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The South Terrace, Cliveden

Report on Archaeological Investigations 2013-17

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Summary

Cliveden is both a Grade I listed mansion and a Grade I registered park and garden. It is a site of national heritage significance which has been home to members of the Royal family, the aristocracy and some of the wealthiest families in the world. It has also been associated with notorious scandals and prominent national events.

The South Terrace is among the most significant surviving elements of the site as it is the only structure which is believed to substantially survive from the great mansion that the Duke of Buckingham began to layout in the 1670s, reputedly for his lover the Countess of Shrewsbury. The house has twice been destroyed by fire and then rebuilt but the magnificent terrace, which provides distant views towards the south, has remained a key element of each complex.

Since 2012 the South Terrace has undergone a series of phases of conservation, repair and remedial works to improve the drainage and each of these phases has included archaeological recording and investigation. The investigation has considerably enhanced our understanding of the structure and also shown that it has had a more complex history than previously believed.

Trenching works largely relating to new drainage has uncovered foundations from a series of very large brick walls, some almost 1.5 m wide, which must survive from the Duke of Buckingham's original building phase in the later 17th century. It has long been believed that this phase involved works to move vast quantities of earth from the north of where the house now stands southwards to create the step for the terrace and the current project has exposed apparent evidence of the scale of the associated building works for the terrace. Several sections of what appears to have been a great brick plinth have been exposed beneath the front wall of the terrace (which itself is believed to be from a mid 18th-century partial rebuild) and it is interesting to note that this seems to have extended westwards beyond where the West Fernery now stands. Several metres to the south of this plinth the foundations of another huge east-to-west wall have been revealed which it is assumed extended across the full front of the terrace and there is strong possibility that this was intended to be part of a second lower terrace.

Towards either end of the terrace the foundations of similarly sized north-to-south walls have been found, aligned with the outer ends of the ferneries, which may have been intended as parts of ramps or long straight staircases to frame each end of the terrace. Such an arrangement is suggested in an early 18th-century plan of Cliveden by Claude Desgot and it is interesting to note that this would have had strong similarities to a terrace laid out at Powys Castle in the 1680s by William Winde, the architect who is believed to have been responsible for the Duke of Buckingham's works at Cliveden. The choice of Winde is interesting due to his military background and experience of military engineering at sites such as Gravesend Reach. The scale and nature of the walls found at Cliveden are strongly reminiscent of military fortifications.

The foundations exposed to the south of the terrace must have been intended for a very large group of landscaping structures and the fact that there is so little evidence of these other structures on views and plans from the early 18th century is intriguing. This may well suggest that they were part of a grand scheme which was abandoned unfinished or possibly even that it was pulled down before completion. There has always been uncertainty over the extent to which the Duke ever completed his works

and although it has sometimes been assumed that the house was the main unfinished element it may actually be that there was an extravagant proposal for the terrace which was unfinished. There is also an intriguing quote included in a letter written by the Duke of Buckingham in 1677 while he was incarcerated in the Tower of London in which he complains that he may have to pull down some recently erected structures at Cliveden due to a mistake by his builder. The Duke put the cost of this at £10,000 which would suggest that the structures concerned must have been very extensive. We do not know whether the Duke actually carried this out but there is clearly a possibility that the foundations recently uncovered were the remains of structures built in error and then pulled down by the Duke.

In addition to the overall form of the terrace apparently being a scaled down version of the Duke's original vision it is also likely that the character of the current blind arcade is also considerably plainer than the front originally planned. This arcade strongly appears to have been constructed in the 1760s-1770s due to structural issues with the Duke's original more elaborate front.

The original front, comprising a series of niches, is shown in drawings contained in Colen Campbell's *Vitruvius Britannicus* and although in the past there has been considerable doubt as to whether this was ever actually constructed recent works behind the blind arcade have revealed some evidence of these former niches. Comparing historical views from the 1750s and 1770s also appears to confirm that the front wall was rebuilt during this period.

The drawings in *Vitruvius Britannicus* show remarkable staircases at either end of the terrace, on the footprints of the ferneries, and although little clear evidence of these has been found in the recent works there has been evidence to confirm that at least the East Fernery was a secondary addition. This evidence comprises the trace of curved niche-type features which must have pre-dated the front wall of the fernery.

The removal of plaster from within the Sounding Chambers at the centre of the terrace has uncovered two remarkable funnel-shaped features extending up to the terrace surface and it is assumed that these were principally light wells although they may also have been intended to be sound funnels carrying music up to the terrace. The plaster removal has also exposed a blocked doorway in the east side of the Sounding Chambers which may have led to a staircase up to the mansion.

The investigation has confirmed that the staircase at the centre of the terrace was a secondary addition, probably constructed in the 1720s and evidence exposed in the recent repair works have suggested that it is a structure that has been remodeled on a number of occasions, at least one of which appears to have been after the fire in 1795. Among the many other features which the current works have exposed have been further walls relating to the outer courtyards which were located either side of the original mansion

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1 INTRODUCTION

1.1 Scope of work

- 1.1.1 Oxford Archaeology (OA) was commissioned by the National Trust (NT) to undertake an archaeological investigation at Cliveden, near Taplow in Buckinghamshire. The investigation has focused on the South Terrace during a major programme of conservation works to the structure and it was undertaken in several phases from 2013 to 2017. The original scope of the recording was defined in a brief set by Gary Marshall, NT Regional Archaeologist and in March 2013 OA issued a Written Scheme of Investigation detailing the approach to the recording. The scope was then adapted and extended several times as the project progressed. The work has been given the NT archaeology event number ENA8223.
- 1.1.2 Cliveden is a Grade I listed mansion and a site of national significance. This significance is based on various factors including its architecture, its setting, its history and its associations with a series of prominent figures. The South Terrace is the only part of the original 17th-century house to substantially survive but it is a structure that has been altered in a number of ways and its historic form has been the subject of considerable speculation.
- 1.1.3 In September 2013 OA produced a *Fabric Analysis* report on the South Terrace in order to provide an outline of our understanding of the historical development of the structure. It was intended to help inform ongoing conservation works and to support applications for listed building consent.
- 1.1.4 The investigation on the South Terrace has also included the recording of the Terrace Pavilion (sometimes called the Cockerell Pavilion). A stand-alone report was produced in June 2014 to cover the works on that structure.
- 1.1.5 OA has undertaken previous investigations at the South Terrace in 1994 and 2002 (detailed further below) and during the duration of the South Terrace project OA has also undertaken a number of other investigations at Cliveden.

1.2 Methodology

- 1.2.1 The investigation of the South Terrace has encompassed many different elements but it has essentially comprised a watching brief during conservation works on the structure together with a general archive record prior to the start of works. The work has included three principal elements: a photographic record, a textual descriptive record and a drawn record. The drawn record has utilised various existing metric survey drawings with annotations to explain the structure and it has also included detailed drawings of newly exposed features.
- 1.2.2 The various watching briefs were all of an intermittent nature with occasional visits targeted at key points during the project rather than having a full-time archaeologist on site. This meant that some intrusive works were not monitored but were undertaken on the understanding that if in-situ structural remains were found then works would stop and allow time for an archaeologist to visit.
- 1.2.3 During the 2016 works in particular there were periods of intense activity on site with intrusive works being undertaken in several parts of the site at the same time and it was only possible to undertake an intermittent watching brief on these.
- 1.2.4 The watching brief during intrusive works was principally targeted to record the post-medieval remains associated with the 17th-century mansion, as well as subsequent alterations, rather than monitoring for any possible older (eg Roman/prehistoric) remains and the methodology

reflected this. Extensive post-medieval remains were uncovered and these were recorded appropriately but this often comprised photographic and descriptive recording rather than comprehensive drawn recording.

- 1.2.5 The recording of the South Terrace has been divided into ten distinct areas or elements and the table below summarises the dates that the recording works were undertaken.

General	
April 2013	Start of project and initial photographic recording prior to conservation
Area A: Staircase	
June 2013	Initial recording of render to staircase
Aug 2013	Recording of fine-jointed brickwork to staircase
Oct – Dec 2013	Dismantling staircase and then initial rebuilding
July 2014	Repairs to portico and staircase face
July 15	Further minor works to face of staircase
Area B: Blind Arches	
June 2013	Repairs to terrace cornice in west return wall
June 2014	Recording of cornice of arcade (dentils etc)
Area C: Ferneries and fernery water tanks	
July 2013	Initial recording within Ferneries
March 2015	Recording circular marks etc in both ferneries
May - June 2015	Access into Ferneries and adjacent water tanks during brick removal and repairs
July 2016	Trench pits within ferneries
Area D: Sounding Chambers	
Dec 2014	Initial recording in Sounding Chamber
Jan – Feb 2016	Further recording in Sounding Chamber
Area E: Barrel-vaulted chambers	
May 2015	Access into East barrel vaulted chamber
June 2015	Access into West barrel vaulted chamber
Area F: Terrace surface and substructure	
May 2015	Trenches on top of western part of terrace
Sept 2014	Trial trenches on top of terrace (western third)
Sept 2016	Start of recording during main works to central part of terrace.
Area G: Area in front of terrace	
July 2013	Initial WB during excavation of slide pits
Jan 2014	Subsequent extension of slide pit
Nov 2015	WB during excavation of soakaway pits either side of staircase
April – June 2016	Excavation of main ‘trunk’ drainage trench in front of terrace
Aug 17-Nov 2017	Final minor landscaping works in front of blind arcades.
Area H: Area to west of terrace around pavilion	
June 2016	Excavations around pavilion
Area I: Duke’s Lawn and West Lawn	
July 2016	Trenches in West Lawn
Area J: Area to east of terrace and Rushy Valley	
June 2016	Excavation works around eastern edge of terrace

- 1.2.6 Various elements of the investigation have uncovered architectural fragments or moulded stones. Many of these had been reused as packing material built into the walls of the staircase behind the brick face or reused as capping pieces on top of culverts. These are discussed in Appendix D.

- 1.2.7 The project has been supported by historical research largely based on previous studies, secondary sources and historic maps. In particular it has utilised the excellent study of historical sources produced by Wendy Hitchmough in December 1997 but it has also included articles from *Architectural History* by Gervase Jackson-Stops and *Country Life*. It has not included a detailed study of primary sources.
- 1.2.8 In due course the records relating to the investigation of the South Terrace will be collated and deposited with Buckinghamshire County Museum (site code: TACST13, accession No. AYBCM: 2013.40).

1.3 Previous studies

- 1.3.1 There have been several previous archaeological investigations at Cliveden relevant to the South Terrace. The findings of these are briefly summarised below.
- 1.3.2 **OA, 1994:** In 1994 a trench was opened across the full width of the top of the south Terrace, towards the eastern end of the structure. This revealed various make-up layers and the top of north-to-south brick vaulting c.1.25 m below the current surface. The top of this vaulting coincides with a horizontal offset in the blind arches in the south wall. The work also revealed an east-to-west brick wall, c.2 m north from the balustrade. The area exposed did not reveal whether the wall continued down to ground level, to possibly form a corridor running along the south edge of the terrace, or whether it sat on top of the vaulting.
- 1.3.3 **OA, 2002:** In 2002 OA undertook an archaeological watching brief during the excavation of a series of investigative trenches on the terrace and staircase. Among the features revealed was a set of four north-to-south brick vaults across the top of the staircase and what appeared to have been a single east-to-west vault which was probably the top of the Sounding Chamber.
- 1.3.4 **Network Archaeology, 2012-13:** In Feb-March 2012 Network Archaeology undertook a watching brief over the installation of a sewer which ran across the gravel drive below the terrace and also around the west lawn below the Cockerill Pavilion. Network Archaeology then also undertook monitoring during ground levelling at the west end of the terrace. These works revealed numerous fragments of wall, largely concentrated to the west and south-west of the house. The features included remains that could relate to the long staircases shown on Desgot's plan at either side of the terrace although this is somewhat speculative. No features thought to pre-date the 1670s house were recorded but there were features not shown on the documentary or historical sources.
- 1.3.5 **The National Trust, 2012:** In 2012 two small entry holes were made in the front face of the base of the terrace wall to investigate whether there were open north-south vaults within the terrace. These holes were located 5.3 m and 7.6 m east of the staircase and they showed that behind the current 0.48 m thick front wall there is a void and a second east-to-west wall incorporating semi-circular niches. Two niches were identified; their width was estimated at 2.9 m and their height was c.3.92 m above the grass bank. There were north-to-south spur walls between the inner wall with the niches and the current outer wall.
- 1.3.6 Unfortunately access was very limited to the void so there remained considerable uncertainty regarding the form and date of the structure. The niches were a surprise and the on-site interpretation was that the current front wall and the north-south spur walls are a secondary southward extension built up to and beneath the earlier wall, suggesting there may have been structural problems with the earlier niched wall. Colen Campbell's 1717 elevation of Cliveden in *Vitruvius Britannicus* shows the terrace elevation with a series of niches similar to those partially exposed and although the elevation almost certainly included elements which were not built, such as the end staircases, the niches may well have been accurate. A view included

in The Modern Universal British Traveller published in 1779 (Fig 13) clearly shows the terrace with blind arches so the alterations had been undertaken by this date.

- 1.3.7 **Recording of graffiti:** Historic graffiti in the ferneries was undertaken in March 2014 by National Trust volunteers Ted Sutton and Jane Smart ('The Graffiti in Cliveden's Ferneries' March 2014).
- 1.3.8 **NT Geophysical Investigations:** Geophysics surveys (resistivity) was undertaken by the National Trust on the West Lawn (Sept 2014), Duke's Lawn (April 2016) and South Lawn (October 2016)
- 1.3.9 **Stratascan GPR survey:** Ground penetrating radar survey of the South lawn undertaken by Stratascan in Jan 2015.
- 1.3.10 **Assessment of water tanks:** An assessment of the fernery water tanks was undertaken by Frank Ferris, National Trust Country House Technology Advisor, in May 2015. He produced an untitled report dated August 2015.

1.4 Aims and Objectives

- 1.4.1 The main aim of the current project was to investigate, interpret and record for posterity any historic fabric or archaeological features which will be lost, damaged, impacted or temporarily exposed during the conservation works.
- 1.4.2 A wider aim was to add to the evidence gained during previous archaeological projects at Cliveden and to enhance the overall understanding of the development of the site.
- 1.4.3 The final aim was to produce a report detailing the results of the project and to create an ordered archive.

1.5 Location, topography and geology

- 1.5.1 Cliveden is a 368 acre estate located on the wooded heights of south Buckinghamshire, in the parish of Taplow and lying just to the east of the villages of Cookham and Bourne End. The nearest towns are Slough and Maidenhead which lie c.4 km to the south-east and south-west respectively. The South Terrace is located on the south side of the mansion and it is set on a promontory overlooking a long parterre sloping down towards the River Thames.
- 1.5.2 The site is located at c.60 m OD and the underlying geology is comprised of Clay, Silt and Sand of the Lambeth Group (British Geological Survey website). The drift geology is Gerrards Cross Gravel – Sand and Gravel (British Geological Survey website). The overlying soils are known as Sonning 2 which are typical brown earths. These consist of well drained, flinty, coarse loamy and gravelly soils (Soil Survey of England and Wales, Sheet 4, Eastern England).

2 HISTORICAL BACKGROUND

2.1 Introduction

- 2.1.1 This historical background is largely based on various secondary sources and historic plans or maps rather than extensive primary research. The key secondary sources have been Wendy Hitchmough's 1997 unpublished report: *Cliveden, The South Terrace: Historical Documentation, Cliveden, The Place and the People* by James Crathorne (1995), the *NT Guidebook* to Cliveden and two articles in the journal *Architectural History* by Gervase Jackson-Stops. A full list of sources is included in the bibliography (Appendix A).

2.2 Early History

- 2.2.1 In the medieval period Cliveden does not appear to have been a separate manor but instead it formed part of Amerden Manor within Taplow. In the early 13th century it was held by Stephen de Cliveden and when he died the part that now includes Cliveden was divided and passed to Stephen's son Geoffrey. This part then became known as Cliveden Manor. Geoffrey de Cliveden's son is believed to have died without issue and then Cliveden reverted to the owners of Amerden Manor.
- 2.2.2 By the 16th century that area again appears to have been divided from the main manor and it was then known as Cliveden Park in the ownership of the Manfield family. In 1569 the park included 50 acres of wood as well as a house called the lodge and by 1573 it had expanded to include 160 acres and two lodges.
- 2.2.3 The park was sold by Edward Manfield to George Villiers, 2nd Duke of Buckingham, in 1666 who planned to construct a new mansion for use as a grand hunting lodge from where he could entertain his mistress, Anna Maria Talbot, the Countess of Shrewsbury, and friends.

2.3 Duke of Buckingham

- 2.3.1 The Duke of Buckingham was an extravagant member of the aristocracy who, for a period in the 1660s and 1670s, was a figure of great wealth and importance in the court of King Charles II. He was an archetypal restoration 'rake' who was embroiled in numerous scandals and his status within the King's court fluctuated in relation to these.
- 2.3.2 The Duke had been close to the royal family since a boy. His father, the first Duke of Buckingham, had risen rapidly in the early 17th century to become a favourite of both James I and then Charles I but he was assassinated in 1628, the same year in which the 2nd Duke was born¹. Following this the 2nd Duke was raised with the children of Charles I in the royal nursery at Richmond, and then he took up arms in 1647 on the side of the King during the Second Civil

¹ It is interesting to note that the first Duke of Buckingham acquired an estate called Burleigh-on-the-Hill (or Burley-on-the-Hill) in Rutland and in the 1620s he began to construct a house here and lay out extensive grounds. This site was on a slope similar to that at Cliveden and it has a remarkable 250 m long terrace on its south side with a central staircase up to it and blind arches along its front (also very similar to Cliveden). The current house (and presumably the terrace) at Burleigh-on-the-Hill dates from the end of the 18th century, after the first Duke's house at the site was largely destroyed during the Civil War, so it is much later in date than the second Duke's great mansion and Terrace at Cliveden, but it is possible that the site had an influence on his designs for Cliveden. The 2nd Duke never lived at Burleigh-on-the hill but it is possible that he spent some of his childhood here and Horace Walpole, writing towards the end of the 18th century stated that Cliveden 'was evidently copied in little from his father's seat Burleigh on the Hill' (Walpole, 1798).

War. In c.1650 he formed part of the exiled King's court but by 1657 he was out of favour with Charles and he returned to England. In 1660 he regained his confiscated estates and with the restoration of the monarchy he began to regain the King's confidence. In early 1667, after he was involved in an altercation with the Marquess of Dorchester and in political scandals, a warrant for the Duke's arrest was issued. He avoided capture for several months but was subsequently caught and briefly imprisoned in the Tower of London. After his release he quickly regained the King's favour as well as his political appointments.

- 2.3.3 He remained an important political figure for the following six years and an indication of the Duke's influence at this time is given by Samuel Pepys in 1667 describing the King as his 'slave'. This was despite a scandalous relationship which he was undertaking with Anna Maria Brudenell, Countess of Shrewsbury, which had begun in 1666. Anna Maria was also a controversial figure who had a series of high profile affairs and in 1668 the Duke of Buckingham was challenged to a duel by Anna Maria's husband, Earl of Shrewsbury. Shrewsbury was fatally wounded in the encounter and then the Duke and the Countess openly continued their relationship. In 1671 Anna Maria bore the Duke's child and, despite his strong disapproval of the duel, the King was named as the godfather. The infant died aged 5 months old he was buried, to something of a public outcry, in the family vault at Westminster Abbey.
- 2.3.4 In 1674 the new 13 year old Earl of Shrewsbury presented a petition to parliament that Buckingham should be removed from the King's employment due to the dishonor he had brought to his family and this, together with a number of other charges faced by Buckingham at this time, led to his downfall.
- 2.3.5 The King dismissed Buckingham from his offices (not for the first time) and the Duke was ordered by Parliament not to cohabit with the Countess of Shrewsbury. The Countess remarried and returned to France.

2.3.6 Initial construction works at Cliveden

- 2.3.7 The Duke's relationship with the Countess of Shrewsbury was of particular significance in relation to Cliveden due to the Duke purchasing the site in the later 1660s, apparently with the specific intention of constructing a mansion to be used as a palace for the couple.
- 2.3.8 There is very little documentary evidence to provide firm dates for the Duke's construction works at Cliveden after his acquisition of the property and it is believed that it was not until the early 1670s that any works commenced on the mansion itself. A possible hint has been provided by some recent dendrochronology works undertaken on the roof timbers of the mansion's west pavilion. This pavilion is believed to be early 18th century in date, and it has also been re-roofed, so most of the timber gave a felling date of 1834 but two of the trusses incorporate reused struts which gave a felling date of 1670-1. These may have originated from the Duke's original phase of work. In addition there were two re-used tie beams with felling dates of 1702 and 1705-6 which would tie in with the phase that Thomas Archer added the pavilions. (Source 'The tree-ring dating of the West Wing, Cliveden House, Taplow, Buckinghamshire' Dan Miles, 2016; NT event no. ENA7513).
- 2.3.9 The Duke's project is known to have involved major landscaping or earth-moving operations and these may have commenced prior to 1670. Buckingham is believed to have chosen William Winde a well-connected gentleman architect of some importance in the later 17th century to design his new house and this choice is of interest due to Winde's extensive

experience of military architecture². Winde had had a military career and he was skilled in the construction of major earthwork fortifications, including work at Gravesend Reach in 1667 and at Portsmouth. This military engineering had clear parallels to much of the work undertaken at Cliveden where a platform on which to construct the new house overlooking the river was created. Vast quantities of earth are understood to have been excavated from the north side of the site and moved to the south side to create this terraced step for the house. It is also interesting to note that Winde is believed to have also created the terraced gardens at Powis Castle, probably in the 1680s, which have striking similarities to the South Terrace at Cliveden.

- 2.3.10 In 1677 the Duke was imprisoned at the Tower of London (not for the first time) and although he was again released relatively quickly he wrote to the King while imprisoned and declared: *'it is most certaine that a little mistake in my builders at Clifden may cost me above £10,000, because I shall certainly pull it downe again if it be not to my owne mind'*. This letter is partly of interest as it shows that Buckingham's work at Cliveden was continuing in 1677, three years after his affair with the Countess of Shrewsbury had ended and also because it suggests that Buckingham's works may have seen major changes during construction.
- 2.3.11 We know something of the form of the site at this time from a diary entry of John Evelyn who visited Cliveden in 1679 and referred to the 'extraordinary expense' of the works undertaken at the site. Evelyn makes little mention of the house itself, suggesting that this was may not have been well advanced, but he does describe in slightly more detail the terrace, suggesting that this was relatively complete. Evelyn refers to a platform (ie the terrace) with a circular view towards the horizon and the Thames. He also mentions a staircase of singular materials (apparently in relation to the terrace) and 'cloisters'.
- 2.3.12 Evelyn also refers to Cliveden being 'somewhat like Frascati' and this is an interesting clue to the character of the building, referring to a number of influential villas (particularly the Villa Aldobrandini) in Frascati, Italy set on sloped sites with terracing merging the house with the landscape. Buckingham had visited Italy as a young man but he was also a Francophile and it may also be that he was influenced by Francois Mansart's Orangery at Versailles or his terraces above the Seine at St Germain. The Cliveden Guidebook written by Jonathan Marsden also suggests that an important influence could have been Pietro da Cortona's imagined reconstruction of the Temple of Palestrina published in JM Suarez's *Praenestes Antiquae* in 1655.
- 2.3.13 After the Duke's disgrace in 1674 he partially retired and from 1682 until his death in 1687 he lived at his Yorkshire residence. Cliveden was partially abandoned although Mary, the Duke's long-suffering wife is reported to have lived at Cliveden after the Duke's death (Livingstone, 2015).
- 2.3.14 There remains uncertainty over the extent to which the Duke of Buckingham 'completed' his works at Cliveden and in particular over the condition of his house when he abandoned Cliveden. As outlined above much of his works are believed to have been focused on creating the terrace but it is known a house was constructed, apparently also designed by William Winde. No illustrations survive of the house but it is believed to have had similarities to the very tall, Dutch influenced Ashdown House (also probably designed by Winde).
- 2.3.15 In 1689 the estate returned to the possession of the Manfield Family and then in 1696 it was acquired by George Hamilton, the first Earl of Orkney.

² The attribution of Cliveden to William Winde was made by the 18th-century antiquary George Vertue and although the architectural historian Sir Howard Colvin cast some doubt on this Gervase Jackson-Stops accepted it.

2.4 Cliveden in the eighteenth century

2.4.1 *Earl of Orkney*

2.4.2 The Earl of Orkney was a distinguished soldier and in contrast to the Duke of Buckingham he appears to have been a relatively cautious, modest man. In 1707 he was elected as one of the Peers for Scotland in the first Parliament of Great Britain following the Union and he subsequently sat on seven successive parliaments up to 1737. In the decade after acquiring Cliveden Orkney undertook few substantial works to the house or gardens due to some financial constraint and the Earl's military career.

2.4.3 In 1705 plans for the mansion were prepared including reducing the height of the Duke of Buckingham's lofty building by a storey to create a more fashionable (and practical) neo-Palladian building and the construction of two flanking wings. These works commenced c.1705-6 by Thomas Archer, an important gentleman architect, and they had been completed by 1712. The wings survive today, albeit stuccoed in the 19th century by Sir Charles Barry. It is possible that this phase of works also included improvements to the terrace.

2.4.4 *Vitruvius Britannicus*

2.4.5 Among the key areas of evidence relating to the form of the mansion and terrace in the early 18th century, after Thomas Archer's alterations, are three plates of Cliveden contained in Colen Campbell's *Vitruvius Britannicus*, published in 1717 (Figs 6-8). These comprise a detailed plan as well as elevations of the house and terrace and it is striking just how different the terrace appears to its modern form as well as how different it is to a number of slightly later French proposals for the parterre (detailed further below).

2.4.6 Campbell's drawings show the terrace without a central staircase but with a semi-circular set of stairs at each end contained within end chambers. These chambers are clearly different to the end chambers (ferneries) that survive today but it could be that this aspect of Campbell's elevation was a proposal (unexecuted) for an alteration for the existing chambers.

2.4.7 The other clearest difference in Campbell's elevation to the terrace today is the fact that it is shown with a series of 26 apparently semi-circular niches to its main front, 13 to either side of a central entrance. The elevation also shows a central doorway to a central chamber which is similar to the arrangement on all the other historical views and plans.

2.4.8 The niches shown on the elevation are so different to the existing face of blind arches, and also not clearly suggested by John Evelyn's 17th-century reference to 'cloisters', that it would be easy to dismiss it as an entirely unexecuted proposal. However, in 2012 two trial entry holes were opened in the face of the blind arches and these revealed niches behind the current secondary brick face. This suggests that Campbell's drawings probably are considerably more accurate as a record of the original terrace than might initially be imagined. The drawings probably do however combine elements of proposal together with a partially 'as existing' record and there are elements of inconsistency between Campbell's plan and his elevation. For example on the elevation the end staircases align with the subsidiary ranges (stables and offices) to east and west of the house while on the plan they are inset from them. One possibility is that this intentional and intended to show the effects of perspective on the elevation.

