence that **P1** and **P2** were separate timbers with differing functions within the floor structure is that unlike **P2**, **P1** has redundant mortices (**Appendix 1.5**); two on either side. The mortices would have been intended to securely locate floor joists and comprised of a recess for a central shouldered tenon, with an angled stub tenon below and a vertical peg above (**Appendix 1.6**). This form of joint is typical for floors dating to the late 17th century and indicates that the south-west part of the East Corridor was originally floored. This detail is significant in that it correlates with the plan from the Huntington Library (**Figure 4**), which depicts that the staircase to the upper floor started with a straight flight along the south wall, rising up from the south-west corner. Although not illustrated on the plan there may have been

a smaller 'service' stair that facilitated access to the basement against the north wall, thus perhaps explaining the lack of mortices for floor joists on **P2**.

There is additional circumstantial evidence for a staircase within this part of the house, in that many of the thin wooden boards that cover the phase 2 floor have angled edges (**Appendices 1.7, 1.8**). These are interpreted as the reused and cut down treads from a timber staircase. One of these angled boards still retained a rounded edge that would have formed the upper front edge, or nose, of such a tread. The majority of the boards were formed from planks with parallel edges, with widths of 11.5cm (4½"), 19cm (7½") and 23cm (9") being the standard sizes. Whilst there could be numerous explanations for the appearance of these boards, those that were angled may have originated as winders from a former staircase.

In the north-west corner of the room where the boards had been removed, the brick wall of the north corridor, Plug Street, in the basement below was recorded (**Appendix 1.9**). This comprised of hand-made bricks measuring 5cm x 11.5cm x 21cm, and laid in a buff coloured lime mortar. Below **P2**, that over sailed the wall was a secondary timber **T1**, partially encased within the top of this brickwork. **T1** is the upper face of a larger doorway lintel leading north off the basement corridor, and confirms that the opening was part of the original phase 1 layout of the house.

PHASE 2 – 18TH CENTURY RE-MODELING (C. 1740S-1760S)

The expansion of Stowe House in various stages during the 18th century included the remodeling of the East Corridor. The original staircase (**Figure 4**) was removed and the length of the room was approximately doubled (**Figure 5**), removing the exterior wall and inserting a new stone cantilevered staircase (**Appendix 1.2**). To support the stair and new masonry above the basement corridor, 'Plug Street', was extended with a brick vaulted ceiling, c.6m from the west wall of the East Corridor. Corresponding with the edge of this vault, (**Appendix 10**) two vertical scars opposing scars in the north and south walling of the corridor were noted and are interpreted as representing the edge of the outer wall of the phase 1 building.

The relocation of the staircase involved the removal of the earlier timber structure, which is when the principal floor beams **P1** and **P2** were sawn back and a new timber deck was inserted (**Appendices 10 and 11**) to support a flagstone floor (**Appendix 1.12**). The timber deck was supported on three timbers **P4**, **P5**, and **P6**, orientated north-south. Each of these was significantly smaller than the phase 1 beams, measuring 16cm x 19cm, 18cm x 22.5cm, and 19cm x 28cm respectively. A series of small secondary timbers **T2 – T5** (**Appendices 1.13 – 1.15**) were associated with securing **P6** to the core-work of the phase 2 brick vault

(**Appendix 1.16**) presumably this junction of different materials was considered as a point of weakness.

All of the three timbers **P4**, **P5**, and **P6**, contained features such as redundant mortices (**Appendix 1.13**), cut notches (**Appendix 1.17**), or scribed lines (**Appendix 1.18**) that had no relationship to the inserted floor indicating that they were re-used, presumably from part of the demolished phase 1 building. It has not been possible, however, to establish their former use, but they have details that are characteristic features commonly found on roof timbers and the various structural elements that combine to form a roof truss.

Attached at right angles to **P4**, **P5**, and **P6**, were secondary joists (**Appendix 1.19**), each tenoned into the principal beams. Interestingly, not all were pegged from above (**Appendix 1.20**), presumably indicating that the framing was not pre-laid out and drilled before being transferred into the building. The joists varied in size, but on average were 5-7cm x 20cm in height and secured with a central tenon with an angled shoulder. Some of the joists were re-used, containing apparently random notches and cut marks (**Appendix 1.22**). The exception to this was at the east end of the joists in **Bay 3**, where they were cut to accommodate the angled shape of the re-used timber **P6** (**Appendix 1.14**).