2.4.9 Campbell's plan shows the terrace as 433 ft long and with a distinct step in its footprint approximately at the mid point between the central opening and the semi-circular end staircases. There is no clear indication of the steps in Campbell's elevation however and again

there is some uncertainty regarding whether these steps ever actually formed part of the constructed terrace.

- 2.4.10 The fact that Campbell's drawings show Archer's main alterations (c.1705-6) but not the central staircase suggest that the stairs post-date this very early 18th-century phase.
- 2.4.11 The description of the house in Vitruvius Britannicus includes the following: *'Under the great Court in Front are arched corridors that communicate from one side of the Offices to the other; a thing of great use and convenience: Here is also a curious Grotto with a great Number of large and spacious Vaults and many other subterranean Conveniences'*. Although this description appears to principally relate to subterranean chambers on the north side of the house rather than chambers within the South Terrace the description is still useful in providing an indication of the network of buried chambers in the Duke of Buckingham's house.

2.4.12 French parterre proposals

- 2.4.13 From c.1713 the Earl of Orkney commissioned a series of garden designs, apparently from several French landscape designers. The main focus of these drawings was a proposed parterre in the area immediately to the south of the terrace and the terrace itself is generally only shown in outline. The plans are contained within the Cliveden Album, a collection of original drawings in the possession of Lord Astor. A letter from Lord Orkney to his brother shows that the parterre was still being constructed in 1723 (quoted in Hitchmough, 1997. Lord Orkney letter to Lord Archibald Hamilton, 23 Oct 1723, National Library of Scotland, MS1033 f.157).
- 2.4.14 The earliest of these designs (Cliveden Album page 6) were a set of alternative proposals by Claude Desgots for a parterre adjacent to the terrace dated 1713 and although these do not show the terrace they appear to show long straight flights of steps at either side of the terrace down to the parterre, rather than a central set of stairs (Fig 2).
- 2.4.15 Desgot's plan strongly supports the belief that the central stairs are a secondary addition (as does other evidence such as Vitruvius Britannicus) but, it should be noted that the plan could have been based on a survey from some years previous so we cannot be certain that they therefore post-date 1713. Similarly to Vitruvius Britannicus the plan also supports the belief that originally there were staircases at each end of the terrace although the form of these is open to speculation. It may be that Desgot shows their initial, relatively simple form and that Campbell's drawings show a proposal for their replacement.
- 2.4.16 There is an undated proposal plan (Cliveden Album Page 11) from the c1713-23 phase which provides useful clues to the terrace although it is difficult to interpret some of the delineation with certainty (Fig 4). The plan apparently shows the terrace with a colonnade or open arcade and there is the trace of matching features shown at each end of the terrace projecting southwards. This plan does not show end chambers but it does provide some measurements and is likely to have been a part proposal, part measured survey. The terrace is labelled as being 25 (presumably feet) deep. There also appears to be a feature shown towards the centre of the terrace with a circular form extending from the terrace south into the parterre. This element is not clearly delineated suggesting it was very much a proposal rather than a survey of what was there but there appears to be shown a segment from a circle in the terrace and further features immediately to the south which continue the circle pattern.
- 2.4.17 The plan on page 16 of the Cliveden Album is particularly interesting in relation to the terrace for several reasons (Fig 3). This is partly because it shows a central double staircase very similar to that constructed and which survives today (albeit heavily reconstructed) but also because it provides some indication of internal layout below the terrace. The plan clearly shows an open, broadly square-plan chamber towards either end of the terrace which would probably

have been in the same area as the ferneries which survive today. Each of these is shown with three openings to the south. The fact that the central staircase is shown would suggest that the date of this plan was towards the latter part of the 1713-23 phase. The plan is ambiguous regarding the construction and form of the rest of the terrace and it does not show any openings into the potentially vaulted area beneath. It is also interesting to note that the plan shows a long east-to-west feature across the garden at the north end of the parterre and it is clear that the proposal was for an intermediate band or area between the terrace and the parterre. This may have been some form of a screen and there are three openings shown within this. Separate east-to-west planting or path edging is also shown aligned with the south edge of the staircase.

- 2.4.18 The plan on page 18 of the Cliveden Album again shows a double staircase (so is again probably around 1720 or later) and chambers at each end with three openings to the south divided by two free-standing piers. It also shows what appears to have been a colonnaded screen across the garden at the north end of the parterre.
- 2.4.19 The plan on page 8 of the Cliveden Album is too faint to interpret much but it does show a double staircase at the centre of the terrace. This plan does not show end chambers but it may be significant that this is the most ambitious proposal from this period and it could be that this scheme involved entirely removing the existing chambers.
- 2.4.20 At this date (c.1720s) we can be confident that there was a central staircase and end chambers, each with three arches to the south. The plans also suggest that there was not open arcading to the terrace at this date although it might have been an open vaulted space.
- 2.4.21 It is reported in Rodney Melville & Partners' Built Structure's Plan that in 1724 Daniel Defoe visited Cliveden and made mention of a staircase (apparently internal) linking the central Sounding Chamber with the mansion. The current staircase on the west side of this chamber which connects with the floor above is a secondary addition (discussed further below) so it is perhaps more likely that there was a staircase to the east of this chamber. This corresponds with a blocked doorway exposed here during the current project.
- 2.4.22 The Countess of Orkney died in 1733 and when the Earl died in 1737 the estate passed to his daughter, Anne the 2nd Countess of Orkney.
- 2.4.23 *Frederick, Prince of Wales***
- 2.4.24 Anne's husband, the 4th Earl of Inchiquin was close to Frederick, Prince of Wales (son of George II), who had also been well acquainted to the Earl of Orkney and the wider Hamilton family. Frederick had originally visited Cliveden in 1729 due to Elizabeth Villiers being close to both King George I and George II.
- 2.4.25 Frederick married Princess Augusta of Saxe-Gotha in 1736 and in 1737 she became pregnant, prompting Frederick to try to find a house in the country. He turned his attention towards Cliveden and it was agreed that Anne and the Earl of Inchiquin would live in Taplow Court and they would then lease Cliveden out to Frederick. The Prince of Wales had moved in by 1737 and he then remained at Cliveden until his death in 1751.
- 2.4.26 It is not believed that any substantial alterations were undertaken to the house or terrace during this period partly because Frederick expected to become King in the near future so wanted to limit excessive expenditure but some improvements were undertaken to the gardens.
- 2.4.27 One minor piece of work however that appears to have been undertaken to the terrace was the creation of two aviaries. Hitchmough reports that account books show that a payment

was made in 1747 for a carpenter to enclose 'Two Great Arches for birds' but the location of these is not known for certain. They may have been the end chambers of the terrace but another possibility is that they relate to the fifth chamber in from each end of the terrace. These chambers are now known as the barrel-vaulted water tanks and views later in the 18th century suggest the possibility of them having been fitted out as aviaries.

- 2.4.28 One other event of note which took place at Cliveden during the Prince of Wales' residence was the first performance of Rule Britannia set to music in 1740 and this may have some direct relevance to the current study as it appears that it was performed in what is now called the Sounding Chamber at the centre of the South Terrace. An article in the Gardener's Chronicle from 21 July 1877 states: *'It was in a chambered vault underneath the dining room at Cliveden that it was first authoritatively pronounced (in 1740) that 'Britannia rules the waves', and that Britons never will be slaves' – the occasion being the performance for the first time of the Masque of Liberty written by James Thomson and containing the now well-known song, set to music by Dr Arne.'*

2.4.29 Countess of Orkney

- 2.4.30 In 1751 the Prince of Wales died. Frederick's son George was now heir to the throne (although he would not come of age until 1756) and Augusta felt that he would be better prepared for his future by moving into London. Thus they gave up their lease on Cliveden. The estate remained with the Countess of Orkney and her husband Lord Inchiquin but they continued to live at Taplow Court and there appears to have been little money to fund maintenance at Cliveden. The Cliveden estate appears to have been little occupied; this was a period of neglect and deterioration. In 1756 Mary O'Brien succeeded her mother Anne as Countess of Orkney and in 1762 Cliveden was described as *'very ill kept'* (Modern Universal Traveller, 1780).

- 2.4.31 In the 1760s and 1770s (particularly 1776-1778) it was widely reported that George III, who had spent part of his childhood at Cliveden tried to buy the estate but the new Countess of Orkney refused to sell (Livingstone, 2015). A newspaper report in 1780 commenting on these stories stated that the King's reported intentions to buy Cliveden were not true and the report adds that the current owner had *'lately laid out several thousand pounds in the further improvement of it'* (London Packet or New Lloyds Evening Post, 24-6 July 1780). It is interesting to speculate whether these improvements related to the South Terrace.

- 2.4.32 In 1785 The Times reported that Warren Hastings, Governor General of Bengal had taken a lease on Cliveden on his retirement and return to England. In 1789 The Times reported that a John Symonds had taken a lease on the estate and then in 1791 the ownership of the estate passed to Mary O'Brien, the 3rd Countess of Orkney. Mary was then widowed two years later. Accounts suggest the mansion and gardens were old fashioned and neglected.

2.4.33 18th-century maps

- 2.4.34 There are a number of 18th century maps and views which provide useful evidence relating to Cliveden. The earliest map is a survey produced in 1749 by John Richardson (Fig 9) and this is believed to be a relatively accurate indication of the estate at this date. The map provides little detail for the terrace itself but similarly to Colen Campbell's Vitruvius Britannicus it shows what appear to have been large walled gardens to east and west of the mansion with formal lawns and paths laid out within them. A staircase is shown on the east side of the eastern garden (now the Duke's Lawn) leading down to the lower ground towards the Rushy Valley. This staircase was located at the point from which three avenues would have radiated away down the slope to the east, north-east and south-east. This would have given the east lawn a significant and commanding view eastwards from the terrace.

- 2.4.35 A survey by Samuel Adams dated 1761 provides similar evidence; the walled gardens to east and west of the house appear identical although the flight of steps to the east side of the eastern garden is not shown. The central staircase to the terrace is shown in 1761 together with short flights of steps to the west side of the end chambers now known as the ferneries.
- 2.4.36 The Enclosure map of 1787 (Fig 14) once again suggests that there were large raised areas or courts to east and west of the house with the terrace forming the southern edge of this great area. The map shows four curious features, slightly projecting to the south. These are broadly evenly spaced with one towards each end and although their position is not accurate it is assumed that they must represent sets of steps or staircases. Those at the ends must be the short flights of steps into the chambers that are now the ferneries and the other two features must represent the two flights of steps which together form the central staircase. Their position and scale is far from accurate but it is clear that they were schematically added onto the plan. In addition a similar feature is shown along the eastern side of the raised area where it is known that there was another flight of stairs.

2.4.37 *Mid 18th-century views*

- 2.4.38 Although the second half of the 18th century was a period of neglect for Cliveden its previous royal occupants had given it a certain status and several valuable views were produced showing the house and terrace in this period. They show the terrace with a broadly similar form to the French plans of c.1720-1723 but with various interesting differences.
- 2.4.39 The main views divide into two pairs: two probably from the 1750s (one dated to 1759) and two from around the 1770s although there is also a slightly earlier view (1749) and it appears that several versions of the later engravings were produced.
- 2.4.40 The first view (View of Cliveden from the Thames) was produced by W Tomkins in 1749 and although there is some doubt regarding the accuracy of this it is still of use, partly due to the striking impression that the red brickwork of the terrace and mansion made on the landscape. This view again implies that there were walled courts or gardens either side of the house but the staircase is almost certainly inaccurate, only being shown with single flights to each side of the central opening.
- 2.4.41 **1750s views:** The two views from the 1750s show the mansion from an identical view point to each other and the terrace with a very similar form. A high resolution copy has been obtained from the British Library for one view by Luke Sullivan dated 1759 (Fig 11), and although only a lower resolution copy of the other view has been obtained it strongly appears that the detailing of the terrace is essentially the same on both engravings.
- 2.4.42 These two views show the terrace fronted by a long arcade with nine arches to either side of the stairs, at least two further arches to each side abutted by the staircase and the three-arch end chambers. An interesting aspect of these views is the fact that the arcading strongly appears to pre-date the blind arcade that survives today. The main evidence suggesting this is the fact that the south face of the East Fernery steps forward and is set in front of the adjacent arcade whereas today the blind arcade is slightly in front of the fernery face (see Fig 11). The angle of the views means that this is less clear in relation to the West Fernery but presumably it had the same arrangement. It is also noticeable on the high resolution view that coursing is shown to the arcade piers similar to that on the fernery piers whereas later views all show them as plain, as if they were rendered, and distinct from the fernery elevations.
- 2.4.43 Above the arcade the views show a string course or cornice immediately above the keystones and what was probably a further moulded cornice beneath the balustrade. Between these two

- horizontals there appear to have been short vertical panels aligned with the piers within the balustrading above.
- 2.4.44 One important question regarding the form of the terrace which the views do not categorically answer is whether the arcade was blind or open in the 1750s. The views do not clearly show any features behind the arches to suggest that the arcade was open but there is some variety in the tones used to shade the arches and this creates some feeling of depth. It is worth noting that the shading of the arcade is similar to that used in the end chamber arches, which were almost certainly open, and there is no indication of coursing within the arches like there is to the piers. Although the evidence is not conclusive the 1759 view does suggest that at this date there was an open arcade (or niches).
- 2.4.45 The 1750s views are also interesting in relation to the staircase as they both show panels, pilasters and niches with a similar arrangement to those recently exposed beneath later render. It is also possible to see coursing on the pilasters and recessed panels of the stair elevations (particularly the eastern side). Presumably this coursing represents exposed brickwork although it could be stone.
- 2.4.46 The opening within the staircase which provided access to the chamber is shown with outer columns supporting a main entablature and lower engaged columns inside this supporting an arch. The interior of the chamber through to the Sounding Chamber is not delineated.
- 2.4.47 **1770s views:** the two later views include one which was included in a publication from 1779 (*The Modern Universal British Traveller*) and one undated engraving by John Donowell (Fig 12) who was active from 1753 to 1788.
- 2.4.48 From the similarities between the c.1779 view³ and Donowell's, as well as the differences with the 1750s views, it seems likely that Donowell's was also from a similar date. These two views show the arcade as clearly being blind and apparently rendered as no brickwork is shown in contrast to on the faces of the end chambers. The views also show the face of the blind arcading aligned with the end chambers rather than being recessed behind it as in the 1750s, strongly suggesting that an entirely new blind-arcade front was constructed between 1759 and 1779.
- 2.4.49 Although it is speculative it is possible that the refronting of the terrace are the new works referred to in the 1780 newspaper report mentioned above.
- 2.4.50 Again there is a horizontal band shown above the keystones of the blind arches articulated with short vertical piers aligned with the balustrading above. On Donowell's view this band above the arches is shorter than the band of brickwork in this location today which suggests the possibility that the terrace surface could have been raised (possibly by 50 cm) after the 1770s. Indeed the other 18th-century views also appear to show the same arrangement with the height between the top of the arcade arches and the balustrade as being smaller than that today.
- 2.4.51 The two 1770s views show the staircase with the same overall double form as that on the 1750s views but with slightly different detailing to its face. These two views apparently show the stairs with piers or pilasters but without recessed panels or horizontals. The differences in

³ Various editions of *The Modern Universal British Traveller* were published between 1779 and 1790 and several very similar versions of this view of Cliveden were included in these and possibly also in other publications from this period. For example one almost identical version of the view is dated 1782 although it is clearly the same engraving as that included in the 1779 publication.

the staircase detailing between the 1770s views and those from the 1750s is subtle but it is thought to be an accurate representation of a different arrangement.

- 2.4.52 It may also be significant to note that Donowell's view suggests that the lower flights had balusters and handrails to both sides (north and south) whereas today's staircase only has balusters to the outer (southern) face.
- 2.4.53 The portico to the Sounding Chamber is similar to that shown on the 1750s views with outer columns (apparently Ionic) and inner engaged ones supporting the arched opening. It is also possible to see some delineation of the interior of the chamber through the archway although not the fine detail of this.
- 2.4.54 The views show the end chambers set on raised stepped platforms.
- 2.4.55 The view from c.1779 also shows doorways into rooms beneath the terrace one arch in from each fernery and these would seem to be the most logical locations for the possible aviaries created in 1747.

2.5 Cliveden between 1795 and 1893

2.5.1 1795 Fire

- 2.5.2 In 1795 a devastating fire at Cliveden reduced the mansion to a ruin with only the outer walls and one side wing surviving. The diarist Mrs Caroline Lybbe Powys visited in July 1795 and provided the following valuable description: *'we had all a curiosity to see the ruins of the once magnificent Clifden House, so we set off, and mounted a very steep hill; the whole fabric except one wing, a scene of ruin - the flight of stone steps all fallen to pieces'* (Livingstone, 2015). The reference to the steps could refer to the main internal staircase of the house but it seems more likely that it relates to the terrace staircase, particularly because the visitor seems to be describing the scene of ruins from the south having climbed the hill from the river. The fact that the commentator uses of the term 'steps' also appears to point more towards the external stairs whereas if it was the main internal stairs it seems more likely that they would have been described as the 'staircase'.
- 2.5.3 There are several paintings of the ruins and these attest to the extent of the devastation although they only provide limited clues to the form of the South Terrace at this time. The most useful view is that by Hendrik de Cort which is probably an accurate representation of Cliveden after the fire (Fig 15). The extent of the vegetation growing on the wall tops suggests that it was probably made some time after the fire and the men in the scene appear to be clearing the debris. The painting is looking broadly south and it shows part of the front (north) wall to the left as well as the internal face of part of the rear (south) wall. It also shows the balustrade of the terrace behind the building, including the central section that steps back to allow for the staircase and it is interesting to note how the balustrade appears relatively untouched by the fire.
- 2.5.4 The view also provides some detail of the northern side of the west end of the terrace. This is of interest in the current study because the painting shows that in the late 18th century the ground immediately north of the west end of the terrace was considerably lower than the level of the terrace itself. Unlike today there were three distinct edges to the outer section of the terrace, with balustrading to south and west and a solid brick wall to the north side.
- 2.5.5 Other interesting features of note in the painting include what was clearly a subterranean chamber which would have been inside the building just to the east of the centre. The view shows a square plan opening down into this area and its depth is suggested by the fact that the top of a ladder is visible which would have provided access down to this chamber which

must have been just to the east of the Sounding Chamber. Another brick vault is also shown just to the west which is also suggestive of a subterranean area within the main house. Another interesting aspect of the painting are the number of fragments of moulded stone shown lying around the site discarded from the collapsed building. Many similar fragments have been found in the current project (column capitals, sections of cornice etc).

- 2.5.6 Another of the post-fire paintings does show a staircase in some detail but it shows such differences to other sources that it was almost certainly painted from the artist's imagination or recollections rather than being undertaken on site (anonymous water colour in Viscount Astor's collection and reproduced in Hitchmough).

2.5.7 Early 19th century

- 2.5.8 Mary, the 3rd Countess of Orkney continued to live at Cliveden after the fire, surrounded by the charred ruin and inhabiting the one surviving side wing. The site remained a ruin for almost thirty years after the fire, although Mary did commission proposals for its reconstruction, and it became something of a Gothic curiosity for visitors and tourists as a romantic representation of ruined grandeur.

- 2.5.9 The unexecuted proposals for the reconstruction of Cliveden include one dated 1816 by Peter Nicholson for a radical Gothic remodelling and more significantly an unexecuted proposal that has been variously attributed to both John Nash and CR Cockerell (Fig 16). Gervase Jackson-Stops' article in *Country Life* (Feb 24 1977) has suggested a possible date of c.1805 for this proposal view which shows the terrace with a broadly similar form to that in the 18th-century views.

- 2.5.10 One interesting aspect of the view is that the detailing of the staircase facade corresponds more clearly with that shown on the 1750s views rather than those from the 1770s, particularly with the horizontal band above the niches. This may suggest that after the possible damage in the 1795 fire the staircase was rebuilt in line with the historic (original?) design shown on the 1750s views.

- 2.5.11 In 1818 the estate was offered for sale and the auction particulars refer to '*the celebrated TERRACE 360 feet in length (lately restored to its original magnificence)*' and the 'double flight of steps leading to the parterre'. The wording of 'lately restored to its original magnificence' would suggest that the terrace underwent a major phase of repairs or building works in the early 19th century, supporting the theory that the terrace did suffer greater damage in the 1795 fire than previously supposed (although it could be the somewhat exaggerated claims of a sales brochure).

2.5.12 Sir George Warrender (2nd quarter of 19th century)

- 2.5.13 The house failed to sell in 1818 but it was subsequently purchased in 1824 by Sir George Warrender who had inherited a considerable Edinburgh trading and property fortune. Warrender spent much of his time in Scotland but he was known as one of the *bon viveurs* of his age and he returned to Cliveden its reputation as being a place of entertainment. The Scottish architect William Burn designed a new mansion which had a relatively restrained and conservative design being just two storeys tall, compared to Winde's four storeys, and with a faintly Queen Anne style. It does not appear that the scheme included any significant alterations to the terrace.

- 2.5.14 Evidence relating to the form of the terrace in this period includes a parish map of Taplow from 1838, which again shows central stairs and short flights to the two side chambers and a travel book from 1847 which refers to the terrace being 'disfigured' by two projecting skylights at each end of the terrace. The book also states that orange trees were kept in the vaults

below so clearly the chambers were then used as orangeries and they were illuminated by skylights projecting above the paving.

- 2.5.15 An inventory of the same year was prepared and although this makes little mention of the terrace there are two orangeries referred to and we can be confident that these are the end chambers (discussed further by Hitchmough). Interestingly the next entry in the inventory is for a music room which is likely to be the central chamber beneath the terrace. In 1979 Lord Astor confirmed that this room 'was called the Music Room' (Lord Astor, unpublished notes presented to the National Trust. Quoted on page 63 of Hitchmough, 1997). Warrender is known to have had a passion for music (Crathorne, 1995) and it seems likely that the music room was well used during this period.
- 2.5.16 It is interesting to note that the 1838 parish map suggests that at that date the basic arrangement of the areas immediately surrounding the house had not changed greatly since being established in the late 17th and early 18th centuries. It still retained its overall formality with courts either side of the house.

2.5.17 Duke and Duchess of Sutherland

- 2.5.18 Sir George Warrender died in 1849 and the estate passed to his brother John who sold it to the Duke of Sutherland, one of Victorian Britain's richest men. The Duke bought Cliveden as a present for his wife Harriet. In November 1849 the house burnt to the ground again but unlike after the 1795 fire the new family wasted no time in rapidly commissioning Sir Charles Barry to produce plans for the rebuilding of the mansion.
- 2.5.19 Barry was among the giants of Victorian architecture and is most widely known for having designed the Palace of Westminster (Houses of Parliament) in the later 1830s. He worked on various schemes for the Duke of Sutherland, including at Trentham Hall in Staffordshire, and Cliveden was among the last of the many country houses that he designed. He was particularly known for his major contribution to the use of Italianate architecture in Britain, such as at Cliveden, and for his 'Palazzo' designs. It is thought that the South Terrace was left relatively undamaged in the 1849 fire.
- 2.5.20 Barry produced two main proposals: one was more ambitious and included substantial alterations to the terrace while the other, which is much closer to the executed design, only appears to have involved significant changes to the central section (Fig 17). The design shows a rusticated archway surrounding the opening to the central chamber and stepping forward slightly but no other clear differences to the structure today. The staircase elevations still show the niches and the surrounding walls are shown relatively plain. This may indicate that they were rendered but some faint detailing is shown and it could be that the plain nature of the staircase walls is merely to ensure that the detailing of the proposed house dominates the view.
- 2.5.21 The elevation does not show the end chambers so it is unknown whether Barry proposed alterations here but it is interesting to note that there is a plan included in a Country Life article from 7 December 1912 which appears to be Barry's proposal and this shows evidence relating to the end chambers (Fig 18). The plan isn't labelled as Barry's proposal but the staircase shown is the same as that from Barry's unexecuted proposal so it must be his and the plan suggests that the north sides of the end chambers were not buried as today but instead had an elevation (as in Hendrik de Cort's 1790s painting).
- 2.5.22 In common with many mid 19th-century buildings Barry's house at Cliveden was constructed of brick clad in Roman cement. Roman cement had been invented in 1786 and patented in 1796 but its use took off in the 1820s when the patent expired.

- 2.5.23 An article from the *Gardener's Chronicle* from 1853 confirms that the end chambers remained as orangeries after Barry's remodelling and with the lanterns projecting through the terrace floor.
- 2.5.24 A view of Cliveden from the *Illustrated Times* dated 1866 shows the wall behind the staircase clad in rusticated render and the blind arcade considerably more overgrown and in various contemporary accounts it is clear that ivy or other creepers were deliberately planted to cover the face of the terrace. The 1866 view was shown to mark one of numerous visits that Queen Victoria made to Cliveden to stay with her close friend Harriet Sutherland. The 1866 visit was unusually long however, lasting for 10 days and the Queen had an entourage of 90 people (Livingstone, 2015). The article from 1866 also mentions the central circular vaulted chamber and it shows that the end orangeries had glazed double doors in two of their three arched openings.
- 2.5.25 Duke of Westminster**
- 2.5.26 In 1868 Harriet died and the 3rd Duke of Sutherland, who inherited the estate sold it to his brother-in-law the 1st Duke of Westminster, another of the wealthiest men in the country. The Terrace Pavilion (or Cockerell Pavilion) was added in the 1860s at the north-western corner of the structure and possibly around the same time the ground to the west of the house appears to have been raised to effectively extend the west half of the terrace northwards. The painting from c.1798 by Hendrik de Cort clearly shows that at that date the north side of the western part of the terrace had a face and that the ground immediately to the north was lower. As mentioned above the *Country Life* article from 1912 (Fig 18) which appears to show Barry's 1851 plan also suggests that in 1851 there was a similar arrangement with the west end of the terrace overlooking lower ground on three sides. In contrast the 1876 OS map (Fig 19) shows the west end of the terrace continuing north up to the new Cockerell Pavilion as well as the rectangular lawn in this raised area which survives today.
- 2.5.27 It is interesting to note however that in 1876 the area immediately north of the east half of the terrace is different to that at the western end and also significantly different to that shown on earlier maps. Previous maps had shown this area (now the Duke's Lawn) as being a large formal court, probably at a similar height as the terrace and with a set of steps leading down to the east in a location further to the south than the current set of steps. The 1876 map however suggests that an attempt was made in the mid 19th century to redesign this area with a much less formal arrangement. The ground in this area is shown merging into the woodland to the east and without the clear division on the previous maps.
- 2.5.28 The 1876 plan appears to show an embankment to the north side of the terrace and returning north immediately to the east of the house. The map suggests that at this date the ground in this area was somewhat lower than it is today but the 1899 OS map appears to show that by this date it had been raised to a similar level to the terrace (Fig 21).
- 2.5.29 A view from *The Gardener's Chronicle* dated 1877 shows much of the terrace heavily obscured by plants and vegetation (Fig 20).

2.6 The Astors and Cliveden in the 20th century

- 2.6.1 In 1893 Cliveden was sold to William Waldorf Astor, the wealthy American who had moved to Britain in 1891. Astor used the house and grounds to exhibit his artistic taste as well as his collection of sculpture, art and artefacts.
- 2.6.2 It is believed that in this period (certainly in 1905) the terrace was gravel covered but the *Country Life* article of 1912 shows that at this date the surface had been covered by informal stone paving. Hitchmough speculates that this may have been undertaken by William Waldorf

Astor's daughter-in-law Nancy Astor who revived Cliveden in the Edwardian period as a venue for the rich and famous.

- 2.6.3 It may be that at the same time (1905-12) the lanterns over the end chambers were removed and the orangeries converted to ferneries, requiring less light. However, it is perhaps more likely that this change occurred in 1895, suggested by the fact that ornamental iron gates are known to have been added in this year to both the end chambers and the central Sounding Chamber. It may also be suggested by the fact that as outlined above it is known that prior to 1899 the ground to the north of both the end chambers had been raised and that this would have blocked a part of the light entering these chambers.
- 2.6.4 In 1942 Astor donated the estate to the National Trust. In the 1960s it came to national attention as a key scene of the Profumo Affair and then in the 1970s it was leased to Stanford University as an overseas campus. Since the 1980s the house has been leased from the National Trust as a luxury hotel.

3 GENERAL DESCRIPTION

3.1 Introduction and numbering

- 3.1.1 The South Terrace forms a c.130 m long 'shelf' on the rear (south) side of the mansion at Cliveden and extending east to west beyond each side of the house. The terrace affords spectacular views to the south overlooking the parterre and continuing towards The Thames and to Maidenhead. The ground level immediately to the south is c.6 m below the terrace surface and a double-dog-leg staircase at the centre of the terrace provides access between the two levels.
- 3.1.2 The southern face of the terrace is formed by a blind arcade with nine arches to either side of the central staircase as well as a further two partially visible arches to each side which are abutted by the staircase. Beyond each end of the blind arcade there are a further three open arches which form the front of two chambers known as the East Fernery and West Fernery. Adjacent to the two ferneries (ie behind the outermost parts of the blind arcade) there are further vaulted spaces known as the east barrel-vaulted chamber and west barrel-vaulted chamber. At the very centre of the terrace there is an archway which leads into a pair of rooms (one beneath the terrace and one beneath the house) known as the Sounding Chambers.
- 3.1.3 To the north of the terrace there are two lawns, (Duke's Lawn and West Lawn), one to either side of the mansion, and to the east the ground slopes down sharply towards the Rushy Valley.
- 3.1.4 In the current report the various investigations of the terrace and around it have been subdivided into 10 distinct groups or areas:
- Area A: The central staircase;
 - Area B: Blind arches
 - Area C: Ferneries and fernery water tanks
 - Area D: Sounding chambers
 - Area E: Barrel vaulted chambers
 - Area F: Terrace surface and substructure
 - Area G: Area in front of terrace
 - Area H: Area to west of terrace and pavilion
 - Area I: Duke's Lawn and West Lawn
 - Area J: Area to east of terrace and Rushy Valley
- 3.1.5 Each area has then been further subdivided as appropriate, for example Area C divides into the West Fernery (Area C.1), the East Fernery (C.2), the West Fernery Water Tank (C.3) and the East Fernery Water Tank (C.4). Distinct trenches in each area are also given a unique reference with each numbering block starting at 100 so the first trench in Area F is numbered F.100.
- 3.1.6 Where it is of assistance in the description some individual features (exposed walls, fills etc) within these subdivided areas or within trenches have then been given context numbers. Therefore a feature in the West Fernery may be numbered C.1.1 or a feature in a trench in Area F may be F.100.1. It has not however been attempted to give a number to every wall or feature (especially those which were already visible and above ground). The project numbering (Table of Features) is included at Appendix A.

4 STAIRCASE AT CENTRE OF TERRACE (AREA A)

4.1 Introduction

- 4.1.1 At the centre of the terrace is a fine double staircase which forms a key visual focus of the terrace and allows access between the upper level and the gardens below. Documentary evidence suggests that the original 17th-century terrace did not have a central staircase and that a staircase in this location was only constructed in the early 18th century. Physical evidence observed in the current project suggests that the staircase underwent considerable repairs/partial reconstruction, probably in the early 19th century, and this may have been as a result of damage from the fire of 1795.
- 4.1.2 Extensive conservation and reconstruction work has been undertaken on the structure in the current project and this has included the gradual peeling back of layers to expose the structural core of the staircase. Due to the nature of the works the numbering of this part of the overall project has broadly followed the different layers of the structure so that the rendered surface has been numbered A.1, the brick skin beneath this is A.2, the structure beneath this is A.3 etc (see Appendix).

4.2 Historical evidence

- 4.2.1 There are several pieces of documentary evidence which provide valuable clues to the origins and date of the staircase and we can be confident that the original 17th-century terrace did not include a staircase in this central location. The main early survey of Cliveden was that by Colen Campbell for Vitruvius Britannicus, published in 1717 (Figs 6-8). It is likely that the survey includes elements of proposal or unexecuted designs rather than being an entirely accurate 'as-built' record but as detailed elsewhere it is thought to be broadly accurate and we can be confident that the lack of the central staircase was a true reflection of this aspect of the structure. Campbell's preparatory drawings may have been produced some years prior to publication in 1717.
- 4.2.2 Another important plan from this period is Claude Desgot's from 1713 (Fig 2). This shows the parterre, apparently enclosed to east and west with long walls and at the northern edge of the plan there are two long flights of steps. Presumably these allowed access up the level of the terrace but the terrace itself is not shown and it is unclear whether they immediately adjoined the terrace or were connected by raised platforms. It is uncertain whether these long flights were an unexecuted proposal or a record of the original structure but the fact that no central stairs are shown supports the belief that the central stairs post-date 1713. It is interesting to note that Colen Campbell's drawings of Cliveden also show stairs at either end of the terrace and although they have quite a different form to Desgot's 1713 plan it does support the hypothesis that the terrace originally had end stairs rather than a central one.
- 4.2.3 There are several undated plans from the first quarter of the 18th century which do show a double staircase much as they appear today and although once again we don't know for certain whether they are proposal drawings or a record of the existing arrangement it is safe to assume that a central double staircase was constructed in this period. Wendy Hitchmough has broadly dated these drawings to between 1713 and 1723 and it is likely that they date to the latter end of this date range.
- 4.2.4 There are several views from the mid 18th century which all clearly show a double staircase similar to that which survives today with an arched opening at the centre flanked by a simple pair of columns beneath an entablature.

- 4.2.5 Two of these views are probably from the 1750s, with one firmly dated to 1759 (Fig 11) and these show the main front elevation with two niches to either side of the arched passage, within a regular arrangement of recessed panels and simple piers or pilasters. This arrangement of pilasters is very similar to a set of brick pilasters revealed by render removal during the current conservation works. A high resolution image of the 1759 view has been obtained from the British Museum and a good level of detail can be seen including faint coursing on the piers, pilasters and panels, suggesting they were of brick (or possibly ashlar). The view definitely suggests that at this date the staircase was not fully rendered.
- 4.2.6 It is also possible to see that the entrance portico is flanked by two full height pilasters or columns with capitals, projecting very slightly from the main wall, with further shorter columns within these and engaged columns supporting the archway. It is worth noting that the two niches two either side of the staircase in the 1759 view are the same height to each other, unlike today where the inner niches are slightly taller.
- 4.2.7 There are two later views, one from c.1779 and an undated one by John Donowell (Fig 12) that is probably also from the 1770s and although these show the staircase with the same basic double form as before they suggest that the elevations have been remodelled since the 1750s. They show clearly that by this period the staircase was rendered, possibly to match the rendered face of the long blind arcade that had been added since 1759. There can be little doubt that it was rendered due to the different way that the brick end chambers were depicted in the Donowell view with clear coursing visible.
- 4.2.8 Presumably the render merely covered over the pilasters visible in the 1750s. The view shows a simpler set of two columns (apparently semi-circular) to each side marking the edges of the upper landings. It is curious to note that Donowell's view only shows one niche to each side whereas the c.1779 view shows two, with the outer ones shorter than the inner ones (corresponding to the current arrangement). It is also interesting to note that the 1770s views each show the lower flights with balustrades to either side of the steps (ie to north and south).
- 4.2.9 The next view dates from the early 19th century and although this is an unexecuted proposal (possibly by John Nash or Cockerell) for rebuilding the house after the 1795 fire it is believed that it does accurately show the form of the terrace in this period (Fig 16). It is likely that it either shows the terrace and stairs with their existing form when the designs for the house were being prepared or it shows proposals for the terrace and stairs which were then carried out (unlike the proposals for the house). The view once again shows a double staircase, similar to those from the 18th-century views but with an arrangement of pilasters like those from the 1750 views rather than the 1770s views. The four niches are consistently sized, unlike those in the views from the 1770s but they appear smaller in relation to the overall wall of the staircase, supporting other evidence to suggest that this staircase could have been taller than the previous one. This view shows the lower flights with only one balustrade, to the outer (south) face, rather than to both sides as in the 1770s.
- 4.2.10 Sir Charles Barry's remodelling in 1850 included the addition of a rusticated stone portico surrounding the doorway to the Sounding Chamber and apparently partially glazed doors. This stone portico is clearly shown on Barry's designs of 1850 (Fig 17) and these designs also confirm that the current rustication to the terrace wall behind the staircase must have been a slightly later addition.

4.3 Description

4.3.1 *General overall summary description*

- 4.3.2 The staircase comprises a double flight of stone steps, descending to either side from a landing at the height of the terrace, and dog-leg returns to the lower level. The staircase has stone

treads, rendered brick walls and a stone balustrade incorporating balusters with a variety of different forms and dates. The staircase surrounds an arched passage through to the Sounding Chambers and towards the inner end of this passage there are straight joints to either side wall indicating that the staircase and main terrace wall are from different phases of construction. These joints support the historical evidence to confirm that that the staircase is a secondary addition (discussed further in section 7; see Pl. D2). The character of the brickwork to either side of the joints in the passageway is very similar to each other suggesting that the staircase was constructed relatively soon after (a few decades) the terrace.

- 4.3.3 The staircase is set immediately in front of the terrace arcading and it abuts it with the blind-arcade brickwork cut back slightly in parts to accommodate the staircase stonework (discussed in section on Area B: Blind Arcade). The staircase incorporates a rusticated stone portico which surrounds the arched entrance passage through to the Sounding Chamber and this portico is known to have been constructed as part of Sir Charles Barry’s works in c.1850. The access passage beneath the staircase is discussed in more detail in the relevant section on the Sounding Chambers (Area D).
- 4.3.4 As referred to above it has been decided that the numbering of this structure will broadly follow the layers as they were peeled back to expose the core of the staircase structure beneath.

4.4 Main walls of staircase

4.4.1 RENDERED WALLS OF STAIRCASE (A.1)

- 4.4.2 Prior to its removal in the current project the main walls beneath the staircase balustrade (other than the portico) were clad in a render that was in very poor condition with numerous cracks, extensive patches of staining and areas where the face render was either coming away from the base render behind or even from the brick wall itself behind that (Plates A1-A13). This render formed a flush face with the stone bands at the base of the balustrade and along the base of the wall itself. There were many clear areas of extensive repairs to the render and these appeared to divide into three main types/phases (numbered A.1.1 -A.1.3 in the current project). The table below provides a brief summary of the types of render to each elevation.

Elevation	Notes on render
South face of upper flight (west side). Including the two niches (Pl. A2, A4)	This was clad in a hard render (Roman cement?) [A.1.2] which is believed to have survived from the 19 th century and possibly from Barry’s c.1850 works. It had scoured grooves to give the appearance of ashlar but the grooves were softer than those in the later repair (render A.1.1) and the condition of the render was worse. In many areas the ‘base’ render was still fixed to the bricks but the face had flaked away.
South face of upper flight (east side). Including the two niches (Pl. A9-A10)	The west half of this was clad in the hard render (Roman cement? A.1.2] with soft grooves which is believed to have survived from the 19 th century and possibly from Barry’s c.1850 works. The eastern half of this wall was clad in a later render (Type A.1.1)
Lower flight west side, facing south (Pl. A3)	This was largely clad in the type A.1.2 render which is believed to survive from the 19 th century (probably 1850s works) but in several places the render had entirely come away from the brickwork behind.
Lower flight west side, facing west (Pl. A5)	Largely clad in a cement render (Type A.1.1) with a fine texture and with crude grooves formed in face to give the superficial appearance of ashlar. This is likely to have been a 20 th century repair and the scoured grooves were harder than those in render type A.1.2.

<p>Lower flight east side, facing south (<i>Pl. A11</i>)</p>	<p>The west half of this wall was clad in the Roman cement (?) render (Type A.1.2) which is believed to survive from the 19th century while the east half of this wall was clad in a coarse render (type A.1.3) different to the other render types and with crudely (almost carelessly) formed 'ashlar' grooves. This is probably the latest of the three render types (possibly mid 20th century).</p>
<p>Lower flight east side, facing east (<i>Pl. A12-13</i>)</p>	<p>Largely clad in a cement render (Type A.1.1) with a fine texture and with crude grooves formed in face. This is likely to have been a 20th century repair.</p>

4.4.3 FACING WALLS OF STAIRCASE AFTER REMOVAL OF RENDER (A.2)

- 4.4.4 The removal in the current project of all the render which covered the walls of the staircase has revealed a previous striking decorative scheme formed from pilasters of fine, rubbed red brickwork (A.2.1) with very thin white joints and slightly recessed panels of standard brickwork (A.2.2) with penny-roll pointing (*Pl. A16-A.22*). It is clear that the fine-jointed brickwork would originally have been intended to be visible although it could be that the slightly recessed panels of lower quality brickwork could have been rendered or limewashed.
- 4.4.5 The soft brickwork of the pilasters was found to have been substantially damaged by the removal of the hard render which covered them and the face of most of the bricks was found to have been lost. Their condition was exacerbated by the fact that the pilasters were only a single brick thick and were not keyed into the main staircase structure. Their construction suggested that they had been added onto an existing staircase carcass in the form of a cladding.
- 4.4.6 The **overall design** comprised three vertical pilasters to the main southern face of the staircase, either side of the central opening to the Sounding Chambers, together with sloped (and curved) bands of fine brickwork immediately beneath the stone plinth of the staircase balustrade. The pilasters were 0.66 m wide and the bands were 0.28 m tall (four brick courses). It also included a horizontal band between the innermost two pilasters to each side of the staircase and also a longer horizontal band immediately above the stone plinth beneath the niches. These pilasters and bands of fine brickwork surrounded four slightly recessed panels (recessed by c.2 cm) formed from a lower quality brickwork and with much thicker (and inconsistent) joints. The lower quality bricks were generally a plum colour and their character was suggestive of an 18th or 19th century date⁴. Ten courses of the fine rubbed brickwork measured c.65 cm while 10 courses of the infill panel brick measured c.73 cm and 10 courses of the brickwork that forms the niche jambs measured c.70 cm.
- 4.4.7 The fine brickwork and the infill panels were not bonded together and their coursing did not match but it was considered likely that they were contemporary with each other. The panels had a secondary, hard mortar at the surface but they had a softer bedding mortar that was more similar to the mortar used in the fine brick, but with thicker joints.

⁴ John Brushe (former Conservation Officer at South Bucks District Council) has noted that the use of varying colours, textures and types of brick is typical of the work of Thomas Archer as well as setting them at slightly different planes (ie recessed panels). This is clearly of interest as Archer is known to have undertaken work at Cliveden in the first quarter of the 18th century although evidence suggests that at least parts of the outer skin of the staircase are secondary alterations (discussed further below).

- 4.4.8 During the removal of the main thick render earlier phases of render/limewash were noted beneath. These layers were only really observed on the panels, rather than the fine-jointed brick, but this would at least partially have been because the face of the finer brick had been lost during the process of render removal. It appeared that the lowest layer was a render/limewash applied directly on the bricks, particularly found on the main south face of the staircase, and above this was a yellow colour render. It is likely that the panels of brickwork were always intended to be painted/limewashed. The earliest coating (limewash) appeared to overlie the soft bedding mortar but it appeared that the harder repointing was on top of this limewash. The slightly yellow-colour render (Roman cement?, type A.1.2) was on top of both mortars and then in areas there was the thicker, harder cement render used to repair the structure on top of this (Type A.1.1).
- 4.4.9 The brickwork in the panel above the easternmost niche (to east of centre) appeared to have been reconstructed in the uppermost c.8-9 courses above the keystone.
- 4.4.10 The design was broadly continued in the four walls of the two landings and lower flights with fine-jointed brick bands (again four courses tall) immediately above the main stone plinth around the base and immediately below the stone plinth of the staircase balustrade. These parts of the staircase did not however have vertical pilasters of rubbed brick like the main southern face.
- 4.4.11 The arrangement of pilasters and bands exposed in the works is very similar to those shown in the early 19th century watercolour view (unexecuted proposal for the house) and although the structure may have undergone repairs since this view (possibly extensive) the overall form of the staircase has not changed greatly (Fig 16). The niches in the view are essentially the same as those surviving today and panels in the view are slightly recessed. A key feature of the view however is the fact that the staircase walls appear to be clad in stucco, including the pilasters and bands which we know are of fine-jointed brickwork. This suggests that by the time of this view (early 19th century) the stairs had already been rendered and the fine brickwork, which was clearly intended to be visible, was from an earlier (presumably 18th-century) phase. Alternatively however it could be that the addition of render was part of the unexecuted plans for Cliveden at this date and it was not actually rendered until a later phase. The proposed house is shown in a similar yellow stone colour so the red brick pilasters would have visually clashed and it would seem natural to use stucco to help make the different structures blend together.
- 4.4.12 The one area where the design of the staircase shown on the early 19th century view differs to that of the actual structure recently exposed is that the walls of the lower flights are shown with pilasters whereas there were no such pilasters in the fabric exposed.
- 4.4.13 **Observations during dismantling of rubbed brickwork.** The poor condition and lack of stability of the fine-jointed, rubbed brickwork, following the removal of the covering render, meant that it could not be left in-situ. As referred to above it was effectively a single-brick thick cladding applied to the carcass of the staircase and not bonded into the structure behind in any meaningful way. Parts of the pilasters and rubbed brick bands collapsed in the process of removing the render and the rest was then dismantled to allow a new, structurally stable face to be reconstructed. The lack of structural stability to the pilasters suggests that the hard Roman cement render coat may have at least partially been applied to hold the structure together.
- 4.4.14 It was apparent that in some areas fillets of slate had been driven into the face of the wall (especially to east and west walls) to wedge in failing or bulging brickwork. It was also apparent that in some areas the fine brickwork was attached to the wall behind with a hard, dark

grey/brown mortar similar to that which was then also used for the render facing which covered the bricks. It may be that parts of the pilasters were collapsing during the work to add the render and therefore they were reapplied using the same render/mortar.

- 4.4.15 It was also noticeable that in some areas (eg the easternmost pilaster to the east side of the staircase's main face) the fine-jointed brickwork appeared to have been reconstructed reusing the historic soft brickwork. In these areas the jointing of the fine brickwork was thicker and the mortar was coarser but there were still thin traces of the earlier white mortar attached to the bricks.
- 4.4.16 It could be seen that in the area between the tallest brick pilaster and the adjacent niche on the east side of the structure the brickwork forming the panel was not bonded to the main structure behind. The coursing of the facing brick and the bricks forming the structural core behind were distinctly different. This helped confirm the impression that the pilasters and panels were a cladding applied to an earlier structural core.

4.4.17 *Brickwork exposed immediately behind removed pilasters*

- 4.4.18 The general quality of the brickwork behind the removed facing brick (both pilasters and infill panels) was very poor with numerous areas where there was mortar used to the horizontal joints but none to the vertical joints. This brickwork also had many areas of irregularity such as apparent vertical breaks which could be indicative of phasing or could simply be from poor quality brick laying. The evidence was not easily understood but it was very clear that this was not a former visible face which was encased within the later skin.
- 4.4.19 One particular area was behind the rubbed brickwork forming the central pilaster to the eastern side of the staircase (Pl. A64-65). The removal of some of the facing pilaster exposed what appeared to be two vertical straight joints in the rough brickwork behind: one of these was very closely aligned with the western edge of the pilaster but the other was inset by c.10 cm from the eastern edge of the removed pilaster. Initially the facing pilaster was only removed to a line at 1.55 m above the top of the plinth and it was expected that the joints would continue vertically up the pilaster but when the rest of the fine brick was removed it could instead be seen that the eastern structural joint curved eastwards behind the brickwork panel (Pl.42). This suggested that the joint may have resulted from an area of rebuild rather than a deliberate design feature.
- 4.4.20 In addition to the vertical joints the removal of the fine-brick pilaster also exposed a horizontal distinction in the brickwork at the same height as the base of the adjacent niches. Below this line the brick steps forward slightly and the character of the brickwork is different above and below the line (although both sections are crudely constructed). It could be seen that the fine rubbed brick in this pilaster was fixed in some areas (possibly extensively) with a hard light grey mortar clearly different to the older lime mortar also visible on the core brickwork.
- 4.4.21 It was again observed that on the E side of this feature the front skin of the panel wasn't bonded to brick behind.
- 4.4.22 The band of rubbed brick immediately above the plinth was also removed during the current project and beneath the two niches on the eastern side of the staircase there was something of a pattern in the construction of the core wall behind. In these areas there were regularly spaced sets of three bricks which were set at a lower level than the other bricks. The reason for this was unclear.
- 4.4.23 *Niches:*** The removal of render from the four semi-circular niches showed that the bricks which formed these features were c.6.25 cm tall (with 10 courses measuring 71 cm in height) and they were mainly an orange/red colour but with some plum coloured bricks mixed in. This brickwork was of a rough character, partly due to the faces of many bricks having been lost

due to the removal of the render but it seemed clear that the brick forming the niches was never intended to be exposed. In each niche the brickwork skin to the front wall was not bonded into the main wall behind and in areas the coursing did not match (Pl.A67-68). The construction suggested that a previous skin had been removed to allow the construction of the current front skin. The brickwork behind the current face was found to be rough, apparently truncated and with mortar roughly applied to the joint between the front face and the brick behind.

- 4.4.24 The arches above the niches were formed from fine-jointed brickwork but it is interesting to note that they were flush with the panels rather than the pilasters which were set c.2 cm in front. This would imply that if the panels were plastered or covered with a limewash from the outset as it is believed then these would apparently also have been covered.
- 4.4.25 There was very little evidence of fire/smoke damage although there were one or two fragments of very smokey brick behind the front face of the niche to the east of centre (west side of niche).
- 4.4.26 One of the interesting features exposed was a set of inscriptions including two initials (W and RW) and a date (1739) inscribed on the western jamb of the facing brick to the easternmost niche (Pl.A.47). The brickwork with these inscriptions strongly appeared to be in-situ rather than forming an isolated reused brick with a date from a different building, partly due to the number of scratches and similar marks across several adjacent bricks.

4.4.27 Relationship between fine bricks and portico

- 4.4.28 During the project one of the interesting points considered was the dating relationship between the fine-jointed, rubbed brick pilasters and Charles Barry's 1850 portico.
- 4.4.29 Barry's proposed elevation shows the walls of the staircase as being rendered and therefore it has been assumed that the pilasters would never have been visible after the addition of the portico. The fact that Barry's mansion was also to be clad in Roman cement render would also make it seem unlikely that the stark red brick pilasters would be left exposed after these works.
- 4.4.30 However, if the builders constructing the portico knew that the adjoining brick walls were going to be rendered over then they would presumably have roughly hacked off the edges of the fine-jointed pilasters to allow them to easily erect the portico. In fact the way that the fine-jointed pilasters have been carefully preserved could suggest that they remained visible for a short time after the erection of the portico, or even that they may have been contemporary (at least partially) with the portico.
- 4.4.31 The tall pilasters and the portico adjoin each other vertically (Pl. A48 and A66) and generally the portico appears to abut the pilasters, in some places being set in front of it and 'sandwiching' the rubbed brick between the stone portico and the brick core of the stairs behind. This appeared to confirm that the fine-jointed brickwork was earlier than the portico. There were also some areas however where the phasing and relationship were less clear and parts of the fine brickwork appeared to abut the stone portico. This may have resulted from later repairs to the fine brickwork or possibly it was necessary to dismantle parts of the fine brick while the portico was being constructed. Generally the upper halves of the portico appeared to abut the fine jointed brickwork whereas in parts of the lower half (particularly to the eastern side) the portico appeared more recessed. Towards the top of the western side of the portico it strongly appeared that the bricks had been cut back to accommodate the portico although this was not apparent on the eastern side.
- 4.4.32 One possibility could be that the walls of the staircase had already been rendered prior to Barry's 1850 works, possibly as part of William Burn's 1820s phase. Roman cement was in

common use in the 1820s and if the staircase was rendered in the 1820s then it would seem plausible that the 1850 builders would have taken care not to damage the render during the construction of the portico.