Irregularly sized batons of wood were crudely nailed on the sides of each joist to act as a support for the wooden boards that formed the upper surface of the floor deck. Laid on this wooden deck was a thick layer of orange sandy clay and mortar, c. 6-8cm in depth (**Appendix 1.22**). Upon this subfloor the stone flagstones (**Appendix 1.12**), measuring 45cm x 45cm, were bedded. The underside of the timber deck in Plug Street was plastered with riven laths and lime plaster at a height of 3.4m above the floor of the corridor.

PHASE 3 – FLOOR REPAIRS (19TH CENTURY)

The archaeological recording of the floor has confirmed that it has historically suffered from a former episode of deflection and repair. This can be demonstrated by an examination of the timbers **P3** and **P4** (**Appendix 1.23**). The phase 2 beam **P4** has deflected by 3-4cm when compared to **P3**, which is a secondary insertion. To introduce this beam and support the floor, the east ends of the joists in **Bay 1** were cut back, and removed from their mortices which are still visible in the west side of **P4** (**Appendix 1.7**). The two beams were then secured together, by driving large iron nails, or pegs between them (**Appendix 1.24**). The cut back joists in **Bay 1** were then re-attached to the new timber **P3** with flat hooked bars secured into the sides of the joists and face of **P3** (**Appendices 1.25, 1.26**).

PHASE 4 – INSTALLATION OF NEW SERVICES (EARLY 20TH CENTURY)

Evidence for the installation and possible repairs to the heating system were noted in the north-west corner of the East Corridor (**Appendix 1.9**). The use of screwed up paper (see **Section 6** below) as a packing material around the pipework is c.1930 in date, provides a timeframe for when heating in this part of the house was improved.

PHASE 5 – FLOOR INVESTIGATION AND STRENGTHENING (2013)

This final phase of construction within the East Corridor should be regarded as the programme of works undertaken in the summer of 2013 to strengthen the floor structure and stop any further deflection of the surface.

6 MATERIAL CULTURE

INTRODUCTION

During the lifting of the flooring of the East Corridor and the subsequent repair to the timber superstructure a small quantity of items of material culture and non-structural items were recovered. Each type of material is described and interpreted below.

METAL - IRON

Catalogue:

Five iron nails (**Figure 7**) were retained as a sample during the repair works to the floor of the East Corridor. These nails were used to secure the thin boards forming a supporting base to the sub-floor upon which the flagstones were bedded. The nails were handmade and of a consistent size and form as follows:

- Length 6cm; tapering square-sectioned shaft 4mm in scantling; each head was worked to a point; weight 6gm.

Discussion:

The consistency in form and size of the nails used to secure the boards of the secondary floor of the East Corridor suggests that this element of the joinery was undertaken as a single historic event. They are a standard form and are not of particular significance, however, when examined as a group, they provide additional evidence for the constructional sequence of repairs and alterations in this part of Stowe House.



Figure 7: Iron nails recovered following removal of timber batons covering floor (scale 5cm).

PAPER

Catalogue:

Two fragments of paper were found in the East Corridor, both recovered in the proximity of the heating pipes for a radiator in the north-west corner (**Appendix 1.15**).

- Fragmentary page of a printed newspaper; date (?) August 14th 1933 (**Figure 8**).
- Screwed-up paper bag, printed with of leather knee length boot, representing the north Kent Rubber Co. London SE 1; with slogan 'Wellington Boot Repairs, Taping solution' (**Figure 9**).

Discussion:

Both of these fragments of paper appeared to have been screwed up and used as packing to the metal pipework feeding the radiator in the north-west corner of the East Corridor. The printed details of the paper suggest a date of the c. 1930s, and this may correspond with the introduction of heating to this part of Stowe House, or a period of alteration and repair.



Figure 8: Newspaper fragment (c.1933) recovered from beneath radiator in north-west corner.



Figure 9: Paper-bag from the North Kent Rubber Company, found in north-west corner.