4.5 'Carcass' of staircase: east side (A.3)

- 4.5.1 The dismantling of the east facing wall of the staircase revealed an earlier hidden brick 'face' 42 cm behind (to the west of) the main rendered face (A.1 & A.2). The brickwork that formed this earlier face (A.3.1) was red and it had a fairly rough quality akin to a garden wall (*Pl.A49-53*). The bonding was inconsistent but it was close to a garden wall bond, largely formed from headers. Ten courses of this brick measured 75 cm in height and the character appeared to be the same as to the opposite (west) face of the same wall (ie beneath the steps).
- 4.5.2 Between this earlier brickwork and the finer face 42 cm to the east, the wall had something of a 'void' that was found to be filled with construction debris, in particular bricks and a large number of stone blocks with mouldings (A.3.2 – see Appendix D). Presumably this stonework was debris resulting from the 1795 fire at Cliveden and it was noticeable that some of the infill stones found encased within this half of the staircase had a pink colour which is believed to be the result of fire/heat damage. This appears to show that the fine brick face must post date 1795 (at least in this area). Towards the northern end of this infill there were fewer blocks of stone and more in-situ brickwork suggesting that this may have survived from an earlier arrangement and that the large area with stone blocks was an extensive (but not complete) rebuild.
- 4.5.3 A small number of moulded stones were also reused in the band immediately beneath the balustrade. With each of these one face of the stone was flattened and then the stones were set with this side forming the face.
- 4.5.4 It appeared that the main part of the infill (A.3.2, stone blocks etc) and the outer face with fine-jointed edging (A.2) were contemporary with each other. The fine jointed brick was essentially only a single brick thick (c.11 cm) but it was also partially strengthened with occasional longer east-to-west bricks and deeper stone lacing pieces constructed into the wall.
- 4.5.5 The rough character of the brickwork (A.3.1) was perhaps exaggerated by the fact that there was a dark stain across the wall similar to if the wall had been buried. In isolated places fragments from the face had come away to show the original orange/red colour of the brick behind. One possibility was that this dark stain was caused by an ashy wash that coated the wall, potentially after the 1795 fire and this appeared to be particularly present towards the northern end of the wall immediately behind the fine brick face (A.2). Indeed towards the junction with the blind arcade the contrast between the colour of the fine-jointed brick face and all the brickwork behind was very striking (*Pl.A52*). The section here made visible by the dismantling of the wall explicitly showed that the brickwork in the fine-jointed skin was a pristine red whereas all the brickwork behind had what appeared to be a dark coating. The strong impression, at least in this area, was that all the brickwork behind the fine-jointed face had been severely affected by fire but the face showed no evidence at all, supporting other evidence that suggests that the fine-jointed skin post-dated at least one of the fires.
- 4.5.6 The south facing wall of the eastern lower flight was also found to have a rough 'infill' wall immediately behind the outer skin and this was again constructed from reused bricks and many reused stone blocks with mouldings. Again the front face of the wall was partially keyed into this 'infill' wall with occasional longer lacing stones and north-to-south full bricks.
- 4.5.7 However, the removal of this south-facing wall revealed an arched opening into a north-to-south brick vaulted space (4.93 m long x 1.93 m wide) supporting the landing above (*Pl.A53*). The brickwork surrounding this opening appeared contemporary with the wall exposed on the

east face of this part of the staircase (A.3.1) and this suggested that this inner structure would have been constructed as a carcass which was always intended to be encased by a shell; there would clearly always have been a wall on the south side in front of the arched opening and therefore, from the way the structure was constructed, there must also have been a facing wall on the east side. It strongly appears that the inner wall exposed on the east side (A.3.1) cannot have actually formed a visible face.

4.5.8 Both of the outer shell walls to this eastern flight (ie A.3.2 infill and facing skin A.2) were probably constructed in lifts of c.4-5 courses with the fill and then with the face raised to the same height.

4.5.9 Staircase foundations: A trench was dug immediately to the south and east of the eastern side of the stairs which exposed deep brick foundations to each side (*Pl.A54-55*). The trench adjacent to the south wall continued east-to-west along the full length of this part of the staircase. The trench was c.0.85 m deep beneath the ground surface (1.1 m beneath top of plinth) and 11 courses of brick were exposed within this trench (A.3.3) extending down to what appeared to be a compacted chalk layer at the foot of this trench.

4.5.10 The uppermost course had been cut back slightly and levelled prior to the construction of the flight of stairs on top of it. The four courses beneath the uppermost one were relatively regular but the courses below this stepped out slightly and were rougher with thick joints and inconsistent bonding. From the cut-back upper course it appeared clear that the foundations were from an earlier constructional phase than the staircase above. This east-to-west wall appeared to be c.0.7 m in width although this dimension could only be partially seen at the east end.

4.5.11 The depth of the foundations would seem far larger than would be necessary for the staircase and this supports the evidence of the cut-back upper course suggesting that the wall was from an earlier phase and structure. It may well be that this wall relates to various other major buried walls which are believed to survive from the Duke of Buckingham's initial phase of construction. In particular they may relate to a major east-to-west wall which was exposed some way to the east in a set of pits dug for a slide [wall G.101.1]. The walls (G.101.1 and A.3.3) did not perfectly align but they could still have related to each other.

4.5.12 This wall (A.3.3) beneath the staircase had been much altered however and its form could not be easily interpreted

4.5.13 At the eastern edge of the stairs there was a vertical break extending down through the foundations although it appeared that the structure had been truncated at this point and that it at least partially formerly continued eastwards. A 0.4 m wide foundation wall (A.3.4) did continue eastwards aligned with the front (south) face of A.3.3 but this had clearly been truncated and once formed part of a wider structure. Approximately 1 m to the north of A.3.4 there was the stepped remnant of another former structure (A.3.5) which also appears to have formerly continued eastwards away from the staircase but again not enough of this survived to make a clear interpretation (*Pl.A54*).

4.5.14 **Eastern lower flight construction:** When the steps were removed from the eastern lower flight it was possible to see that the substructure comprised three east-to-west piers of relatively crude brickwork with the southernmost pier constructed against the fine-jointed outer skin but not bonded to it (*Pl.A57*). Each pier was c.0.37 m wide and the central pier supported the mid point of each step. Twenty courses of this brickwork was 1.5 m in height and the character of the brickwork appeared different to that of the corresponding piers in the western lower flight. On the east side the brickwork, especially the uppermost courses, was more fragile and less solid than on the west side and the bricks were slightly smaller (bricks generally c.6.25 cm

tall). The difference in character might however have been exaggerated by the fact that more damp had got into the bricks on the east side.

4.5.15 **Substructure beneath eastern lower landing:** the removal of paving slabs from the eastern landing, where the staircase returns on itself showed that the brick vault that supports the landing extended up to immediately beneath the paving slabs. Indeed, the crest of the arch appeared to have been truncated slightly (especially at the end) apparently because the vault was slightly too high. This contrasts sharply with the west landing which included a thick layer of clay (discussed further below).

4.5.16 Both the **upper flights** on the east side of the staircase could be seen to have a similar arrangement to the lower flight with three east-to-west piers and with the outer (southern) one structurally separate from the facing wall of the staircase (Pl. A56). The landing between the upper flights and the top of the upper flight each had simple, single-skin brick arches and unlike on the west side of the stairs there was no layer of clay above the arch at the top of the flight.

4.6 Carcass of staircase: west side (A.4)

4.6.1 Dismantling western wall of staircase

4.6.2 The removal of the fine-jointed brick face to the western (N-S) wall of the staircase revealed a rough brick wall (A.4.1) immediately behind which was not bonded to the fine brick face (at least in the areas seen). This wall was largely constructed with a header bond, with some occasional stretchers mixed in, but this was clearly not intended to be visible (PIA23). The quality of the brickwork was poor and the coursing/jointing irregular. At its southern end this wall (A.4.1) extended around the corner to also form the core of the southern wall.

4.6.3 Behind this core wall (A.4.1) and 37 cm behind the main visible brick skin (A.2) there was a further 'face' (A.4.2) exposed by the dismantling works to the west wall of the staircase (PIA26). This face was only partially exposed; the uppermost courses were visible as well as a slightly larger area towards the northern end of the wall. In the area exposed at least part of the wall was found to have a curious stepped (saw-tooth) profile which gave the appearance of simple brick rustication and initially it was wondered whether this was once a visible face with 'rusticated' decoration (PIA27). This was particularly considered possible because the structure which encased it came away from it easily, and with relatively little mortar between the two, strongly suggesting that the outer shell was a later addition.

4.6.4 However, the nature of the stepped brickwork was more suggestive of it having been constructed in this way to allow a visible skin to be constructed against it and keyed in to this carcass. It may be that one grade of brick layer would construct the carcass while another grade would construct the visible shell so A.4.1 and A.4.2 could essentially have been from the same general phase. This stepped-brick face to the wall was only exposed towards the northern end of the wall but the section that was visible continued for a height of c.1 m, from c.15 cm above the top of the plinth up to c.1.15 m above the plinth. Above this there was c.40cm of a brick face which was not stepped. The stepped brick had a relatively rough character rather than being fine facing brick and it was a dark colour. (discussed further below).

4.6.5 It was interesting to note that wall A.4.1 appeared to have been constructed over the earlier wall (A.4.2) and over the vault supporting the landing. It may be that the upper part of the earlier wall (A.4.2) was partially dismantled and the wall then built up when the skin was added.

- 4.6.6 At the northern point of the west wall, where the staircase wall met the blind arcade, the dismantling of the outer staircase shell exposed similar evidence to that referred to above at the corresponding point on the eastern side of the stairs, possibly relating to a former fire. An extensive black residue was exposed, concentrated at the northern end of this wall, behind the facing bricks (*Pl.A27*). Some of the bricks in this area were also blackened, although it was unclear whether the blackening was simply from the residue having coated them. The blackening or residue was generally on the rear brick 'face' (A.4.2) but the evidence was slightly contradictory with some blackening on brickwork that formed part of the outer brick (A.4.1). In the areas closely examined there was no residue on the fine-jointed brickwork itself however. Similarly to the eastern side of the staircase the evidence suggested the possibility that an ashy sludge from one of the fires had washed over the edge of the terrace and down the side of the staircase. Subsequent to this the brickwork skin with fine, very white mortar may have been reconstructed. This residue appeared to have darkened the rusticated or stepped brick 'face' (A.4.2) to the carcass structure mentioned above.
- 4.6.7 Another interesting structural junction observed during the dismantling was the point where the western face of the staircase adjoined the blind arcade. At this point the wall of the staircase coincided with the western jamb of one of the arcade arches and it was clear that the edge of the arch had been slightly cut back to allow for the western edge of the wall to slot in. The lowest 3-4 courses were hardly cut back at all but the 10 courses above this were cut back by 1-2 cm and the top 5 courses, immediately beneath the plinth of the stair balustrade, were all more substantially cut back. The amount that the pier edge was cut back did not gradually increase but instead there were two distinct steps. The deeper cutback for the five uppermost courses of the pier was presumably to allow for the edge of the slightly projecting band of fine-jointed brickwork along the west side of the stairs.
- 4.6.8 The evidence at this crudely cut-back pier suggests that the face of the staircase post-dates the construction of the blind arcade. If the arcade post-dated the staircase (at least the face of it) then it would presumably have been set out to neatly abut the stairs.
- 4.6.9 A small hole was formed through the west wall, in the northern part of the wall, and this showed that the landing was supported by a brick vault, orientated north to south, although this only extended c.2.5 m from the terrace and aligned with the upper flights of stairs (*Pl.A25*). This was formed by a double brick arch with a hard lime mortar and the character of the bricks would be suggestive of an 18th century date of construction.
- 4.6.10 **Foundations:** A small trench (1 m long and c.1.2 m west from the lowest step) was opened against the south face of the western lower flight of stairs and similarly to the eastern lower flight this showed that the plinth was set on earlier brickwork (*Pl.A29*). Immediately beneath the 25 cm tall plinth there were a number of fillets of stone and slate, forming a flat surface for the plinth, and beneath this was a course of header bricks which appeared to have been cut back or taken down. Beneath this there was a face formed by 10 courses (81 cm) of rough quality English bond brick. The lower half of the brickwork was rougher than the upper half, with mortar allowed to squeeze out of joints rather than neatly pointed, although it is unlikely that any of this wall would have been visible. The trench continued down c.95 cm below the current ground surface at the base of the plinth and at this level there was a compacted white lime/chalk layer that was interpreted as being a foundation for the wall.
- 4.6.11 **Western lower flight construction:** When the steps were removed from the western lower flight it could be seen that the basic construction of the substructure supporting the western lower flight of steps was similar to that on the east side with three east-to-west piers, although the character of the brickwork was slightly different to that on the east side and the size of the

piers was also different to those on the eastern side (Pl. A28). The two outer piers supporting the western lower flight were 0.32 m wide, while the central pier was 0.47 m wide, and the brickwork was much more solid than that in the eastern flight. The piers were bonded with a very hard mortar (but still probably lime mortar) and they were a variety of colours with both reds and blues mixed in. They were slightly larger than the bricks in the corresponding piers to the eastern lower flight (generally c.6.5 cm tall and with 20 courses measuring 1.6 m) and their character was suggestive of an early 19th century date. At the western end of the lower flight was a north-to-south wall supporting the landing and this was of the same construction as the three piers. Similarly to the eastern stairs the southernmost pier was again set against the outer skin of the stairs and not bonded into it.

4.6.12 The western lower landing appeared to comprise a long brick north-to south vault, with clay over at least part of the southern part of the vault. As referred to above a hole in the west wall allowed some visual access into the vault beneath the northern part of the west landing but this was sealed with an east-to-west wall aligned with the front of the staircase. It was not possible to see into the vault beneath the southern half of the landing.

4.6.13 ***Western upper flights construction:***

4.6.14 The upper flights on the western side of the staircase were again constructed with three brick piers supporting the stone treads and the piers themselves were each supported by brick vaults (Pl.A34-38). The bricks were red, they were laid in a relatively rough fashion and 10 courses measured c.80 cm. Their character was different to those in the lower western flight. The southern pier was found to abut the main front facing wall of the staircase and there was something of a black residue to the inner (north) side of this wall which may possibly relate to one of the fires. The upper 2-3 courses of brick in each of the piers in the middle flight also had some black discolouration.

4.7 Portico (A.5)

4.7.1 Some localized repair works were undertaken to the stonework in Barry's c.1850 portico and one interesting feature revealed by the removal of a section of stone was part of a former moulded cornice encased within the later rusticated stonework (Pl. A62). This incorporated a cavetto moulding with a simple 90 degree rebate below it and a simple sloped face above it. This was located to the eastern half of the front (southern) face of the portico and it was immediately beneath the existing cornice. The stone was 0.67 m long and the eastern edge of it was 0.58 m west from the eastern edge of the portico. The point furthest forward in the exposed fragment of the cornice was c.6 cm behind the front face of Barry's portico. It was also interesting to note that there appeared to be traces of a grey paint on the exposed cornice (particularly to the cavetto moulding and the shallow rebate).

4.7.2 It is difficult to know for certain when this section of cornice dates from. It is perhaps most likely that survives from the original construction of the staircase (c.1720s), but it could have been added either in the suspected phase of alterations undertaken to the staircase in the mid-later 18th-century (c.1750s-1770s) or possibly in the reconstruction/restoration undertaken in the early 19th century after the 1795 fire. The cornice could correspond with the evidence shown on both the 1759 view and John Donowell's view, probably from the later 1770s.

4.7.3 The stones in Barry's portico used a very hard and smooth, dark grey bedding mortar (behind a fine white jointing mortar) which looked similar to a mortar found behind some of the fine-jointed brickwork uncovered in the current project to the faces of the staircase.

4.8 Summary and conclusion

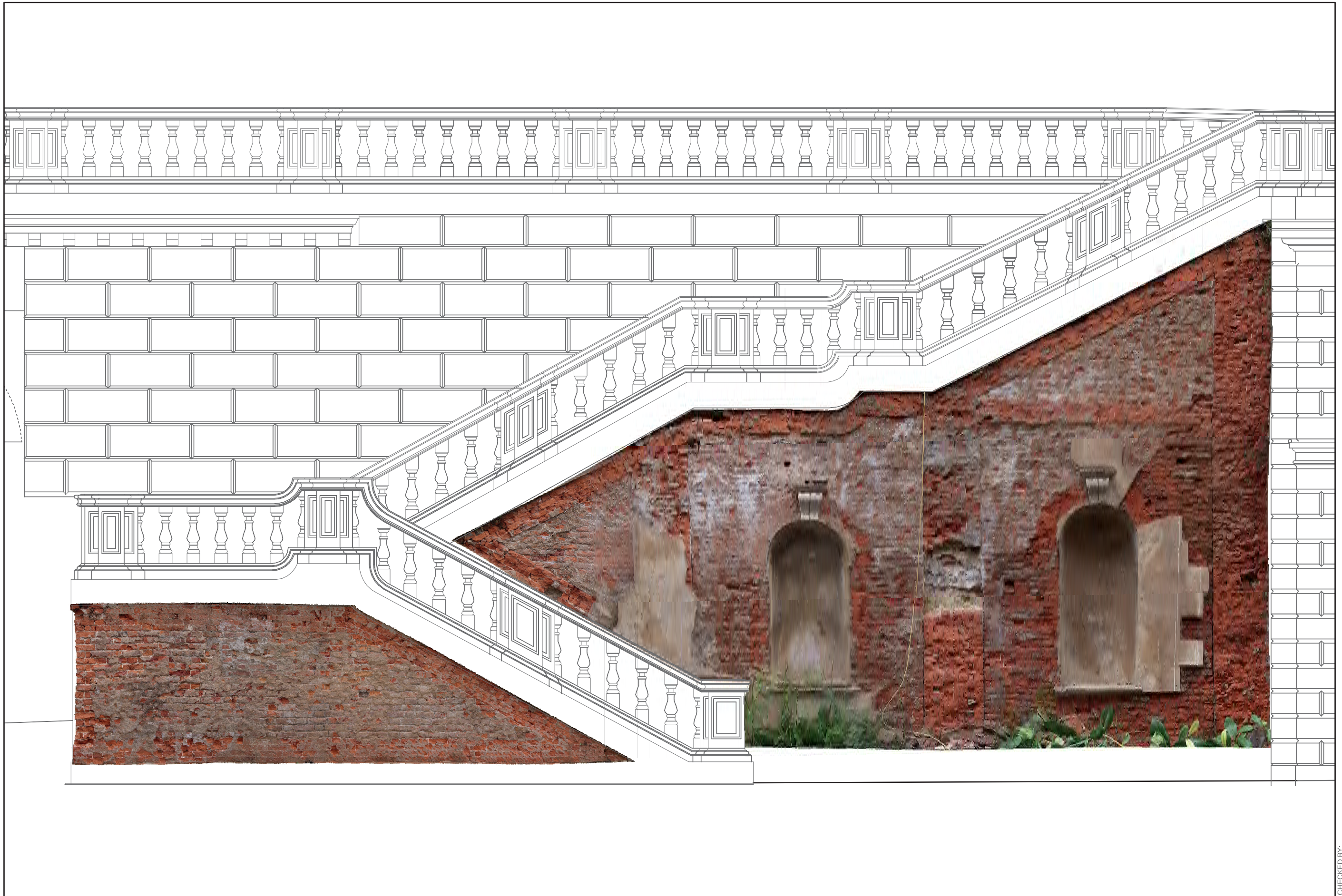
- 4.8.1 Although the double staircase at the centre of the South Terrace is known to have been a secondary addition, probably dating from the 1720s, it is among Cliveden's most prominent and significant structures, forming a key visual focus in views from the south and it is difficult to imagine the terrace without it. The approximate date of the 1720s for the construction of the staircase is suggested by several plans from this period and it may be that it was designed by the important Baroque architect Thomas Archer who is known to have undertaken work at Cliveden in the first quarter of the 18th century. We have a good understanding of its appearance in the mid 18th century from two views from the 1750s and then two slightly later ones, probably from the 1770s. In the 1750s the structure had a main elevation with an arrangement of niches and plain brick pilasters but by the 1770s this appears to have been replaced by a rendered face and what appears to have been rounded columns fixed to the wall. It may be that the addition of render was to match the new rendered blind arcade which was also constructed in this period.
- 4.8.2 There is no reason to doubt that the staircase we see today (and prior to the recent conservation works) at least partially survives from the original 1720s structure but the recent works have also revealed much evidence to show the extent to which the staircase has been altered and reformed, probably in several phases, over the last 200 years.
- 4.8.3 Prior to the current project the staircase was clad in several phases of render which was probably originally added at some point around the early or mid 19th century and then subsequently repaired. The removal of this render revealed a decorative face with very fine-jointed brick pilasters and bands which were clearly once visible and which had similarities to both a view from the early 19th century and to views from the 1750s, but was different to views from the 1770s. Evidence strongly suggests that this decorative brickwork was added (or possibly heavily repaired) after at least one of the major fires and possibly even after both of them. This evidence includes the fact that this skin was only a single brick thick and not bonded into the structure behind as would surely have been the case if the face was primary. This resulted in the face being structurally very fragile and it suggests that it must have been added onto an existing structure, possibly without the expectation that it would have a long lifespan. Indeed, it may be that the brickwork was subsequently clad in render (Roman cement) to help hold it together.
- 4.8.4 It is known that after the 1795 fire Cliveden remained as a ruin until the 1820s, although there were several attempts to sell it, and there is the possibility that the fine-jointed brick skin was cheaply added to the stairs as a dressing to improve the terrace's appearance and help with the sale. The sales particulars from the auction of 1818 describes the terrace as being '*recently restored to its original magnificence*' so it could be that this quote at least partially refers to the addition of fine-brick cladding to the staircase. The quote also suggests the possibility that the works were returning the staircase to the form that it historically took (shown in the 1750s views) and before the alterations which can be seen in the 1770s views.
- 4.8.5 A large number of moulded stones have been exposed within the core wall behind the fine-jointed skin which clads the east side of the stairs and it seems safe to assume that these stones came from the ruins of the 17th-century mansion after the 1795 fire, or possibly from the former front of the terrace prior to its reconstruction around the 1760s. These stones, which are detailed and discussed in Appendix D, include fragments of column, frieze, moulded cornices, several fragments of a capital and several pieces of a figure or statue with drapery. Most of these stones were re-sealed up within the arch of the eastern lower landing of the

staircase. A smaller number of particularly interesting stones were retained by the National Trust and are currently stored in the Woodyard Store at Cliveden.

- 4.8.6 There are also numerous areas where the removal of the fine-jointed skin exposed darkened bricks behind and the stark contrast between the pristine red brick facing and blackened bricks behind also supported the belief that the skin was added or heavily repaired after a fire. The inner bricks may have been darkened by an ashy wash resulting from the fire rather than from the heat of the fire itself but there was a definite dark coating observed behind the skin. This would suggest that the staircase suffered considerable damage in the fire, possibly losing much of its previous facing, and such a level of damage appears to be supported by a documentary reference to Cliveden after the 1795 fire which mentions *'the flight of stone steps all fallen to pieces'*. This may refer to an internal staircase within the house but the reference immediately follows a description of approaching the house from the river to the south and the terrace stairs would have been one of the first structures they reached so it seems likely that it does refer to this.
- 4.8.7 The overall nature of the construction of the staircase revealed in the current project was also much more suggestive of an early 19th-century date than one from the early 18th century. This was suggested by the nature of this brickwork, the mortar and the use of cast-iron pins and ties. It is also significant to note however that the construction of the two landings and lower flights is different to each other and they were clearly from different phases. The east flight, with the moulded stones encased behind the facing skin, appeared to be a later rebuilding than the west flight.
- 4.8.8 It is significant to note however that one of the niches on the east side of the stairs has the date 1739 inscribed on a brick and this looks to be in-situ rather than being a reused brick from elsewhere. This would clearly suggest that the front wall of the staircase (at least this part of it) probably does survive from the original (1720s?) construction.
- 4.8.9 The relationship between the 1850 portico and the fine-jointed brick skin is an important issue with regard to the phasing of the staircase but one where the evidence is unclear. Barry's proposal drawing appears to show the staircase walls as being rendered and aesthetically this would seem logical because Barry's mansion was also clad in Roman cement stucco. It would seem unlikely that the stark red pilasters would have remained exposed. However, if the walls were to be rendered as part of Barry's alterations then one would expect the edges of the pilasters to have been roughly hacked away to allow the portico to be inserted. In fact the portico was carefully inserted with minimal impact on the pilasters and this may suggest that the pilasters remained visible for a time after 1850, or even that they were constructed during the 1850s works.
- 4.8.10 It may be more likely however that the staircase walls had already been rendered, possibly in the 1820s works, and therefore care was taken in 1850 not to damage this render. It should also be noted here that an area of yellow stucco has been exposed within the arches behind the staircase (see section 5.3 below) although this also could either date from Barry's 1850 phase or an earlier 19th-century phase (eg 1820s).
- 4.8.11 The table below summaries what we know or believe about the staircase.

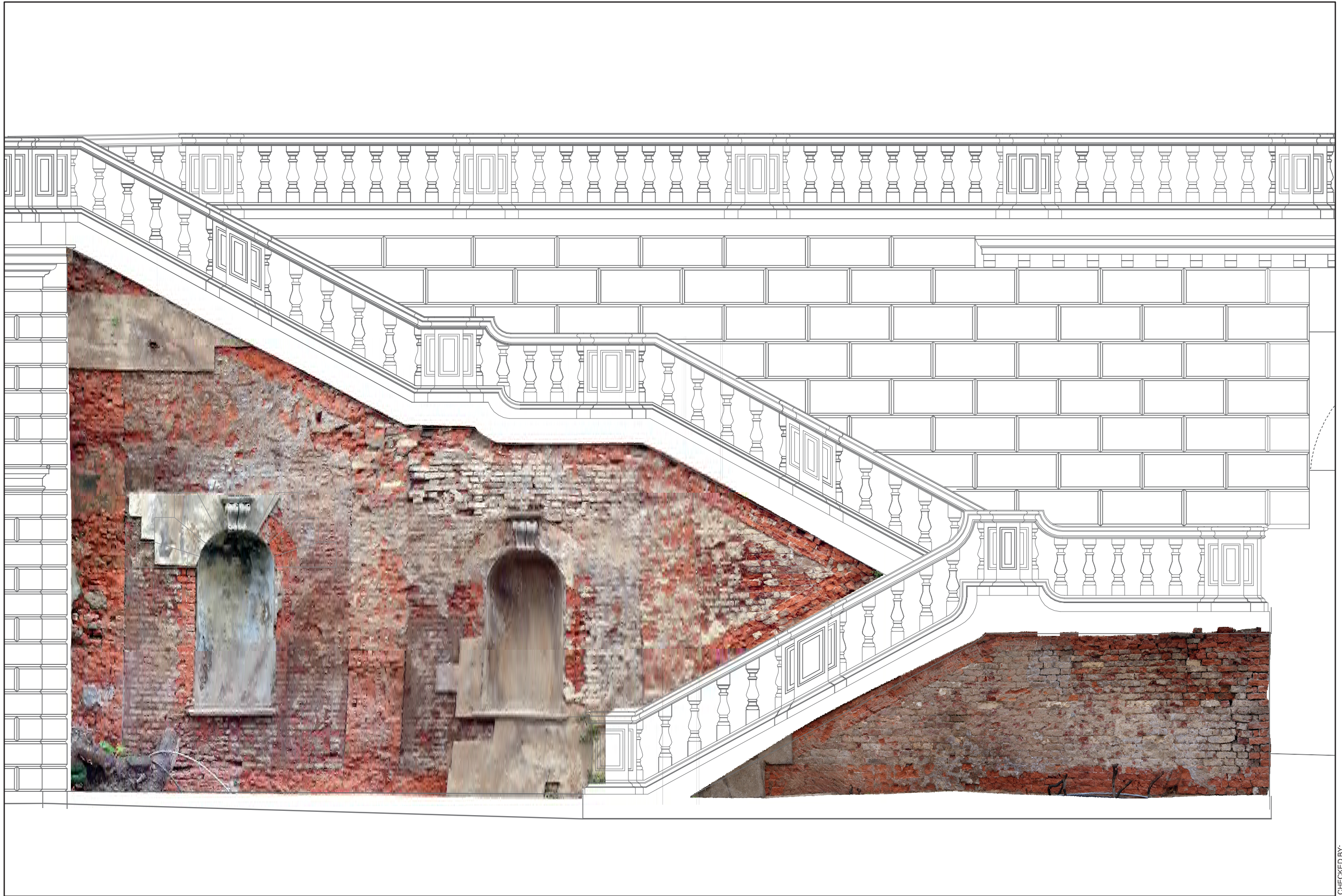
Date	Development of staircase
c.1720	Original staircase constructed with a similar overall form to that which survives today
1739	Date inscribed on jamb of niche

1750s	Views show that at this date the staircase had a simple arrangement of niches and pilasters (probably brick) similar to that recently exposed. Presumably this was the original arrangement
1770s	By this date the walls of the staircase had been rendered and the previous pilasters replaced by a simpler arrangement. Maybe it was refaced/reformed when the blind arcade was built in 1760s.
1795	Fire. An account suggests that the staircase was badly damaged and it may be that much of the previous facing was lost.
c.1805-1815	The staircase is partly reconstructed/restored as part of wider works after the fire. The fine-jointed brick pilasters/bands recently exposed are believed to date from this phase. The restored staircase is shown on a view from this period with pilasters and other features similar to the 1750s views – possibly there was an element of restoration – going back to the previous character.
1820s	The walls of the staircase may have been clad in Stucco (Roman cement) during this period when the new house was built.
1850	Stone portico added by Barry.



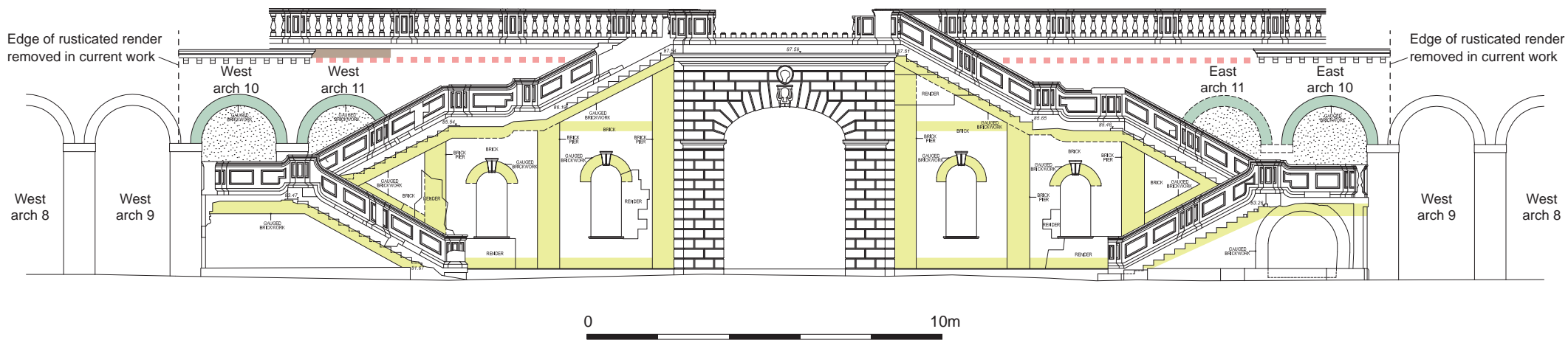
0 2 m
Scale at A3 1:40

Figure A.1: Rectified image of West side of staircase after removal of render



0 2 m
Scale at A3 1:40

Figure A.2: Rectified image of East side of staircase after removal of render



- Fine joined facing brick revealed by removal of render from staircase
- Evidence of former brick brackets revealed by removal of rusticated render
- Blind arches revealed by removal of rusticated render - keystones and string courses truncated
- 19th century stock brickwork added to arches to hold rusticated render
- Truncated section of stone exposed. Possibly former cornice

Figure A.3: Features exposed by removal of render from stairs and rustication from wall behind

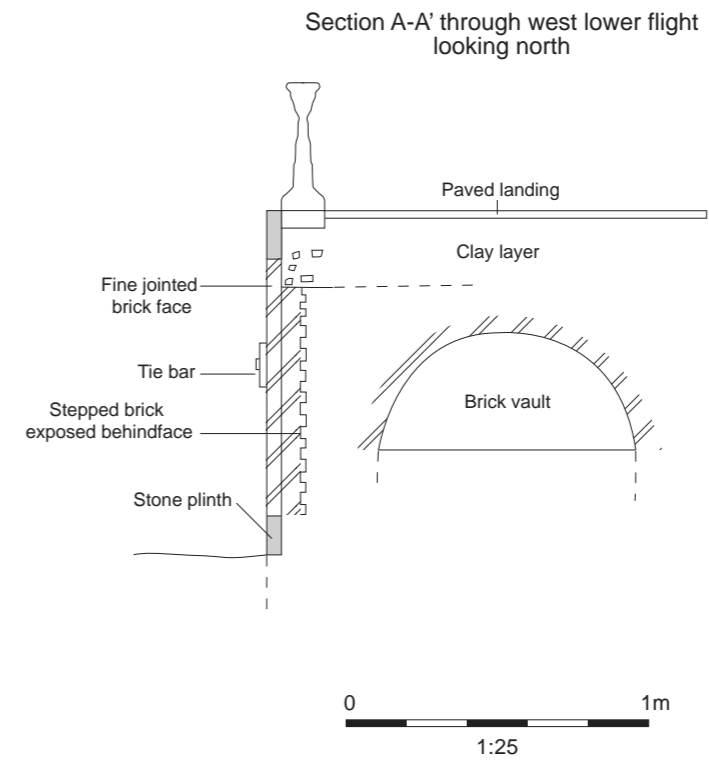
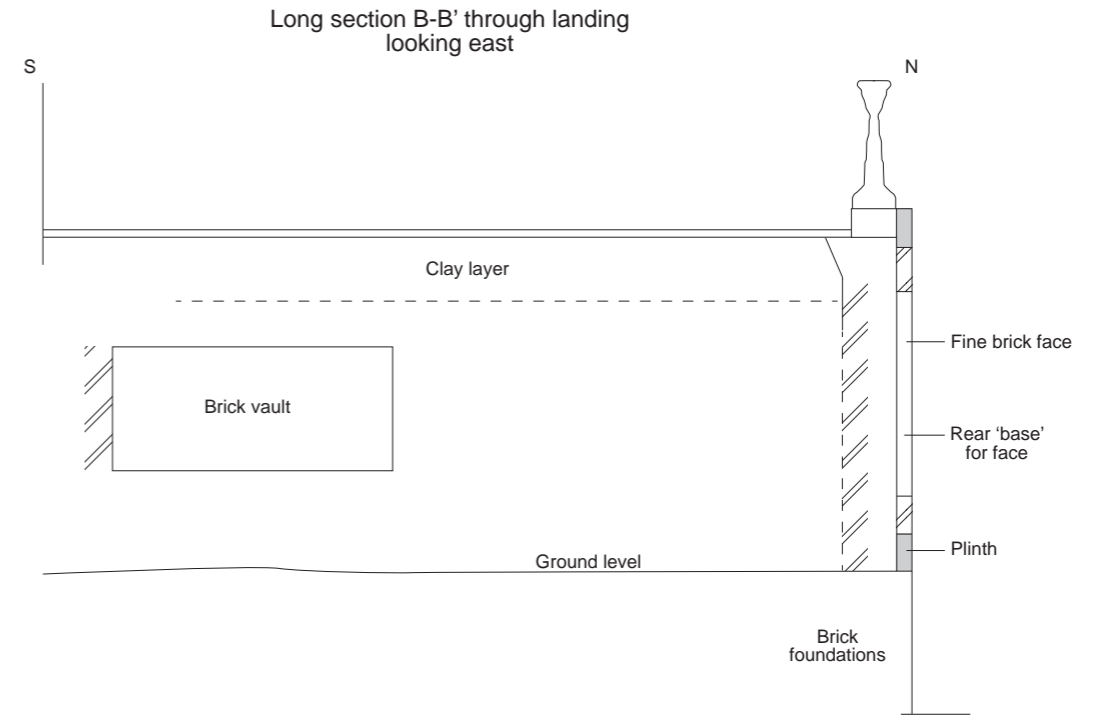
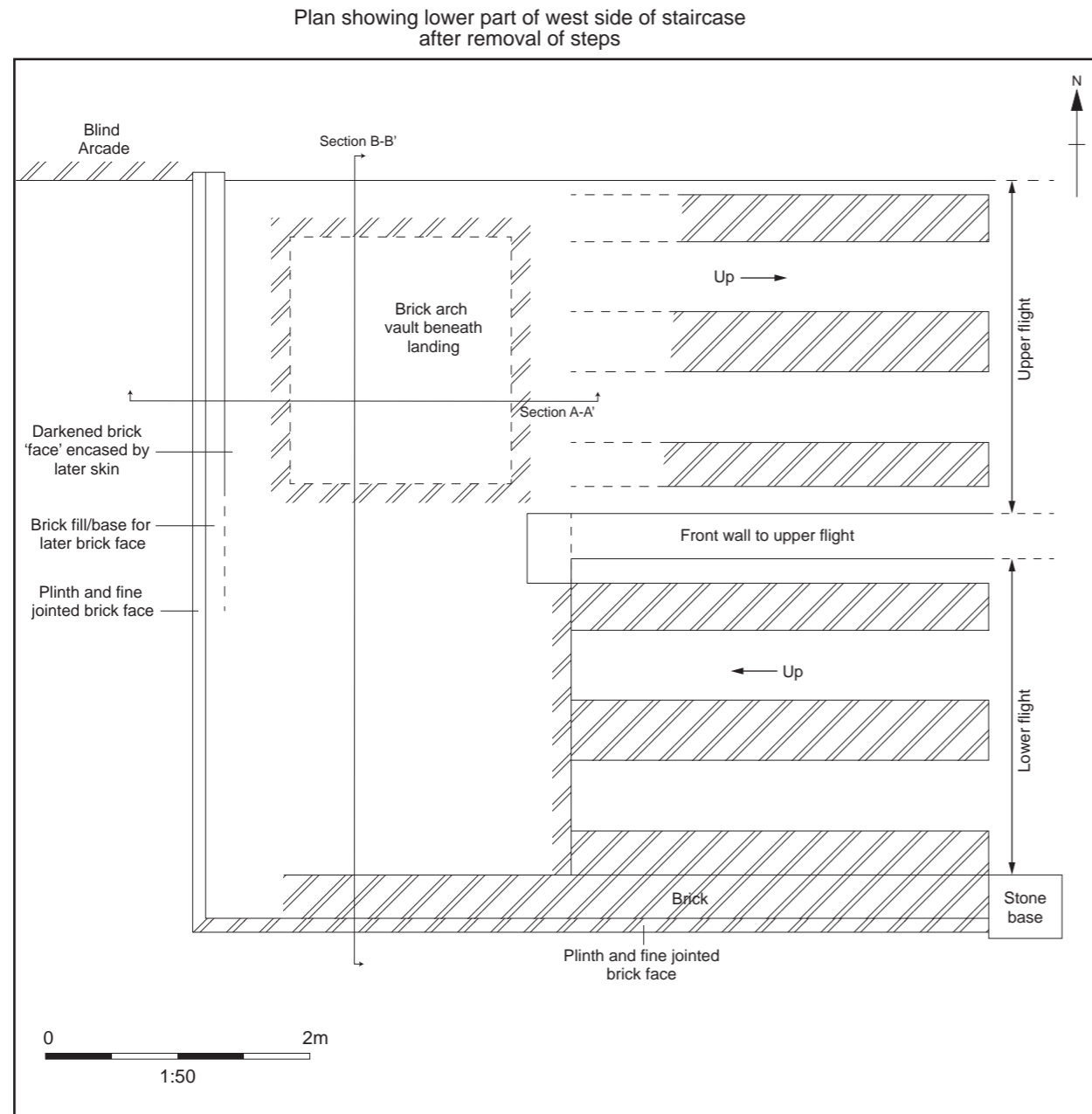


Figure A.4: Details of western lower flight of stairs

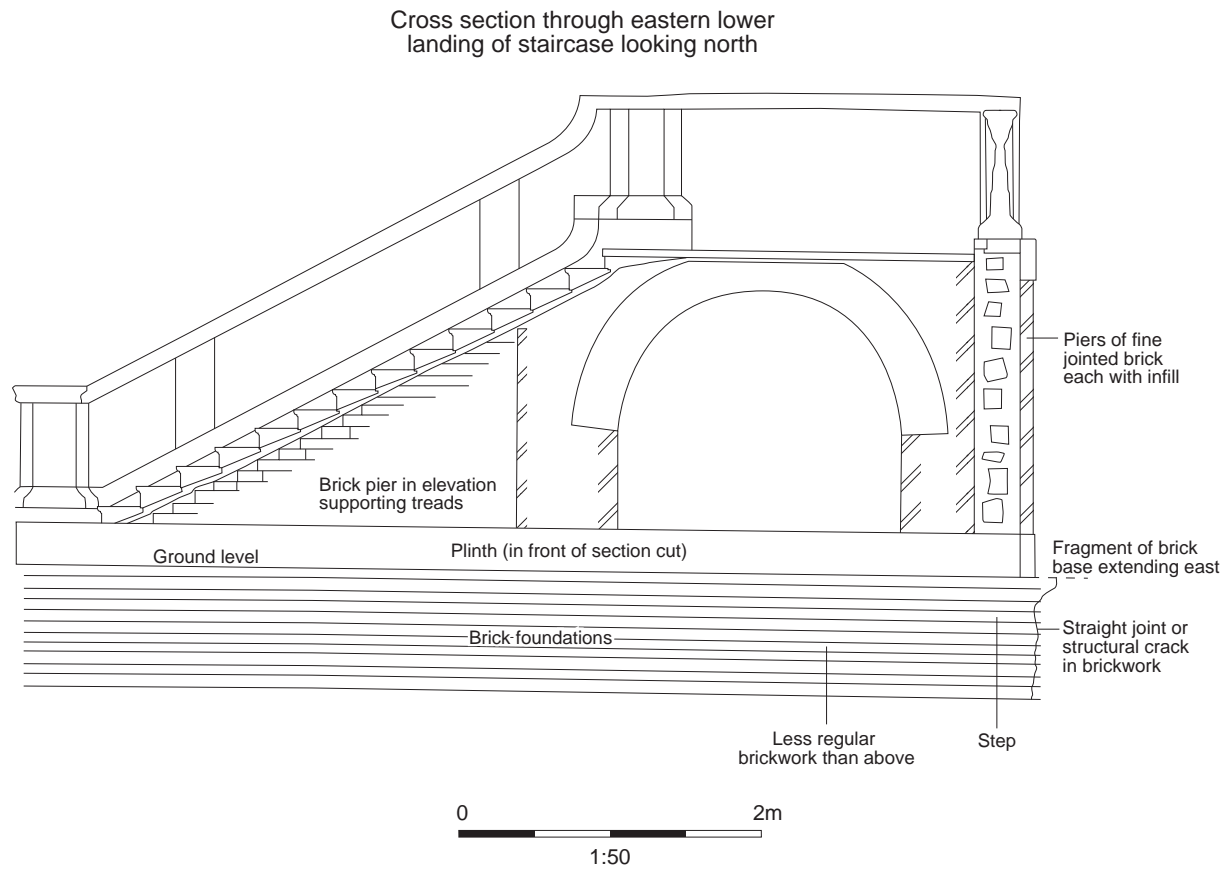
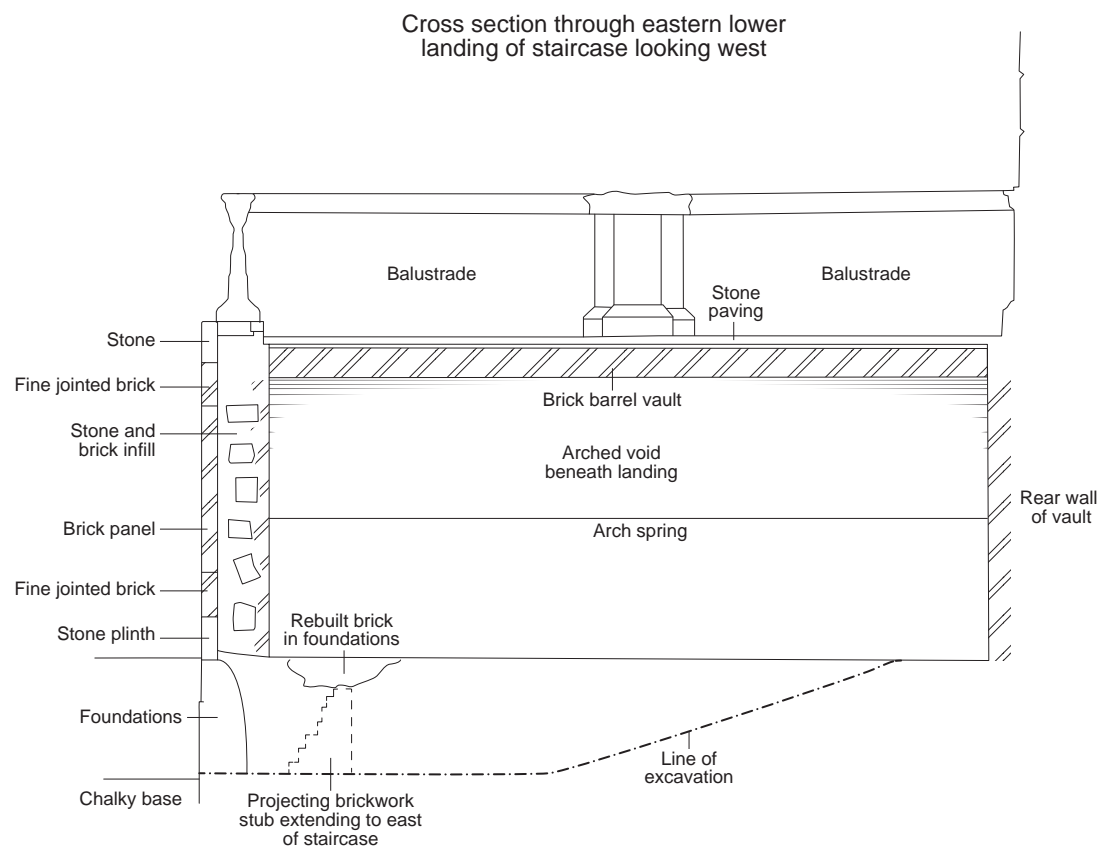


Figure A.5: Details of eastern lower flight of stairs



Plate A.1: Portico and staircase prior to works



Plate A.2: West side of stairs prior to works



Plate A.3: West lower flight prior to start of works



Plate A.4: Niches in west side of stairs



Plate A.5: West return wall in staircase



Plate A.6: Western stairs



Plate A.7: Western lower landing



Plate A.8: Base of eastern stairs



Plate A.9: East side of stairs prior to works



Plate A.10: Niches in eastern side of stairs



Plate A.11: Eastern lower flight



Plate A.12: Eastern lower flight



Plate A.13: East return wall of stairs



Plate A.14: Stairs on east side



Plate A.15: East flight of stairs



Plate A.16: Western face of stairs after removal of render



Plate A.17: Fine brickwork on west side after removal of render



Plate A.18: Fine brickwork on west side after removal of render



Plate A.19: Fine brickwork to western lower flight



Plate A.20: Detail of fine brickwork on west flight



Plate A.21: Detail of fine brickwork on west flight



Plate A.22: West wall after removal of render



Plate A.23: West wall after removal of fine brick skin [A.4.1]



Plate A.24: West lower flight after removal of fine brick skin [A.4.1]



Plate A.25: Detail of west wall [A.4.1 and A.4.2]



Plate A.26: Exposed core of west wall [A.4.1 and A.4.2]



Plate A.27: Stepped brickwork [A.4.2] behind brick in front [A.4.1]



Plate A.28: Lower flight after removal of steps



Plate A.29: Older foundations [A.4.3] beneath west flight of steps



Plate A.30: West lower flight during dismantling [A.4.1 and A.4.2]



Plate A.31: Detail of west lower flight during dismantling [A.4.1 and A.4.2]



Plate A.32: Vault after removal of western lower landing



Plate A.33: Northern end of west lower landing



Plate A.34: West side of stairs during dismantling



Plate A.35: West side of stairs during dismantling



Plate A.36: Upper part of west side of stairs during works



Plate A.37: West side of staircase



Plate A.38: West side of stairs during works



Plate A.39: Clay at top of west side of stairs



Plate A.40: Detail of top of stairs on west side



Plate A.41: Vault beneath western lower landing



Plate A.42: East side of stairs after removal of render and pilasters



Plate A.43: Exposed east face of stairs



Plate A.44: Detail of fine brickwork on east side



Plate A.45: Fine brick face on east lower flight



Plate A.46: Detail of fine brick on east side of stairs



Plate A.47: RW 1739' inscription on brick in eastern niche jamb



Plate A.48: Portico and brick junction on east side



Plate A.49: Eastern stairs during dismantling [A.3.1 & A.3.2]



Plate A.50: Eastern stairs during dismantling [A.3.1 & A.3.2]



Plate A.51: Junction between east side of stairs and blind arcade



Plate A.52: North wall of east side of stairs with blackened core [A.3.1, A.3.2] and pristine face [A.2.1]



Plate A.53: Eastern carcass of stairs [A.3.1]



Plate A.54: Foundations beneath east side of stairs [A.3.3-A.3.5]



Plate A.55: Main foundation beneath east side of stairs [A.3.3]



Plate A.56: Exposed east side of stairs during works



Plate A.57: Exposed eastern lower flight during works



Plate A.58: Cast iron clamp on south side of west lower landing



Plate A.59: Typical iron fixing in western lower flight



Plate A.60: Portico detail



Plate A.61: Portico detail



Plate A.62: Exposed fragment of older cornice behind Portico cladding [A.5.1]



Plate A.63: Detail of exposed fragment of cornice [A.5.1]



Plate A.64: Detail after removal of central pilaster to east side of staircase



Plate A.65: Hidden brickwork exposed by removal of central pilaster to east side of stairs



Plate A.66: Brick exposed by removal of plaster immediately east of portico

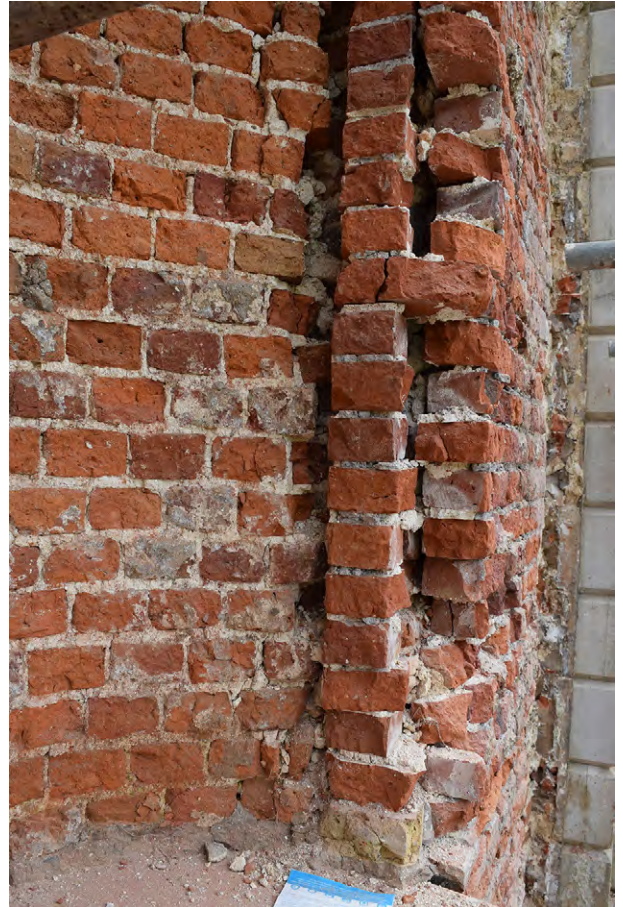


Plate A.67: East jamb of niche to west of portico



Plate A.68: West jamb of niche to west side of portico

5 BLIND ARCHES TO MAIN WINGS OF TERRACE (AREA B)

5.1 Introduction

5.1.1 The face of the main wings of the terrace comprise a series of blind arches (Area B in the current project). There are nine full arches to either side of the staircase, between the stairs and end ferneries as well as further arches, now partially concealed by rusticated render, behind the staircase. The blind arches are a secondary re-facing of the terrace, probably dating from the 1760s or 1770s, and they are believed to have replaced a previous arrangement that incorporated a series of niches forming the front of the structure.

5.2 Historical evidence

5.2.1 The South Terrace was originally constructed between c.1670-1677 by George Villiers, 2nd Duke of Buckingham to form part of a great platform for his proposed mansion at the site. Evidence suggests that the construction of the terrace was either complete or considerably more advanced than that of the house itself when construction works at Cliveden were apparently abandoned towards the end of the 1670s. No drawings survive showing the form of the terrace in the 17th century but a diary entry of John Evelyn from 1679 refers to 'cloisters', apparently in relation to the terrace.

5.2.2 The use of the word cloisters is intriguing and suggests that the terrace could have had a significantly different form to that which it has today. Although this term would normally suggest an open arcade with a covered walkway immediately behind, it may be more likely that the word was simply describing a series of niches in the face of the terrace rather than a covered walkway. Apparent traces of such an arrangement were revealed in 2012 by the opening of two entry holes in the brickwork of the blind arcading (discussed further below) and it is also supported by the elevation of Cliveden included in Colen Campbell's *Vitruvius Britannicus* which clearly shows a series of niches across the terrace (Fig 7). Campbell's drawing is strikingly different to the current form of the terrace in several ways so its reliability as an accurate record has been doubted but the fact that the niches matches the evidence of the trial holes is clearly significant.

5.2.3 There are several mid 18th-century views which provide an indication of the form of the terrace in this period. Two of these appear to date from the 1750s (one known to be from 1759 – Fig 11) and evidence suggests that these pre-date the current blind arcade. The main evidence to support this is the fact that the front of the arcade is shown to have been recessed behind the front walls of the end chambers whereas today the arcade is slightly in front of the fernery wall. Another subtle but potentially significant difference is that on the 1759 view the string course at the arch springs is the same between the arcade and the end chambers whereas on the later views, as well as on the existing structure, this course is slightly higher in the blind arcade than the fernery wall

5.2.4 The 1750s views are inconclusive with regard to whether this arcade was entirely open but they do suggest that it was not blind like the current structure. The views do not show any features behind the arcade front to prove it was open but the various tones used to fill the arches do imply that it was open. The tone used within the arches of the main terrace is identical to that used to the end chambers which are known to have been open.