7 CONCLUSION

SUMMARY OF RESULTS

The archaeological recording of the floor in the East Corridor of Stowe House has provided new evidence for the development of this section of the building. It has been possible to establish that the existing floor is a secondary insertion, apparently coinciding with the expansion of the east wing and insertion of the existing cantilevered staircase. An analysis of historic plans indicates that the initial 1680s phase of the building also had a staircase in this corridor, although it was positioned in the western half.

The majority of the floor structure, which was comprised of a series of principal beams spanning north-south across the room, between which tenoned and pegged joists were attached, dated to the phase 2 remodeling. Above the joists wooden boards were secured on small side batons to form a level surface to support the sub-floor beneath the stone flagstones. The only surviving elements of the phase 1 floor that were still in-situ were the sawn-off ends of two principal beams, one containing redundant mortices for the former floor joists. It was also noted that many of the boards used to form a level surface for the stone flooring were cut with angled edges, one of which contained a rounded edge. It is concluded that these boards are, in fact, the remnants of the timber treads from the former staircase, which included both straight and winder sections of steps.

Additional timbers, and metal straps had been added to the early 18th century floor, presumably 19th century in date, suggesting that the inserted phase 2 structure was unstable and poorly engineered.

It is recommended that the results of this programme of archaeological survey and recording are incorporated within the existing archives for Stowe House and a summary submitted to an appropriate archaeological journal. In addition, any further interventions into the historic fabric of the building would benefit from detailed archaeological recording to ensure that the development of the building is fully understood.

8 REFERENCES CONSULTED AND BIBLIOGRAPHY

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9 APPENDICES

Appendix 1:

Record Photographs



Appendix 1.1: General view of exposed timberwork after stone flags removed, looking west (scale 2m).



Appendix 1.2: Exposed timber floor structure, looking east; note deflection in beams (scale 2m).



Appendix 1.3: Detail of south section of timbers **P1**, **P3** and **P4** looking south (scale 20cm).



Appendix 1.4: Detail of cut back beam **P2**, and subsequent addition of timbers **P3** and **P4** (scale 20cm).



Appendix 1.5: Detail of **P1**, with damaged end resulting from the cutting back of main part of beam (scale 20cm).



Appendix 1.6: Detail of surviving mortice and peg-hole in west side of beam **P1** (Scale 10cm).



Appendix 1.7: General view of west section of timber flooring, looking south along **P3** and **P4** (scale 2m).



Appendix 1.8: Detail of **P3** and **P4**, looking west; note reused stair treads with angled edges (scale 10cm).



Appendix 1.9: General view of north-west corner; note bricks from north wall of Plug Street below (scale 1m).



Appendix 1.10: View across flooring of the East Corridor looking west; note beam **P6** in foreground (scale 2m).



Appendix 1.11: View across flooring of the East Corridor looking east; note beams **P3**, **P4** (scale 2m).



Appendix 1.12: Detail of chamfered flagstones with contrasting stones at the corners (scale 10cm).



Appendix 1.13: Detail of reused angled timber along edge of brick vault forming Plug Street below (scale 20cm).



Appendix 1.14: Angled ends of floor joists nailed over timber **P6**; note timber **T4** set in mortar (scale 20cm).



Appendix 1.15: Detail of angled connecting strut **T2** at north end of **P6** set above brick vault (scale 20cm).



Appendix 1.16: East end of timber flooring at junction with vaulted ceiling of Plug Street below (scale 20cm; 2m).



Appendix 1.17: Detail of shaped north end to **P5**, indicating its re-use (scale 20cm).



Appendix 1.18: Detail of saw cuts on upper face of **P5** indicating re-use (scale 20cm).



Appendix 1.19: Detail of east section of timber flooring, looking south (scale 20cm; 2m).



Appendix 1.20: Detail of peg holes above joists secured within **P5** (scale 20cm).



Appendix 1.21: Detail of timber boards and reused joists; note redundant mortices (scale 20cm).



Appendix 1.22: Cross section through make-up of sub-floor deposits beneath flagstones (scale 20cm).



Appendix 1.23: General view of west section of timber flooring, looking west; note tight fitting boards (scale 2m).



Appendix 1.24: Detail of large metal nails hammered through **P4**, to connect with **P3** (scale 10cm).



Appendix 1.25: Detail of metal side hooks securing cut back joists on to **P3** (scale 20cm).



Appendix 1.26: General view of timbers **P1**, **P3** and **P4** looking south (scale 20cm).