5.2.5 There are also two slightly later views, one dated from c.1779 (Fig 13) and the other one, by John Donowell (Fig 12) probably from a similar period, and these clearly show that by this time the terrace was faced by a blind arcade. This must be the same structure that faces the terrace today.

- 5.2.6 The 18th-century views each show some banding between the keystones and the balustrade but the height of this section seems to have been slightly shorter than it is today. On the views this band appears to have been articulated by a series of short vertical features or piers and it seems likely that between the balustrade and the keystones there was a stone cornice, possibly similar to that surviving in the ferneries.
- 5.2.7 A proposal view for rebuilding Cliveden after the 1795 fire survives, dated from the early 19th century (sometimes attributed to Nash or Cockerell), and this shows the main blind arches the same as on the 1770s views although the height of the terrace appears to be higher than on previous views in relation to the tops of the arches (similar to that surviving today). It is also interesting that this early 19th-century view shows low shrubs in front of the arcade along its full length between the staircase and the end chambers. This is in contrast to the 1770s views where the blind arcade is fully visible and it suggests that by the early 19th century there may have been a desire to hide the blind arcade behind planting; this remained for the rest of the 19th century.
- 5.2.8 Sir Charles Barry produced two schemes for rebuilding Cliveden after the fire of 1849: one relatively ambitious and the other less so. The less ambitious scheme which is close to the executed design, shows the terrace arches only in outline (apparently blind arches), suggesting no alterations were proposed for this part of the structure while the more ambitious proposal shows the terrace front with a series of niches. This is interesting as it may again suggest that there was an understanding that the terrace had historically be faced with niches.
- 5.2.9 Barry's executed design confirms that the rustication to the main terrace wall behind the staircase post-dates the 1850s phase.
- 5.2.10 There are several views from the later 19th and early 20th century suggesting that throughout this period the terrace was covered with thick climbers and other bushy vegetation (Fig 20). Clearly the low shrubs that were first seen on the early 19th century view were allowed (or encouraged) to grow up and cover the blind arcade confirming that it was not seen as an aspect of the terrace which should be on display. These later 19th-century views clearly show the area of blind arches significantly more covered in vegetation than the rusticated wall behind the staircase and the walls of the ferneries (particularly in the Illustrated Times view from 1866). Clearly the main wall with the blind arches was seen more as a rougher quality structure on which to grow climbers rather than the higher quality facing wall of the ferneries.
- 5.2.11 The rusticated wall behind the staircase is first shown on a view of 1866 and therefore this must have been added between Barry's 1850 drawings and 1866. This work included removing part of the rendered cornice (from early 19th-century phase) and blocking the formerly visible arches. A photograph contained in a Country Life article from 1912 shows brickwork to the blind arches, just visible through thick vegetation.

5.3 Description

5.3.1 GENERAL DESCRIPTION OF ARCADING BETWEEN STAIRCASE AND FERNERIES (Area B.1)

- 5.3.2 The main blind arcade between the staircase and the end ferneries was a relatively simple structure with a uniform appearance. There were nine regular semi-circular arches to each side of the staircase with recessed panels, moulded keystones, stone impost bands and a dentil-bracket cornice (rendered brickwork) immediately beneath the balustrade.
- 5.3.3 In the current report the arches to each side of the blind arcade are numbered consecutively from the outermost ends. So the blind arch adjacent to the West Fernery is numbered West

- Arch 1 and the adjacent one is West Arch 2. Therefore the arch adjacent to the staircase is West Arch 9 and the two partially visible arches behind the staircase are West Arch 10 and 11.
- 5.3.4 The arches and arcade piers were constructed from relatively plain (even crude in places) brickwork and the naked character of these sections of the wall was somewhat at odds with the more decorative face of the ferneries and the magnificence of the mansion. Although the brickwork was generally of reasonable quality its character gave the impression of having been erected relatively quickly and cheaply rather than with the intention of making a grand statement. Indeed there were numerous areas of patching and heavy pointing and it was almost certainly a lot plainer than the structure originally constructed by the notoriously extravagant Duke of Buckingham.
- 5.3.5 The most consistent area of brickwork in the elevation was formed by the plain band, 11 courses tall, between the cornice and the keystones of the arches. This band projected very slightly beyond the face of the brickwork below and there was a thick joint at the base of this band of brick.
- 5.3.6 There were fewer areas of repair in this band and it may be significant that prior to the current works there was less sprouting vegetation from this upper area of brickwork. The brickwork in the 11-course band and that below is believed to probably be contemporary with each other but the differences mentioned above suggests that they may have had a different treatment or facing. It could be that the lower brickwork was rendered (particularly suggested by the slight projection of the upper brickwork).
- 5.3.7 Traces of limewash were found on the brickwork of the blind arcade and although scientific analysis was undertaken of some of these this showed that they used common pigments used widely since classical times so it was not of use in providing dating evidence (Oestreicher, 2014).
- 5.3.8 It is also useful to note that the bricks in the arcading were larger than those in the two ferneries which are of late 17th or very early 18th century date. Ten courses of the brickwork in the blind arcading was 73 cm tall while 10 courses of brick in the ferneries measured c.68 cm tall (although as discussed below the bricks in each fernery appeared slightly different to each other).
- 5.3.9 The historic views and photographs from the later 19th and 20th century show these areas obscured by climbing plants and although these climbers have now been removed they have probably caused a level of damage or at least discolouration to the fabric. The brickwork had a thick repointing used consistently over almost the entire structure and unlike in the ferneries there were no patches of fine-quality facing brick or good pointing to suggest this is an old wall which has just been repaired or repointed in areas. It appears that the blocking brickwork within the arches is contemporary with the surrounding arcade (keyed in) and that the main arcade is essentially single phase. The main exception to this are the arches second in from each fernery; these are the locations of tanks and they have been infilled with a later brick blocking (discussed further in the relevant section).
- 5.3.10 The discoloured and rough character of the arcade brickwork suggests that it was formerly rendered and this is supported by the evidence of late 18th and early 19th-century views. As referred to above there are also traces of limewash to the arcade.
- 5.3.11 **Cornice:** As mentioned above at the top of the blind arcade there is a cornice beneath the balustrade, formed from brickwork with render mouldings and simple brackets immediately beneath. The brackets were also seen to be formed from render applied to projecting bricks and the face between these brackets is rendered. The scaffolding erected in the current project has allowed a closer examination of this area and simple horizontal and vertical

scoured marks have been observed in this render immediately below the cornice, and between the brackets, to give the superficial appearance of ashlar. The marks also continued on the soffit of the cornice. It was noticeable that these scoured lines did not neatly align with the brick rendered corbels, possibly to give a more natural ashlar effect, and they were not found between every corbel. Twenty four vertical marks were recorded in the western half of the terrace and there appeared to be scour marks in different phases of the rendered face. Some of the render was contemporary with the brick brackets but there also appeared to be patches of older render/stucco (1850s?). The older render survived best towards the west end and it was noticeable here that the render appeared to have been painted a bath stone colour, with traces of white paint in the 'jointing' grooves (*Pl. B17, B19*). Presumably they were painted white to enhance the effect of ashlar. None of this appeared to pre date the 19th century.

5.3.12 Extensive repairs were undertaken to the cornice during the project and this showed that the substructure of the cornice, behind the rendered mouldings, was largely of stone (*Pl. B18*) but with various patches of brick repair. The brick repairs appeared 20th century in date and there was no clear pattern to these patches. It was also noticeable during the closer examination from the scaffolding that the keystones above the arches were formed from various types of stones and various dates. Some of these appeared to be reused stones.

5.3.13 **Balusters:** OA was not commissioned to undertake an exhaustive survey of the balusters but it was interesting to briefly note the number of different baluster types in the terrace balustrade and on the staircase. There appeared to be at least seven slightly different baluster types which presumably have largely originated from the various phases of repair to the terrace although some of these different types were similar and may have been from different masons. Some of the balusters were very thin and almost cylindrical while others were much more squat shaped. Most of the balusters on the staircase and above the portico were relatively modern while there was a higher number of older balusters in the face of the terrace.

5.3.14 **Minor repairs to brick face:** Various brick repairs/replacement works were also undertaken to the face of the blind arcade and although there was not a formal watching brief undertaken for this observations were briefly made during the works while making site visits for other purposes. The observations made corroborated other evidence to suggest that the current face of the blind arcade is a single skin added. The blind arcade has header bricks but at least in the limited areas observed it appeared that these were truncated half bricks to give the appearance of Flemish Bond. Where the brickwork behind was visible it was rough and certainly not a fine earlier face (*Pl. B20*). It should be noted that the brickwork behind was not rendered so this arrangement was different to the arcading behind the staircase (discussed further below).

5.3.15 ARCADING BEHIND THE STAIRCASE (Area B.2)

5.3.16 Behind the staircase the main terrace front was covered in rusticated render known from historic views to have been added at some point between 1850 and 1866 and this has been largely removed during the current phase of works. The rustication to this render was clearly intended to give it a superficially similar appearance to Barry's c.1850 portico which is formed from stone cladding. It is significant to note that a paint sample was taken in this area by Lisa Oestreicher and this revealed a distinct blackening to the outer face of the bricks which could have been from one of the two fires at the mansion. This was beneath the render and limewash coatings.

5.3.17 The removal of this render exposed four further arches (two to either side of the central line) to confirm that the blind arcading continued behind the stairs prior to the addition of the

render (see Fig A3 and *Pl. B10-15*). In the current study these are numbered East Arches 10 and 11 and West Arches 10 and 11. These arches were infilled with single skin, mid 19th-century stock brick, presumably also dating from sometime between 1850 and 1866 before being rendered over. A small hole (c.30 cm long by c.12 cm wide) was made by removing some of the bricks from the blocking of the innermost visible arch on the east side (East Arch 11) and this exposed the recessed stucco (Roman cement render) face of the blind arch which would have been visible prior to the addition of the rusticated render (*Pl. B15-16*). This hidden recessed face was 19 cm behind the front of the later brick face and the hard, light brown stucco had scour marks to give the superficial appearance of ashlar. This stucco was a yellow colour and where it was broken the core of this stucco was a chocolate brown colour, with white inclusions. This corresponds with the early 19th century view of the unexecuted proposal for the house which may show the terrace as it existed at that date.

- 5.3.18 Each of the four blocked arches exposed behind the staircase had the truncated remnants of a former projecting keystone [*Feature B.2.1*] which was clearly cut off to allow for the render to be applied over this area. Similarly the stone impost band was also found to have been cut back between the arches at the point where the render covering was added [*Feature B.2.2*]. Also, the uppermost 11 courses of brickwork which formed a slightly projecting band across the length of the terrace façade had also been cut back slightly to allow for the render. Another minor feature revealed by the removal of the render were grooves cut in the brick face to allow for the deep V-profile rustication 'joints' [*Feature B.2.3*].
- 5.3.19 The bracketed cornice (rendered brick corbels) which extends along the main lengths of the blind arcade continues from each side for c.3.5 m into the rusticated area behind the staircase. These sections of the cornice terminate at points roughly aligned with the two lower landings of the staircase. However, the removal of the rusticated render has shown that the cornice formerly extended further towards the centre point over the two exposed blocked arches [*Feature B.2.4*]. The truncated stumps of regularly spaced bricks survive which would formerly have formed the brackets. In addition immediately to the east of the surviving section of cornice to the west of centre there was a set of three truncated horizontal stones (2 m long) which it would appear survived from part of a former cornice [*Feature B.2.5*]. They aligned with the height of the surviving cornice but the stones were only found in this 2 m long area; to the east of this the wall was of brick and the corresponding point on the east side of the terrace was also of brick.
- 5.3.20 Another curious feature exposed by the removal of the rusticated render were large, distinct patches of concrete beneath the cornice and at the outermost parts covered by render (ie above Blind Arches East 9 & 10 and West 9 & 10). These aligned with the slightly projecting uppermost bands of brickwork to the blind arcade. These patches (c.0.50 m²) appeared to be solid blocks of concrete but it was not possible to examine them closely.
- 5.3.21 As discussed above in the section on the staircase there was evidence to show that the blind arcading had been cut back slightly at the point where the west wall of the staircase met the blind arcade.
- 5.3.22 **INVESTIGATIONS UNDERTAKEN BY NATIONAL TRUST (Area B.3)**
- 5.3.23 In 2012, prior to the start of the current investigation by OA trial holes were made in the brick face of East Arch 7 and East Arch 8 and it would make sense to summarise these works here. In East Arch 7 a 30 cm wide hole was made in the lowest nine courses of the brick while in East Arch 8 a 55 cm wide hole was made in the lowest seven courses. Each of these holes allowed some limited access into a void behind the arch of the blind arcade and it was possible to see that behind each arch there was a curved (roughly semi-circular) rear wall formed of header bond brick [*Feature B.3.1*. See Plate B21]. These were in the form of niches and although each

void was partially blocked it was possible to estimate that they would have been 2.9 m wide and c.1.3 m deep (N-S).

- 5.3.24 The bricks forming the niche wall measured 10.5 cm by 6.5 cm and the joints had struck pointing. The brickwork of these niches was abutted by the rear face of the blind arcade so it was clearly earlier than the arcade. The blind arcade brick wall was c.48 cm wide in the arches and c.68 cm wide in the arcade piers (although this could not be investigated closely). It was also not possible to investigate the top of the niches closely but they seemed to be half-domed and the highest point was c.90 cm above the base of the keystone to the blind arch.
- 5.3.25 Brick buttresses could also be seen within the void coming off the rear face of the blind arcade wall at 90 degrees to butt up to the niches, suggesting that the blind arcade wall is likely to have been added to strengthen and resist the outward thrust imposed against the original retaining wall formed by the niches. Hints of this instability were also given by substantial cracks noted in the two observed niches.

5.4 Summary and conclusion

- 5.4.1 Although the blind arcade is one of the key visual elements of the terrace, providing a dominant feature in the extensive views of Cliveden from the south, it is actually a relatively plain part of the structure and it is perhaps surprisingly undecorated.
- 5.4.2 The main body of the terrace is believed to survive from the original 1670s mansion but the character of the brickwork in the blind arcade is much more suggestive of a later 18th-century date rather than one from the 1670s. This is partly based on the size of the bricks but also on its plain construction and detailing, relative to the ferneries. This plain character would suggest a secondary alteration rather than it having been built by the Duke of Buckingham who was known for the extravagance of his works. The brickwork in both the arcading and the arch 'fill' appears contemporary with each other and the whole wall seems to be a single secondary refacing rather than it being a restored primary part of the construction.
- 5.4.3 This supposition is apparently confirmed by the evidence of trial holes previously opened in two of the blind arches which showed a set of niches behind the arches and with a separate construction to the current terrace face. The existence of the niches broadly corresponds with Colen Campbell's drawings of Cliveden included in *Vitruvius Britannicus* from 1717. These drawings may have included some elements of proposals rather than being an entirely accurate record but the clear depiction of niches, apparently similar to those seen in the trial holes, is a very significant piece of evidence.
- 5.4.4 The belief that the blind arcading is secondary is also supported by other historical evidence, particularly a number of views from the second half of the 18th century. A view from 1759 clearly shows the terrace with the main arcade face recessed behind the front of the ferneries. Therefore at this date the front wall of the terrace must have been at least 30-40 cm north from the current front wall, whereas a view from c.1779 shows that by this date there was a new blind arcade which was aligned with (or slightly in front of) the fernery elevation. It is logical to assume that this blind arcade constructed between 1759 and c.1779 is the same one that survives today. The most likely reason for the refacing is that the terrace was encountering major structural issues and other evidence of this has been noted in the current project in the form of cracks within the Sounding Chambers, within the niches partially exposed behind the blind arcade (Feature B.3.1) and within brickwork exposed on top of the terrace.
- 5.4.5 The arcading probably originally had a plain render similar to that which covers the outer face of the staircase but in the later 19th and early 20th century it was covered with climbing plants.

A photograph in an article of Country Life from 1912 suggests that by this date the bare brickwork was at least partly visible.



Plate B.1: Blind arcade immediately west of staircase



Plate B.2: Blind arcade immediately east of staircase



Plate B.3: Eastern end of blind arcade and fernery front



Plate B.4: General view



Plate B.5: Western blind arcade



Plate B.6: General view of east blind arcade



Plate B.7: Rustication behind east side of stairs



Plate B.8: Rustication behind west side of stairs



Plate B.9: Upper part of eastern rustication



Plate B.10: Arch exposed behind rustication on east side



Plate B.11: Arch exposed behind rustication on west side



Plate B.12: Area on west side of stairs where rustication removed



Plate B.13: Areas on west side where rustication removed (note B.2.3, B.2.1)



Plate B.14: General view of west side during removal of rustication



Plate B.15: Arch in east side after rustication removal



Plate B.16: Patch of removed brick in arch



Plate B.17: Detail of cornice with ashlar grooves between brackets



Plate B.18: Detail of cornice



Plate B.19: Detail of exposed rendered brick bracket in cornice



Plate B.20: Isolated bricks removed from blind arcade (Arch 9)



Plate B.21: Hidden brickwork from former niche behind later blind arcade exposed by NT in 2012

6 FERNERIES AND FERNERY WATER TANKS (AREA C)

6.1 Introduction

- 6.1.1 At each end of the terrace there is a vaulted chamber, known as the East and West Ferneries (Area C in the current report's numbering). These are believed to be early parts of the terrace, either forming part of the Duke of Buckingham's 1670s mansion or possibly part of an early 18th-century alteration. In addition their internal structure was then substantially rebuilt in the 19th century (probably 1840s) when the chambers were converted to orangeries. Adjacent to each of the ferneries there are also a further pair of chambers within the terrace which house large water tanks. These were formerly part of the end chambers when they were orangeries in the 19th century and therefore in the current study they have been included in the same chapter as the ferneries. There is however a separate section covering the two barrel vaulted chambers which are adjacent to the fernery tanks.
- 6.1.2 The current project has seen relatively modest intrusive work within the ferneries and fernery water tanks. The gates and ironwork has been conserved and some localised replacement of bricks has been undertaken in each of the main chambers. Similarly modest repairs or works have also been undertaken within the water tanks including the replacement of access ladders to hatches in the terrace surface. Some excavation has been undertaken in the floor of the ferneries and water tanks related to improving the drainage.
- 6.1.3 Recording of the ferneries and tanks has been undertaken, particularly targeted on the intrusive works but also utilising the opportunity to examine the tanks which are generally inaccessible due to issues of bat protection. Some graffiti and other inscribed marks have also been recorded within each of the ferneries.

6.2 Historical evidence

- 6.2.1 The earliest documentary evidence which provides any clues relating to the end chambers dates from the first quarter of the 18th century. As detailed elsewhere valuable drawings (plan and elevation) of Cliveden are included in Colen Campbell's *Vitruvius Britannicus*, published in 1717 and although there may be elements of these drawings which were merely proposals or unexecuted schemes it is believed that the drawings are probably a broadly accurate record of the structure in the early 18th century (Fig 6-8). The drawings clearly show the South Terrace as a long arcade, apparently with a series of niches facing south and with staircases at each end incorporating semi-circular projections to the south. The plan labels the terrace as being 433 ft long and when this distance is used to geo-rectify (or scale) Campbell's plan it can be seen that the staircase projections (if they were ever actually built) would have been on the current footprint of the ferneries (Fig 8).
- 6.2.2 There are several other plans from this general period including one by Claude Desgot dated 1713 which shows long flights of stairs apparently up to either end of the terrace. Similarly to the Colen Campbell plan it is uncertain whether these staircases were ever built. There is also another plan (Cliveden Album Page 16) thought to be from between 1713 and 1723 which shows end chambers with three openings to the front similar to those which survive today. It is assumed that this is an accurate representation of either what was existing or what was being constructed at this time.
- 6.2.3 There are also several views from the 1750s-1770s which clearly show the rusticated front of the two ferneries with three arched openings beneath the balustrade and they each include valuable pieces of information relating to the historic form of the ferneries.

- 6.2.4 An interesting detail of a view from 1759 is the fact that the front (south) face of the ferneries is clearly shown slightly in front of the adjacent front wall of the main terrace whereas today the blind arcade of the terrace is slightly in front. As detailed elsewhere this is believed to relate to the refacing of the terrace after 1759 and it supports the belief that the front walls of the ferneries are older, possibly surviving from the later 17th-century mansion but also possibly relating to an early 18th-century phase of alterations when the central staircase was added.
- 6.2.5 Another view by John Donowell, possibly from the 1770s (Fig 12) and apparently after the refronting of the blind arcade is of interest in relation to the ferneries as it shows approximately four steps up to what must have been some form of a raised floor within the end chambers. Today the floor inside the ferneries is at a similar level to the external ground. Another view from c.1779 (Fig 13) also clearly shows the steps up to the floor within each fernery.
- 6.2.6 A painting by Hendrik de Cort dated c.1798 (Fig 15) showing the ruins of Cliveden after the 1795 fire is of relevance to the ferneries as it clearly shows the north side of the West Fernery as a tall, apparently featureless brick wall and that the ground immediately to the north (where the West Lawn currently is) was significantly lower than the height of the terrace.
- 6.2.7 There is a useful early 19th-century view of Cliveden, detailing proposals for the house possibly by John Nash. These proposals for the house were not undertaken but it is thought that the view is an accurate representation of the terrace and also that Nash was not proposing significant alterations to this structure. The view again suggests the form of the end chambers had not changed significantly by this date and the steps up to each chamber are again indicated.
- 6.2.8 The Taplow Parish map of 1838 also once again shows the short sets of steps outside the two chambers so they must have still had the raised floor levels shown on previous views.
- 6.2.9 We know from a travel book dated 1847 and from an inventory of 1849 that by the mid 19th century the end chambers were used as orangeries and that they were illuminated by up-standing roof lights that projected above the terrace. It is assumed that between the 1838 map and 1847 the chambers were substantially overhauled to convert them to orangeries and that this included the removal of the external steps and the insertion of the cast-iron columns that currently support the vaulting above.
- 6.2.10 Barry's proposal elevation of 1850 for rebuilding the house shows the end chambers without external steps and an article in the *Gardener's Chronicle* confirms that in 1853, after Barry's remodelling the chambers remained as orangeries with the projecting skylights (or '*lanterns*') above, which helped to ventilate the chambers. The article also refers to the chambers having upright sashes to their front.
- 6.2.11 An interesting aspect of Barry's proposal plan is that it supports the evidence of the c.1798 painting referred to above in suggesting that unlike today the west end of the terrace was set above the height of the surrounding ground on three sides (S, W, N) and that there was a balustrade (or wall) along the north side of the terrace above each fernery. Such an arrangement appears to be depicted on the ground floor plan included in the *Country Life* article dated 7 December 1912 which itself appears to be based on Barry's proposal drawing.
- 6.2.12 A view from the *Illustrated Times* of 1866 also confirms that the external steps had been removed and it strongly appears to show the central arch of the West Fernery as being wider than the flanking ones, similarly to today. In contrast one of Barry's proposal elevations (the more ambitious one) shows the three arches of each fernery as being the same width. This suggests that the widening of the central arch probably dates to between 1850 and 1866

although it could be that Barry's ambitious proposal was to reconstruct the whole elevation and the widening could have already been undertaken.

- 6.2.13 One possible date for the widening of the central arch (and perhaps other related works) is 1858 as there is a reference from this date to repairs undertaken by Henry Clutton to the orangeries at Cliveden (see *Architectural History* 26, 1983, page 102). It is assumed that these were the chambers which form the focus of the current chapter rather than other orangeries at Cliveden. Clutton is known to have undertaken a series of works at Cliveden in this period for the Duke of Sutherland but no other details of the 1858 repairs are given in the article.
- 6.2.14 The first edition Ordnance Survey map of 1876 (Fig 19) confirms that by this date the area between the west end of the terrace and the 'Cockerell' Pavilion had been raised and this is of relevance to the West Fernery because it clearly means that any openings that had been located in this wall would have been blocked.
- 6.2.15 In 1895, two years after the Astor family acquired Cliveden, the lanterns/skylights are believed to have been removed and the use of the chambers changed from orangeries to ferneries. This is likely to have been contemporary with the insertion of the water tanks into the inner part of each fernery (discussed further below). The belief that these works occurred in 1895 is based on a large set of ornamental gates which are known to have been installed in the entrance to the Sounding Chamber in this year and which closely match grilles within the fernery openings. Presumably these were inserted when the orangeries were converted to ferneries.
- 6.2.16 A photograph from 1905 (see Hitchmough) and a *Country Life* article on Cliveden from 1912 show that sometime between these dates the gravel surface on top of the terrace was replaced by stone paving.

6.3 Description

- 6.3.1 In the current project the West Fernery is numbered C.1, the East Fernery is numbered C.2, the West Fernery Water Tank is C.3 and the East Fernery Water Tank is C.4.

6.3.2 EXTERNAL DESCRIPTION

- 6.3.3 The two ferneries were a matching pair and they had a very similar internal and external form to each other. The exterior of each fernery was largely formed from good quality facing brick (albeit with numerous minor repairs) laid in a rusticated form and with stonework to the keystones, impost bands, entablature and plinth. The brickwork had penny-roll pointing and it had a higher quality than the rougher and plainer brickwork in the adjacent blind arches. The two sections of brickwork were clearly from different phases, with the older fernery bricks being smaller (10 courses = 68 cm) than that forming the blind arches (10 courses = 73 cm), and they were clearly not keyed together. As discussed elsewhere it is believed that the main blind arcading was a secondary re-facing slightly in front of the older terrace front and therefore the face of the ferneries would historically have projected slightly in front of the line of the terrace (as shown on the 1759 view).
- 6.3.4 Paint samples have been taken from the front elevations of the two ferneries and each has shown that the structures were formerly covered in several layers of limewash.
- 6.3.5 The south face of each fernery incorporated three arched openings, the central of which was a doorway, and each of which included ornamental iron gates or fixed grilles believed to date from 1895 when it is thought that the orangeries were converted to ferneries. The sills of the flanking windows almost certainly represent the former higher floor height within the

chambers before their conversion to orangeries in c.1840 and before the removal of the external steps which are shown on historic views.

- 6.3.6 The lower part of the fernery walls (below the top of the plinth) would formerly have been adjoined by the short flights of steps and prior to the current project these areas were largely obscured by banks of earth presumably deliberately set here to hide the rougher face behind from where the steps were removed. Prior to the current project the one low area without this banking was the western part of the West Fernery's south facing wall; this section of wall was rendered. Some fragmentary evidence survived from the former steps to the front of the West Fernery. There were truncated footings visible along a c.3 m long section immediately to the south of the West Fernery [*Feature C.1.1*] and also a slight imprint against the south face of the wall suggestive of steps. Evidence of buried features immediately in front of the West Fernery (base of former steps?) is discussed in more detail in section 10 (Area G).
- 6.3.7 Much of the earth banking which obscured the base of the East Fernery's south wall was cleared during the final phase of landscaping works in current project and this also revealed some apparent evidence of the former steps (Feature C.2.6). This evidence included three ashlar blocks built into the southern face of the fernery, towards the western side, and beneath the ashlar plinth (Pl. C47-49). These three blocks formed a stepped pattern, with rougher brickwork immediately beneath, and there was evidence to suggest that they would have been abutted by a set of stone steps projecting to the south. The imprint from the former upper step was visible against the ashlar block together with a small plug and apparently a shallow rebate for a riser.
- 6.3.8 A brick foundation projected southwards from the face of the fernery at the point where the putative former steps would have reached the ground (Pl. C48). This was formed from handmade red bricks and presumably it formed the base supporting the lowest step but only a small part of this was exposed by the excavations. A 35 cm tall section of the structure was exposed but the bottom was not reached. The east side had a rough face but the southern and western edges were not reached. The bricks which formed the structure had a very light beige mortar and their character was suggestive of a 17th or 18th century date.
- 6.3.9 The brickwork in the fernery wall beneath the line of the former steps and to the east of the surviving footing was rough in character but it was not truncated and did not suggest that there was formerly a solid brick mass beneath the former steps. At a point close to the west jamb of the western window in the fernery wall there was a northward return in the old brickwork forming a c.10 cm deep recess roughly beneath the window. This recess had then been infilled with a single skin of later brickwork which appears to have been added to form a single flush face for the Roman cement render (Pl. C49, C51). Much of this single skin of brick collapsed during the recent work to expose the 10 cm recess behind. Presumably this infill 'skin' was added in the c.1840s when the steps were removed and the chambers converted to orangeries.
- 6.3.10 The evidence revealed by the removal of the bank to the east of the doorway was similar to that in the west half but it remained more obscured by Roman cement render (Pl. C50). Three ashlar blocks were again visible in the wall of the fernery which were laid in a stepped profile suggestive of there having been adjoining steps, and with rougher (non-facing) brick beneath.
- 6.3.11 The ferneries' brickwork incorporated rustication to both the main wall and the arch voussoirs but it was apparent that the central arch in each fernery had been widened, shown by the fact that the underside of the central arch has been reformed (rendered) and also by evidence in the brick rustication in the face of the piers either side of the central arch. As detailed above it is known that this was undertaken prior to 1866. It is apparent that each pier originally had

a central rustication groove or slot to alternating courses but when the arch was widened this was no longer central so it was infilled.

- 6.3.12 At the centre of each arch was a large keystone and above this there was a stone entablature and bracketed cornice topped by the balustrade. The brickwork in the western pier of the East Fernery wall had been repointed or rebuilt and this presumably related to this bay accommodating the water tanks.
- 6.3.13 Towards the outer ends of the south facing walls of each fernery there was an anchor plate from a north-to-south tie bar (*Pl. C25*) just below the entablature, and these had been crudely hidden by a covering of render [*Feature C.1.2*]. These were partly exposed during the recent repair works.
- 6.3.14 The west wall of the West Fernery was clad in a hard stucco render which had a rustication detailing that matches that in the brickwork of the south elevation. There was a single arched window to this elevation and above this there were two large metal tie-bars [*Feature C.1.3*] with the plates partly covered by the render. Minor repairs had been undertaken in the current project around these tie-bars plates and this has confirmed that the main wall is formed from brickwork. Very little of this was exposed so it was not possible to gain a good impression of its date or character.
- 6.3.15 The render to the end of the fernery is different (apparently more recent) to the render which covers the northern continuation of this retaining wall extending towards the terrace pavilion.
- 6.3.16 A piece of evidence which was noted in the recent recording works is an apparent change in the type of stone used in the fillet beneath the balustrade in the terrace's west end wall [*Feature C.1.4*]. This change aligned with the north edge of the West Fernery and supports other evidence which suggests that the two sections to each side are of a different date. This supports much other evidence which shows that each end of the terrace was formerly raised and balustraded on three sides (discussed above). It was only later that the area north of the west end of the terrace was raised to the same level as the terrace itself. This may have occurred when the Terrace Pavilion was constructed.
- 6.3.17 Various features in the north walls of each fernery have been exposed in the current project during trenching works but these are described in a separate section of the current report (see section 9 on Area F).

6.3.18 MAIN FERNERIES INTERNAL DESCRIPTION

6.3.19 Overall description

- 6.3.20 The Interior of each fernery has a rectangular plan and would previously have been a larger space together with the adjacent fernery tanks. The overall plan dimensions of each fernery are 10.8 m x 6 m (including the fernery tanks) and the internal ceiling structure of each comprises five brick barrel vaults (N-S) with each one supported by the lower flanges of a series of iron I-joists. The joists are then supported by a mid-spaced cast-iron column and by slightly projecting piers and stone corbels in the north wall.
- 6.3.21 The brickwork to the three main walls within each fernery is suggestive of an earlier 19th-century date and it is clearly different to the historic (late 17th or early 18th-century) brickwork to the external face of the Ferneries' south wall. Ten courses of the internal brickwork measure 78 cm tall (they are unusually large bricks) while 10 courses of those in the outer face measure 68 cm tall. Recent works have included the removal of some isolated bricks from the internal face and this has confirmed that this 19th-century internal skin has been added as a lining to the older brickwork immediately behind (discussed further below).

- 6.3.22 The internal (N-S) walls which create the two fernery tank chambers are slightly later still and probably date from the late 19th century, presumably 1895 when it is believed the orangeries were converted to ferneries. These late 19th-century walls in each fernery abut the barrel vaults above.
- 6.3.23 Although the ferneries now have a somewhat unkempt neglected appearance with the columns rusting and much of the paint lost from the brick walls it is clear that they would once have been attractive garden rooms. They have stone flagged floors and in some areas fine tuck-pointing survives to the brick joints. Historic paint analysis has been undertaken on various samples from within the ferneries. Layers of white limewash have been found on the fernery walls but the small number of these layers (a maximum number of four layers) does not represent a long history of decoration and these layers probably all post-date the conversion of the chambers to ferneries (Oestreicher, 2015). The traces of fine tuck pointing found show that the internal walls from the c.1840s would definitely have been exposed brick and it seems likely that this remained the case until the orangeries were converted.
- 6.3.24 A larger number of layers of paint were found on the column shaft in the West Fernery (nine layers) and this was probably always painted from the 1840s construction.
- 6.3.25 The lightwells which were inserted in the 1840s when the chambers were converted to orangeries were constructed from the same type of brickwork and evidence of these have been exposed in the works on top of the terrace (detailed in section 9, Area F).

6.3.26 West Fernery

- 6.3.27 The north wall of the West Fernery has two high former openings [*Features C.1.5. Pl C.7, C.9*] which extend deep into the wall behind and presumably these would formerly have allowed light into the chamber prior to the mid 19th-century work to raise the height of the ground immediately north of the terrace (towards the Terrace Pavilion). The fact that the windows are so high in the wall presumably reflects the fact that although at this time there would have been a north face to the terrace the ground level would have been significantly higher on the north side of the terrace than on the south side. No openings are shown on the c.1798 view which depicts this area.
- 6.3.28 Each of these former openings comprises a segmental arched opening within the early 19th-century brick lining in front of a rendered recess which extends by c.1.5 m into the wall and has a shallow-arched top. Each opening has a sloped tiled sill to maximise the light entering the chamber, and a timber window frame (apparently associated with the 19th-century inner wall lining) although neither of the windows themselves survives in-situ. At the rear (north) end of each of the rendered alcoves there is bare brick blocking which was presumably added when the ground level was raised immediately north of this. The excavation works on top of the terrace revealed evidence of these former openings in the form of two semi-circular brick enclosures (detailed more in section 9, Area F).
- 6.3.29 There is an opening with a fixed iron grille in the west wall of the West Fernery and it appears from the brickwork surrounding it that this opening is a secondary insertion (ie later than the c.1840 lining to the walls). The character of this brickwork around the opening is distinct from the main brickwork that lines the walls of the West Fernery and the suggestion that the opening was a secondary insertion is also supported by evidence recently revealed by repair works within the chamber. The iron grille was removed for conservation and the exposed part of the sill strongly appeared to have been formed by truncating bricks. This sill also appeared quite different to the sills of the two windows in the south wall of the fernery. These two windows in the south wall had something of a void within the brickwork at their sills which have a loose fill (*Pl. C19*) whereas the sill of the window in the west wall is solid (truncated

- bricks). The insertion of this window must have pre-dated 1883 because the window (without grille) is just shown on a photograph taken at this date by Henry Taunt and held at the Oxfordshire Archives (Ref: HT3585). The grille is presumably of the same 1895 date as the other grilles in the ferneries.
- 6.3.30 In the barrel vaulting of the West Fernery there is a distinct patch (c.6 bricks long, c.1.25 m) where the brickwork has been reformed and this must relate to the removal of the former lantern which is known to have illuminated the fernery from above. This patch [*Feature C.1.6*] straddles the abutting wall which divides the main fernery from the fernery tank chamber.
- 6.3.31 As referred to above a number of isolated bricks have recently been removed from the inner wall lining to enable repairs and this has allowed some examination of the previously hidden structure behind. The main bricks removed have been from the west wall and north wall. This has confirmed that the visible brick face is not bonded to the older structure behind and the later face of the west wall is c.19 cm in front of the older face (ie apparently with a void of c.7-8 cm). Fragments from the probably original lime plaster surface survived to the face of the earlier wall behind the later 19th century lining. The earlier plaster was particularly clear in an area immediately north from the inserted opening in the west wall (*Pl. C18*).
- 6.3.32 Fewer bricks were removed from the north face but an opening was made at the base of the wall (possibly the location of a former stove) which was large enough to allow some visual access. From here it was possible to see a clear void between the earlier structure and the later lining, apparently extending across the full wall. This continues eastwards behind the fernery water tank chamber. The iron beams from the ferneries continues through this void and there appeared to be a stone sill slab also extending across the void at the location of the windows. This void would have been created when the chamber was converted to an orangery so it may be that it was a form of a heated wall.
- 6.3.33 Another minor feature of interest recently revealed by the removal of various bricks has been the number 512 marked to the underside of a brick towards the centre of the north wall (2.66 m above floor). This number appears to have been inscribed in the wet clay when the brick was being manufactured and it was presumably a batch number (*Pl. C17*).
- 6.3.34 Among the interesting features in the West Fernery is a group of incised circular marks [*Feature C.1.7. Pl. C12*] similar to another set of marks in the East Fernery. There are four main marks in the West Fernery, broadly similar to each other and comprising a circle of varying diameter (between 35 cm and 46 cm). The centre of each of these marks is between 1.23 m and 1.32 m above the ground level and it appears that they would have had a light-weight fixing at the centre. There are three main marks to the piers in the south wall and a further mark to the southernmost pier in the west wall. It could be significant that with all the marks the central fixing is off centre in the pier so that the outer circle aligns with the edge of the pier. This may be coincidental but it appears that they are deliberately positioned like this. With the easternmost pier there are two overlapping circles, the form of which suggests that the circular fixing was removed (or came loose) at some point and was then reinserted. The first hole is large and supports the suggestion that the fixing came loose. The hole for this fixing is c.9 cm deep and c.1 cm in diameter.
- 6.3.35 The marks could have been made by a simple mechanism with a rotating handle such as a winder for storing hose reels but the very light-weight fixings do not strongly suggest this and it may be that they had a simpler explanation. It may be that each fixing held a pencil on a piece of string for staff to make notes and this pencil could have been used to create patterns in the relatively soft brick wall. When the chambers were Orangeries there were large

windows in these openings and one possibility is that the marks resulted from latches used to hold the windows in an open position.

6.3.36 One interpretation could be that they had a deeper meaning such as apotropaic marks (or witch marks) but doodled patterns may be more likely. These rough patterns would imply that the rooms were utilitarian spaces in the 20th-century, different from the more formal orangeries, and the fact that there is also graffiti in the same areas (although more in the East Fernery) may also support this (*Pl. C14*). The marks and graffiti were recorded by NT volunteers Ted Sutton and Jane Smart in March 2014.

6.3.37 *Excavations in floor of West Fernery*

6.3.38 The current project has included some excavation works in the floor of the West Fernery which have exposed evidence of the previous form of the structure. The main excavations were immediately inside the front wall of the Fernery and they extended across the eastern half of the room but there was a branch trench which extended from this in a north-easterly direction (*Pl. C20-22*). The works exposed a very substantial brick footing [*Feature C.100.1*] and it appeared to continue through from the brick base found immediately to the south of the fernery [*Feature C.1.1*] which is believed to have formed part of the set of steps shown on various 18th century views (discussed more in Section 9 on Area F. The brickwork in the main foundation [*Feature C.100.1*] along the front of the room was seen to be 8 courses deep (extending to 80 cm below surface) and formed from soft, red brick with soft white mortar laid in thick joints.

6.3.39 There was also found to be a similar type of red brickwork foundation in the west side of the SW-NE trench dug towards the centre of the Fernery while in the east side of this trench there was similar brickwork in the southern half but none in the northern half. The brickwork in this area ended c.1.9 m north from the internal wall of the fernery.

6.3.40 A large ceramic pipe and drain was exposed at what would have been the centre of the fernery (prior to its subdivision in the late 19th or early 20th century). A circular tap/rose sunken just beneath the surface of the floor slab was exposed at the south-eastern corner of the room [*Feature C.1.9; Pl. C15*]. This would clearly have related to pipes extending east into the fernery water tank and presumably this tap also dated from the creation of the water tank, probably in the 1890s. Some decorative, encaustic, Gothic Victorian tiles had been reused as protective packing (or shuttering) around the tap.

6.3.41 *East Fernery*

6.3.42 In the East Fernery there are two blocked openings high in the north wall which would formerly have let in light but unlike in the West Fernery one of these windows is now abutted by the probably late 19th-century cross wall which creates the East Fernery water tank. This is the one opening in the north walls of the two ferneries where the window itself remains in-situ. This is a 9-light window and although it was not possible to examine it closely it did not look older than the 19th century. Clearly it must have predated the insertion of the cross wall in the late 19th or early 20th century to form the water tank and it could therefore survive from the 1840s conversion to the orangery.

6.3.43 Several bricks have been removed from the inner 19th-century walls of the East Fernery to reveal the older fabric behind and the arrangement appears to be similar to that in the West Fernery. The face of the east wall is a single brick thick, with headers formed from cut bricks, and it is not bonded to the older wall behind. The face of the older wall is c.16 cm behind the current face so there is a void of c.5 cm between the bricks. The 19th century bricks in the front wall have shallow frogs and the face of the older wall behind retains patches of the primary plaster. It is interesting to note that there appears to be a distinct vertical line in the east wall

- at a point c.1.5 m south from the north wall. To the south of this vertical line those parts of the wall that are visible are plastered while to the north of it the brickwork is bare.
- 6.3.44 In the north wall the 19th-century front skin is 23 cm thick and the rear face is 54 cm behind, thus creating a void of c.31 cm. Although it was not possible to see the whole void as in the West Fernery this arrangement appeared to be consistent in each of the holes opened. The rear bricks were less consistent and much thinner than those in the front wall (eg c.5.75-6 cm tall). As referred to above in the description of the West Fernery it could be that this void was heated to encourage the growth of the plants in the Orangery.
- 6.3.45 There are circular inscribed marks [*Features C.2.1*], against the inner face of the two main piers in the south wall of the East Fernery (*Pl. C30*), similar to those in the West Fernery discussed above. The diameters and heights of these marks are similar to those in the West Fernery although in this chamber the edges of the circles do not align clearly with the edges of the piers. The marks on the western pier are relatively faint and in the main circle the only clear mark is a 17 cm long line around the base. There is also another mark around the pin with a radius of c.5 cm, where the brick is less worn, and in certain light it is also possible to see another very faint mark with a radius of c.7 cm. There is also on this pier a mark from another overlapping circle as if the pin was moved to the east. The pin from this one is not in-situ.
- 6.3.46 There are more extensive marks on the western pier again with two overlapping circles but this time with additional curved lines which give something of the impression of petals or the spokes of a wheel. These internal curved lines give the feature a similarity to apotropaic marks (or 'witches' marks'). Small iron loops survive at the centre of each of these circles.
- 6.3.47 The East Fernery also contains a collection of historical graffiti around the doorway, particularly visible around the west side because the east jamb has been rerendered. There are several clear names, presumably of members of staff, and various dates from the 20th century (several from the first quarter of the 20th century). Some of these fragments are peeling and flaking off.
- 6.3.48 *Holes in floor of East Fernery*
- 6.3.49 During the current project significant excavations have been undertaken in the floor of the East Fernery to allow for new drainage pipes (*Pl. C31-35*) and together with various other pits dug inside other chambers along the length of the terrace they have revealed valuable evidence of the original form of the structure.
- 6.3.50 The main pit or trench was c.90 cm wide (at max) and it was dug against the inside face of the south wall. This extended eastwards from the south-west corner of the Fernery to the pier on the east side of the entrance. In addition the central part of the trench was also extended to the north. The depth of the trench varied but its maximum depth was c.80 cm deep.
- 6.3.51 The excavations in the floor revealed extensive areas of historic brickwork which is believed to have formed part of a vast east-to-west foundation created by the Duke of Buckingham in the 1670s for the front of his terrace (Fig C2). The main foundation observed in the excavations immediately inside the building was constructed from a soft red brick with soft white mortar [*Feature C.2.3*]. The top of this brickwork was found at c.24 cm below the current paved surface and it continued down at least a further 56 cm (7 courses) but the base was not reached so it could continue down considerably further. Very little of the northern edge of this base was exposed because it generally continued beyond the line of the excavation but in the section where the trench was continued northward there did appear to be a break at a point c.1.06 m to the north of the fernery's internal face. In this northern trench there was further historic red brickwork [*Feature C.2.4*] lining the eastern side of this trench which appeared

- very similar in character to the brick in the main foundation but it was separated from it by a clear straight joint. The face of this brickwork had been removed prior to the current recording so it was not possible to determine whether there was a clear north-to-south edge to it.
- 6.3.52 The most interesting features revealed by the excavations were traces of former curved brickwork [*Feature C.2.5*] which must have related to the niches (or other very similar feature) which are believed to have originally formed the front wall of the terrace. Relatively little of this survived but the trace was clear (*Pl. C32-33*). Immediately inside the threshold of the central doorway the lowest course from a set of former bricks was revealed which would have been laid to form a curved rear of a possible niche. These were c.20 cm below the current floor surface and they had mortar on top from the former brickwork. The niche would have been formed with a double layer of bricks (the curve is 53 cm wide) and the individual bricks measured 23 x 10.5 x 6 cm. At its northernmost point the rear side of the curved brickwork would therefore have been c.95 cm to the north of the current inner face of the fernery and it appears that it would have fitted neatly onto the large foundation described above [*Feature C.2.4*] and found in various pits inside the terrace chambers. The main section of the curved brickwork had been completely removed but clear traces of the brickwork survived towards each side and they clearly related to the same curve.
- 6.3.53 It strongly appeared that the niche structure had been truncated to allow for the construction of the fernery. As the niche would have continued south into the area which is now occupied by the fernery's front wall it is not possible to be certain of the full width of this niche but the exposed section would have been c.1.4 m wide. By continuing the curve it is possible to speculate that the niche would have been c.1.6-1.7 m wide.
- 6.3.54 In addition to the surviving bricks which formed the inner face there were also a number of other bricks to the west which appear to have formed part of the adjacent niche (*Pl. C34*). Three bricks were noted here set at a skew angle and their angle was suggestive of them having formed part of the neighbouring niche, although the area exposed was not large enough to confirm this.
- 6.3.55 It is assumed that these brick traces survive from the 1670s phase of works and that they were from similar features to the niches which were found behind the blind arcading by the National Trust [*Feature B.3.1*]. However, it should be noted that the niches found by the National Trust appear to have been significantly larger; estimated as being c.2.9 m wide by c.1.3 m deep (N-S). They may have been from features within the staircase structure shown on Colen Campbell's elevation in Vitruvius Britannicus but the detail in the elevation is not clear here.
- 6.3.56 Excavation works beneath the stone threshold of the door showed that the two piers either side of the main doorway were set on distinct below-ground piers with clear faces to the sides (facing into centre) and to the north. This brickwork appeared contemporary with the main fernery front and it appeared that the main red brick foundation had been cut back to allow for its construction.
- 6.3.57 Among the other features revealed by the excavations was a cast-iron pipe (12.5 cm diameter, 55 cm below the surface) orientated north-to-south and extending out of the fernery beneath the central entrance. It is assumed that this pipe connected with the vertical pipe against the rear wall of the fernery. Another earthenware pipe orientated east-to-west was exposed towards the northern end of the trench, just to the south of the two cast-iron columns.
- 6.3.58 A circular rose-type water tap was also exposed just beneath ground level towards the south-western corner of the fernery. This was very similar to the tap found in the corresponding place in the West Fernery and presumably it dates from the conversion of the former orangeries to ferneries in the 1890s.

6.3.59 FERNERY WATER TANKS INTERNAL DESCRIPTION

- 6.3.60 The two chambers known as the fernery water tanks are located behind the front wall of the terrace and they each straddle the junctions between the inner edge of the fernery facade and the end of the terrace blind arches. Thus they are also partially behind the outermost blind arch at each end of the terrace.
- 6.3.61 The interiors of the two fernery water tanks have been accessed in the current project and this has confirmed that each one is a single open chamber (5.85 m x 3 m) with a concrete floor covered by a thin dried residue.
- 6.3.62 The walls of each chamber are clad in three-quarter height cement render tanking (c.3.3 m tall) and there are numerous small twigs or pieces of grass which presumably survive from when the tanks were full of water. The twigs and other detritus form horizontal lines to the walls showing the former height of water in the tanks. There is also a much darker line in the East Fernery tank at 60 cm above the floor which may indicate a former sludge layer.
- 6.3.63 The upper parts of the walls are visible and this has helped confirm that the walls follow the arrangement in the rest of each fernery with early or mid 19th-century brickwork to the original outer edge of each fernery and a clearly inserted wall subdividing the spaces. As referred to above the inserted walls have cement mortar and stock bricks which are suggestive of a later 19th or early 20th-century date and it very strongly appears that they are contemporary with the render tanking.
- 6.3.64 The barrel vaults above these chambers continue the same pattern in the rest of the two ferneries, supported by an RSJ beam and a cast-iron column. The columns are formed from two sections and there are three simple bolted straps at the join. As stated above the barrel vaults incorporate areas of rebuilt brickwork [*Feature C.1.6*] straddling the inserted c.1895 wall. These areas of rebuild presumably relate to the removed lanterns and they measure c.1.25 x 1.25 m.
- 6.3.65 At the northern end of each chamber there is an access hatch in the vault which is reached by a ladder or set of steps fixed to the north wall although these are being replaced in the current works.
- 6.3.66 In the north walls there are also segmental arched openings to match those in the main ferneries. The former orangery at the west end would have been illuminated by three windows in the north wall whereas that at the east end would have been lit by two windows. As referred to above the window in the East Fernery is now abutted by the inserted cross wall but in the West Fernery the former opening is entirely within the chamber and it was infilled with brickwork when the water tanks were created. At this time a ladder was also installed against it up to the access hatch.
- 6.3.67 It is interesting to note that the fine tuck pointing from the brickwork of the former orangeries survives particularly well in several areas of the water tank chambers. It is also interesting to note extensive 'pecking' on the face of the brickwork up to a height of c.1 m above the render tanking (up to c.4.3 m above floor). Presumably chips or pecks were made all over the walls to help to secure the render but in the event the render only extended parts of the way up the wall. The extent of the pecking was not consistent however so there was no pecking above the tanking in the inserted west wall, possibly because this wall was contemporary with the tanking. There was extensive pecking in the south half of the east wall but none in the north half of this wall. There was also no pecking in the brick infill in the archway in the north wall.
- 6.3.68 In the West Fernery water tank chamber the east wall (1840s) is structurally separate from the adjacent, parallel older wall (1670s?) to the east and similarly in the East Fernery tank the 19th-

century face of the west wall is separate from the older wall behind. A rudimentary inspection of these areas has been possible through a small opening created high in each wall and this has confirmed that there is a void within this wall, similarly to those noted in the north walls of the ferneries. At the hole the full depth of the wall is c.1.3 m through to the adjacent barrel vaulted chamber.

6.3.69 In each chamber there is a pipe within the wall shared with the adjacent barrel vaulted chamber, close to the floor. The pipe between the West Fernery tank and the adjacent barrel vaulted chamber is ceramic, located towards the northern end of the wall, and c.14 cm in diameter. It is c.15 cm above the floor in the barrel-vaulted chamber but c.30 cm above the lower floor in the fernery water tank. The pipe slopes gently down towards the fernery water tank so it is likely that the floor in the room to the west is at least 25 cm below that in the room to the east. That in the East Fernery is very corroded but it appears to be of iron construction. It is c.12 cm in diameter, 37 cm above the floor and c.1.4 m north of the south-west corner of the room.

6.3.70 The tanks also include various other features relating to their former use. In the West Fernery there is a large float ball close to the west wall formed from a fixed vertical rod or pipe and a light-weight metal-lined ball around it. This ball would have floated when the tank was full of water, sliding up and down the rod, and it would have been connected to a wooden gauge on the west side of this wall (ie within the main fernery) to indicate how much water was being held. A bicycle type chain is fixed to the top of the ball and this passes through the wall at a high level with a small pulley wheel to help it run smoothly. The chain then would have connected to the gauge.

6.3.71 *Hole dug in floor of West Fernery Water Tank*

6.3.72 A 1 m³ hole was dug in the floor at the south-west corner of the West Fernery Water Tank (Pit C.101) in order to allow a drainage pipe to extend through the wall at this point. The concrete slab which forms the current surface was 10 cm thick and this sat on a loose screed. Below the screed the hole continues down through a very substantial wall footing constructed from relatively soft hand-made red bricks with a white lime mortar [*Feature C.101.1*]. The bricks are c.6.25 cm tall and this wall must have been part of the front wall of the late 17th century terrace. The brickwork appears to continue down beyond the base of this excavation and therefore it is at least 1 m deep below the current ground surface. Nine courses of the old brickwork are visible.

6.3.73 The northern edge of this brick base appeared to broadly coincide with the northern edge of the excavation so it was c.90 cm to the north of the rear face of the front of the terrace.

6.3.74 The south wall in this excavation was largely rendered and only the lowest c.2 courses were visible but it appeared that this wall was formed from later bricks than those which formed the large base. They are believed to form part of the c.1840 phase of alterations.

6.3.75 The late 19th/early 20th-century yellow stock brick of the west wall was observed to continue down for c.5 courses and it then sat on the older red brick base. There was a pipe within this west wall but it was set in a very hard concrete/mortar which appeared to have been created within a pre-existing wall.

6.3.76 *Hole dug in floor of East Fernery Water Tank*

6.3.77 A similar pit (again c.1 m³) was dug at the south-east corner of the East Fernery Water Tank and although the actual excavation work was not monitored the pit was inspected and recorded once it was fully opened (Pl. C43). The features revealed were broadly similar to those in the West Fernery tank. The concrete slab was c.10 cm thick and below this was a substantial base [*Feature C.4.1*] formed by red brick suggestive of an 18th-century date. This

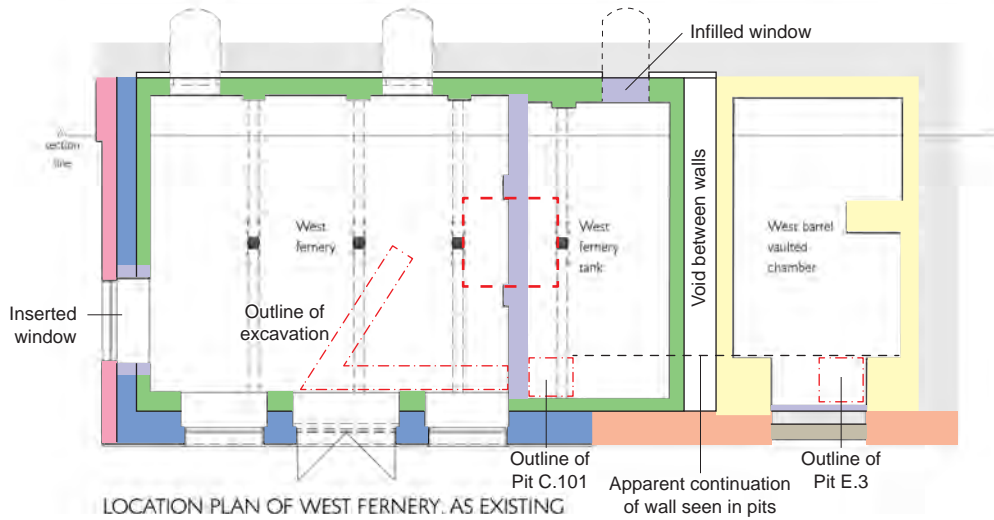
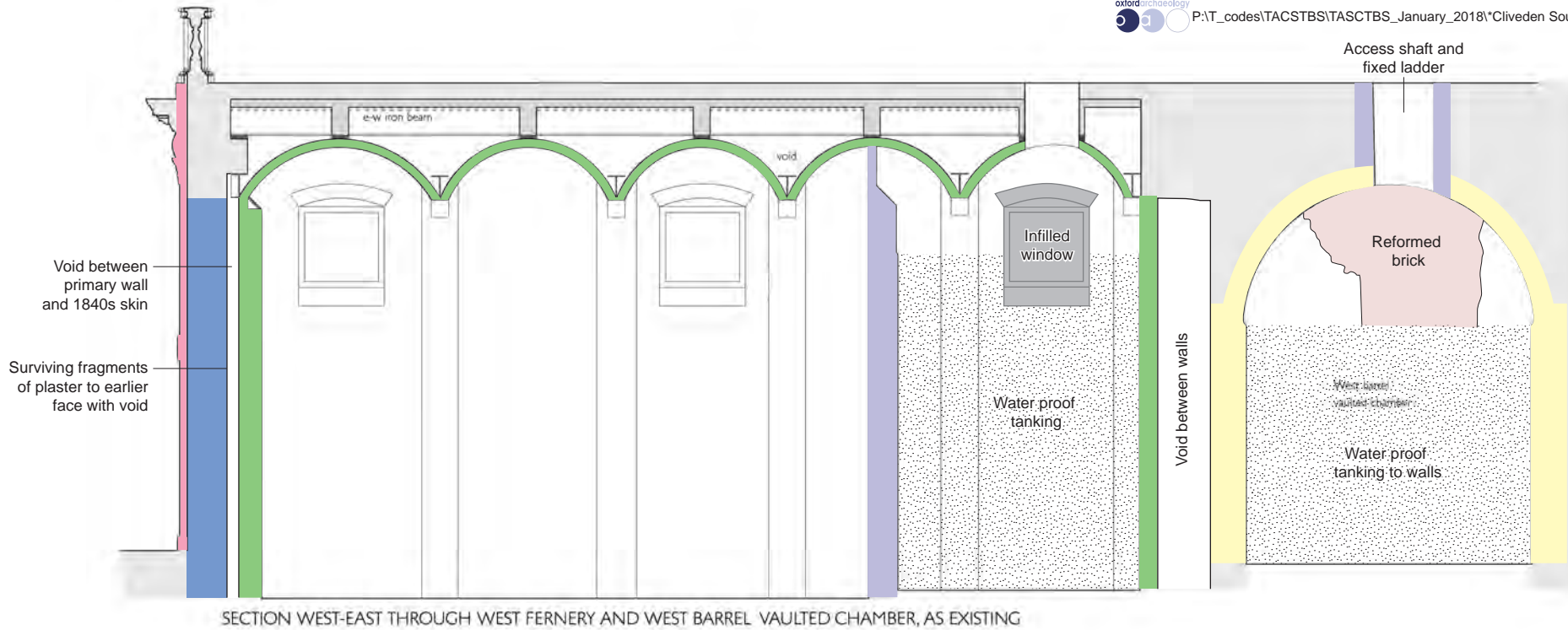
extended across almost the entire pit although the base of it seemed to be reached at the bottom of the excavation. When it was fully excavated the base of the pit comprised a layer of fine sand.

- 6.3.78 On the west side of the excavated pit the top of the old brick base was located c.25 cm below the ground level (below the 10 cm slab and a 5 cm layer of sand). On the north side of the excavated pit the top of this old brick base was located c.60 cm below the ground surface (above this was a loose fill and concrete slab) but unlike in the West Fernery the brickwork seemed to continue northwards beyond the line of the excavation.
- 6.3.79 On the east side of the excavated pit the upper 30 cm was formed from yellow stock brick (late 19th or early 20th century from the conversion and division of the Fernery) and below this was 17th-century red brickwork to the bottom (Pl. C44). This side of the pit also incorporated a duct or horizontal channel against the inner face of the external wall (Pl. C43-45) and extending eastwards into the floor beneath the East Fernery. The adjacent area in the Fernery was not exposed. The channel was 24 cm tall x 20 cm wide and the top of it was 40 cm below the current floor surface. The channel was partially filled with sludge and it is assumed to relate to drainage. It may be significant to note that it was set at the same height as the upper face of the red brickwork in the north side of the excavation. This appeared to be part of the original construction.
- 6.3.80 The same channel was also visible in the west side of the pit immediately inside the external (south) wall of the chamber. It was possible to thread a tape measure along this drainage channel (Pl. C45) against the front wall of this chamber and this showed that the channel continued at least 4.1 m to the west which would have taken it beneath the adjacent barrel vaulted chamber.
- 6.3.81 It was not possible to closely examine the bricks which formed this drainage channel but there appeared to be a very slight arch to the top and snots of mortar seeping down. The primary brickwork appears to be constructed over it and although it's probably possible that the channel could have been constructed from the front after the dismantling of the original front wall it is more likely that this channel was part of the original construction.
- 6.3.82 In the south side of the exposed pit there were two courses of brick immediately below the concrete floor slab and these were the footing of the 1840s wall forming the inner face of the former orangery. Below this the wall stepped back (southwards) by 25 cm to the rear of another wall and although it was not possible to examine these bricks closely this was presumably the rear of the original face of the chamber.

6.4 Summary and conclusion

- 6.4.1 The two end chambers now known as the ferneries are among the most significant parts of the South Terrace at Cliveden, principally because their facades are thought to be the oldest visible parts of the structure, either dating from the primary construction of the terrace in the 1670s or forming early additions in the early 18th century. The south elevations have a high aesthetic quality, being of finer design and detailing than the terrace's main blind arcade which was a later alteration, and they provide a valuable indication of the probable original appearance or character of the rest of the terrace.
- 6.4.2 Their interiors were then comprehensively remodeled in the 19th-century (between 1838-1847) when the chambers were each converted to orangeries. This work included lowering the floor levels, removing external flights of steps which had provided access into the chambers, constructing a new barrel-vaulted ceiling supported by cast-iron columns, relining the interiors of the chambers with fine brickwork and constructing new upstanding skylights

- or lanterns in the terrace to illuminate the orangeries below. The orangeries would also have been lit by windows in the north walls when the ground level immediately to the north was lower.
- 6.4.3 The orangeries were then converted to ferneries and it seems most logical that this conversion happened in 1895 when the previous sash windows are known to have been replaced by the current ornamental grilles. The heat gained from the glazing in the previous windows would have been essential to the chambers functioning as orangeries.
- 6.4.4 The current project has exposed a number of interesting features relating to the historic form and evolution of the ferneries. Perhaps the most intriguing have been exposed in trenches dug in the floor of each fernery including the base of a very wide brick wall which extends east to west beneath the front of the terrace and which must have been constructed in the 1670s to form a solid foundation for the front of the new structure. The section of this wall exposed in the East Fernery has been of particular interest because it showed traces of semi-circular features in the upper surface which it is assumed formed niches or similar structures (Pl.C32-35). These may have been similar to the traces of niches revealed in 2012 behind the blind arcade but those in the East Fernery appear to have been smaller.
- 6.4.5 Whatever form these 'niches' in the area of the ferneries took they were clearly replaced by the fernery structures and it seems most likely that this occurred in the first quarter of the 18th century when the central staircase replaced what are believed to have been end staircases. It may be that the semi-circular features were within the projecting staircase structures shown at each end of the terrace on the drawings in Vitruvius Britannicus.
- 6.4.6 There is also a possibility however that the structure was even replaced during the initial construction phase in the 1670s. There is a reference from 1677 to the Duke of Buckingham possibly having to pull down a part of his new construction due to '*a little mistake in my builders*'. The Duke estimates that this would cost above £10,000 so it would clearly have been a large area that was pulled down and it is possible that the ferneries were part of this.
- 6.4.7 Other features have included evidence to confirm that the previous 17th or early 18th century walls of the ferneries survive behind the c.1840s facing skin although there is a void or cavity between the two areas of brickwork and they are not bonded together. It may be that this cavity was heated, as was common in buildings such as this, and a small opening in the West Fernery, possibly for a stove may support this. Another feature identified during the project has been areas of reformed brickwork in each of the fernery vaults which must relate to when the skylights were removed, probably in the 1890s.



- Late 17th century/early 18th century
 - 18th century
 - c.1760s-70s blind arches
 - c.1840 conversion to orangeries
 - 1895
 - 19th century render (1860s)
 - 19th century infill to arch
 - Approximate outline of former lantern rooflight
- 0 5m

Figure C.1 Plan and section through West Fernery and tanks

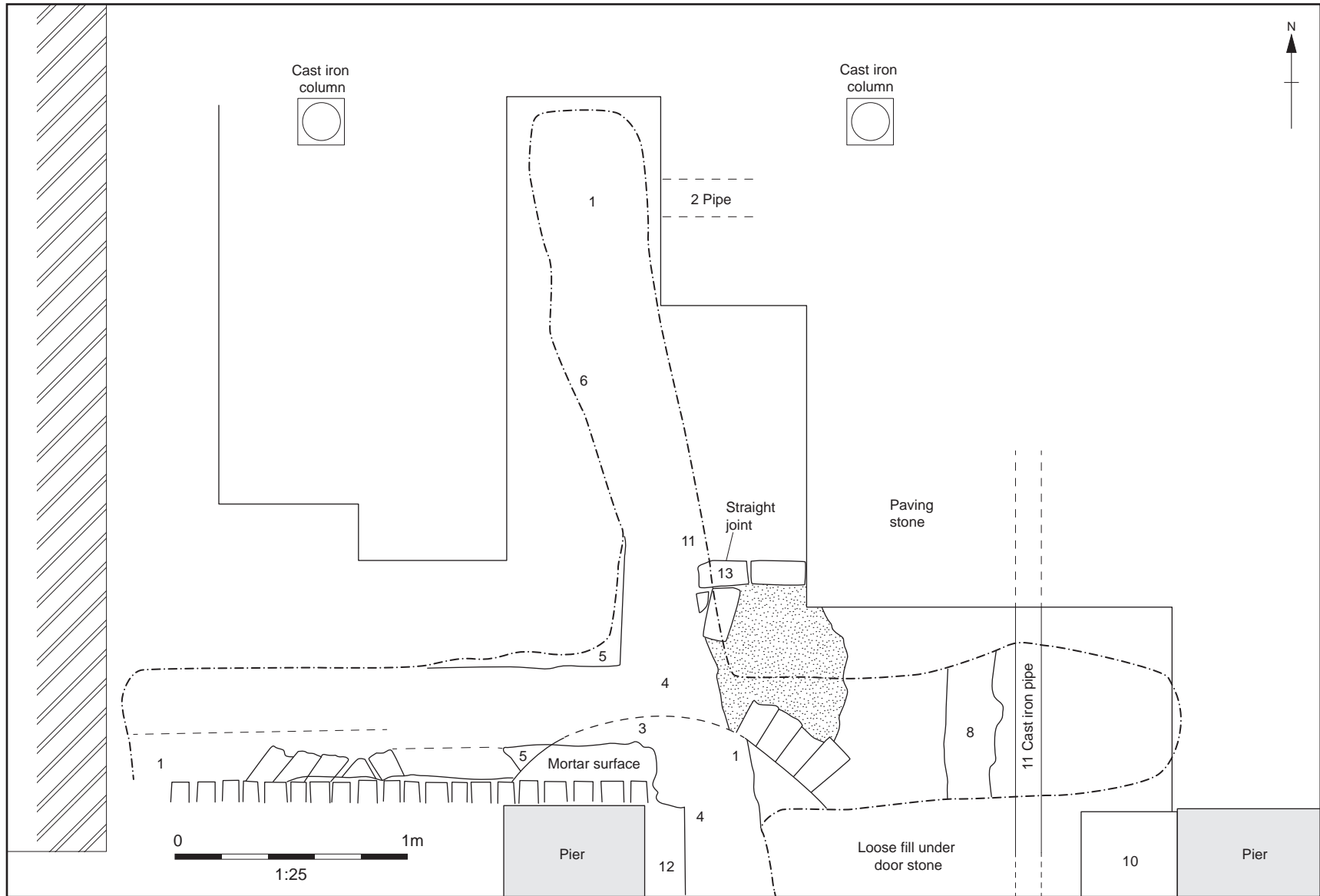


Figure C.2 Plan showing trench dug in floor of East Fernery



Plate C.1: South elevation of West Fernery



Plate C.2: West Fernery from south-west



Plate C.3: West elevation of West Fernery, looking east



Plate C.4: Footings visible beneath front wall of West Fernery, looking north



Plate C.5: Exposed footings in front of West Fernery [G.117.1], looking north-east



Plate C.6: Interior of West Fernery, looking east



Plate C.7: Interior of West Fernery, looking north



Plate C.8: Interior of West Fernery (west wall)



Plate C.9: Interior of West Fernery (north wall)



Plate C.10: Interior of West Fernery (south wall)



Plate C.11: Vaulted ceiling in West Fernery



Plate C.12: One of the circular marks in West Fernery, looking south

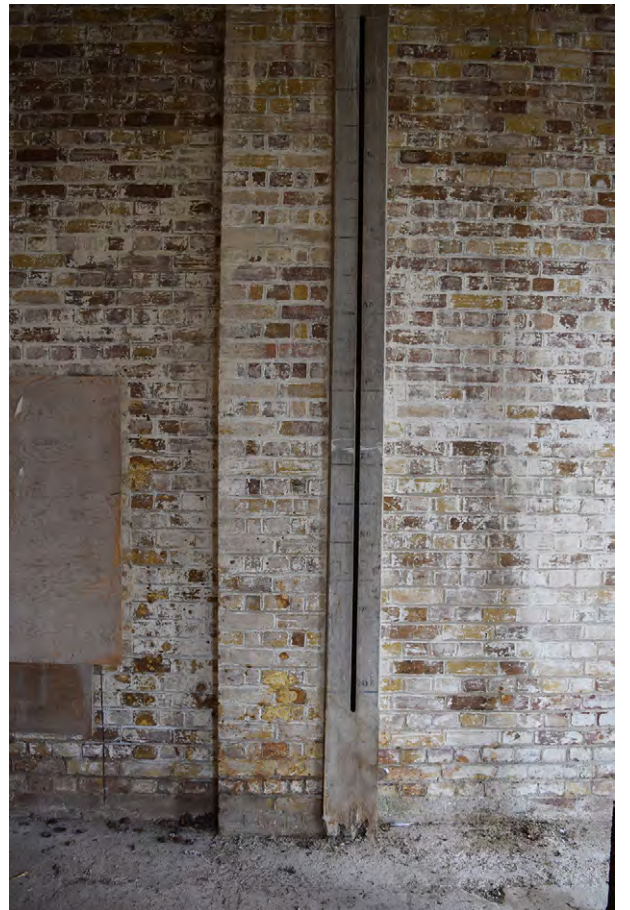


Plate C.13: Water gauge on east wall of West Fernery

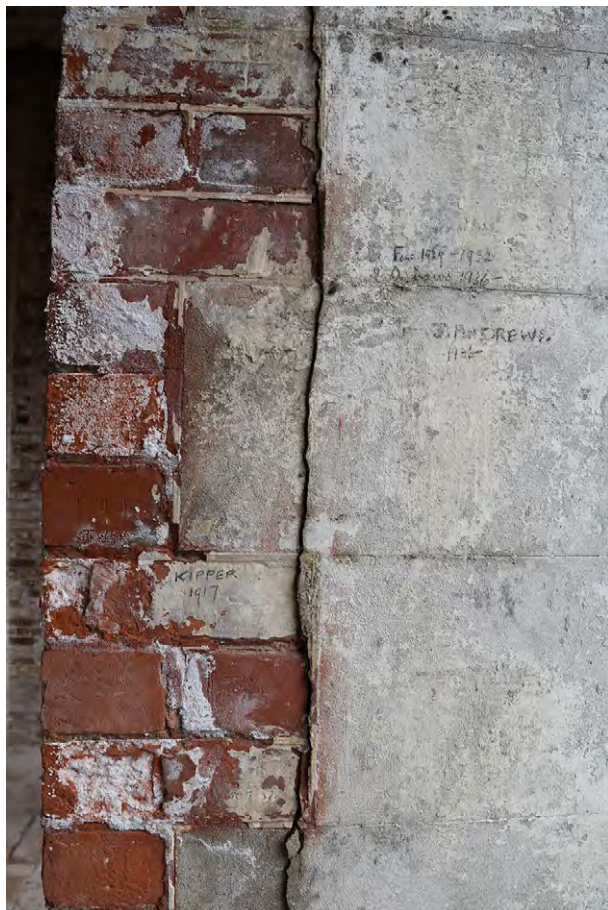


Plate C.14: Graffiti on door jamb of West Fernery, looking east



Plate C.15: Tap at SE corner of West Fernery, looking east [C.1.9]



Plate C.16: Bricks removed from internal face of west wall in West Fernery, looking west



Plate C.17: '5.1.2' batch mark on underside of brick in West Fernery, looking north



Plate C.18: Area of removed bricks with older plastered face behind west wall of West Fernery



Plate C.19: Exposed base of wall beneath window in West Fernery, looking south



Plate C.20: General view of excavations in West Fernery, looking south



Plate C.21: Excavations in West Fernery with exposed wall [C.1.8], looking east



Plate C.22: Wall base exposed in West Fernery [C. 1.8], looking south, to east of doorway



Plate C.23: South face of East Fernery



Plate C.24: South face of East Fenery



Plate C.25: Large iron tie-bar in south wall of East Fenery, looking north



Plate C.26: Interior of East Fernery (south wall), looking south



Plate C.27: Interior of East Fernery (north wall), looking north



Plate C.28: Interior of East Fenery (south wall), looking south-east



Plate C.29: Interior of East Fenery (south wall), looking south



Plate C.30: Circular marks on south wall inside East Fernery [C.2.1], looking south to east of doorway



Plate C.31: General view of excavations inside East Fernery, looking east



Plate C.32: Trace of foundations from former curved feature exposed in floor [C.2.5]



Plate C.33: Trace of foundations from former curved feature exposed in floor [C.2.5]



Plate C.34: Excavations at SW corner of East Fernery, looking south-west



Plate C.35: Trace of foundations from former curved feature exposed in floor [C.2.5], looking south



Plate C.36: West Fernery Water Tank (looking north)



Plate C.37: Ladder and blocked arch in north wall of West Fernery Water Tank, looking north



Plate C.38: West Fernery Water Tank (looking north)



Plate C.39: Vault detail in West Fernery Water Tank, looking south



Plate C.40: North wall in East Fernery Water Tank



Plate C.41: East Fernery Water Tank (note brick infill in vault [C.4.3], looking north-east



Plate C.42: West Fernery Water Tank looking south



Plate C.43: Pit dug in floor of East Fernery Water Tank , looking south-east



Plate C.44: Pit dug in floor in East Fernery Water Tank, looking east



Plate C.45: E-W drainage duct exposed in excavations in East Fernery Water Tank [C.4.2], looking west



Plate C.46: South face of East Fernery with lower banks removed



Plate C.47: Evidence of former steps in south face of East Fernery, looking north



Plate C.48: Brick footing looking west exposed by East Fernery. Possibly supported lower step



Plate C.49: Lower part of south wall of East Fernery (to west of doorway), looking north-west



Plate C.50: Lower part of south wall of East Fernery (to east of doorway), looking north



Plate C.51: Lower part of south wall of East Fernery

7 SOUNDING CHAMBERS (AREA D)

7.1 Introduction

- 7.1.1 Beneath the centre of the South Terrace is a pair of vaulted chambers accessed through an arched doorway framed by the double staircase, as well as by Charles Barry's mid 19th-century portico. These rooms were historically used for musical performances although more recently they have been merely used for minor storage. This is Area D in the current report's numbering system.
- 7.1.2 In November and December 2014 render was removed from the internal surfaces of the Sounding Chambers as part of the general restoration works to the South Terrace.

7.2 Historical evidence

- 7.2.1 Although we know that the main terrace was constructed in the 1670s there is little early documentary evidence relating directly to the central chambers. Colen Campbell's elevation from *Vitruvius Britannicus*, published in 1717 appears to show an arched central doorway which presumably led into some form of a chamber but the form of this is unknown (Fig 7). The other garden proposal plans from the first quarter of the 18th century (Figs 2-4) do not shed any light on the nature or existence of a possible chamber but when Daniel Defoe visited Cliveden in 1724 he made an interesting reference to an internal staircase linking the central chamber with the mansion. There is a simple staircase surviving today connecting the west side of the inner chamber with the hotel above but evidence suggests that the door in the chamber leading to these stairs was a secondary insertion. There is a blocked primary opening in the east wall of the inner chamber and it could well be that this led to the staircase referred to by Defoe (discussed further below).
- 7.2.2 The Cliveden Album includes an interesting drawing by Giacomo Leoni from c.1735 showing a design for the internal decoration of an ornate domed chamber. The drawing is unlabelled and Gervase Jackson-Stops believed it was for the Octagon Temple at Cliveden. However the plan of this building is different to the Octagon Temple (elliptical rather than Octagonal) and is a different size. Therefore there is the possibility that it was a design (probably unexecuted) for the Sounding Chamber.
- 7.2.3 There are several views from the mid 18th century which consistently show a large arched opening at the centre of the stairs leading through to a chamber beneath the terrace. Only copies of the views have been seen but some of these are detailed enough to give some indication of the detailing of the main doorway from the 1750s to the 1770s. A view from 1759 (Fig 11) shows a shallow-arched opening supported by engaged columns to each side and with a keystone. To the main face of the gateway the view shows what appears to be Ionic pilasters outside the archway set on a pedestal and supporting an entablature. The entablature and balustrade is shown stepping back slightly to either side of the pilasters and continuing to the edge of the main flights of stairs. The opening in the view appears to include a set of gates although this detail is unclear.
- 7.2.4 There is another slightly later view, possibly from the 1770s (Fig 12), for which we have a high resolution scan and this one shows the doorway around the opening with a broadly similar form to 1759. Again there are what appear to be engaged Ionic columns supporting the arch and then taller columns or pilasters outside of this supporting the entablature. One difference here is that the outer columns or pilasters are not set on pedestals. This could indicate an alteration undertaken between the views but it also could simply be a slight inaccuracy in the view. The c.1770s view is partly interesting because it gives a slight glimpse inside the chamber.

There is some delineation in the view of the west wall immediately through the doorway. Today, this wall is flat and relatively featureless and supports a barrel vaulted tunnel through to the main chambers but the image is suggestive of a different arrangement. The image implies that there was a westward recess immediately through the opening, possibly such as an alcove or niche, and presumably there would also have been a similar feature on the east side but this area is not shown in the view. With 'the eye of faith' there appears to be a column shown through the tunnel (probably beneath the front façade of the terrace) with a plinth and some high decoration such as a possible cornice.

- 7.2.5 It is interesting to note that the form of this portico appears very similar to the central opening on Colen Campbell's elevation view although it would have been set further to the south because in Campbell's view the portico is immediately in front of the terrace and without a central staircase.
- 7.2.6 A painting by Hendrik de Cort dated c.1798 (Fig 15) showing the ruined mansion after the 1795 fire provides two small pieces of evidence which may indirectly relate to the Sounding Chamber. One of these pieces of evidence is a rectangular plan opening in the ground floor and a void beneath forming a subterranean chamber which is accessed in the view by a temporary ladder. This void would almost certainly have been immediately east of the Sounding Chamber (where a blocked doorway has been uncovered in the current work) and it could have been an adjoining chamber or stairwell. The c.1798 view does not show any detail within this sunken area but the form of the opening is suggestive of a stair well.
- 7.2.7 The other piece of evidence shown on the c.1798 view is more ambiguous but possibly of significance to the Sounding Chambers. Immediately to the south of the ruinous front wall of the mansion the view shows what appears to be an east-to-west trench in the terrace surface. This would have been immediately outside the front wall of the house and close to where a pair of light wells uncovered in the current project would have reached the surface. This detail of the view is far from clear but it is possible that the view shows an external trench which would have been adjoined by the two light 'funnels' (discussed further below).
- 7.2.8 An early 19th-century proposal drawing (Fig. 16) shows the main entrance to the Sounding Chambers as being similar to that shown on the mid 18th century views. As discussed above this proposal could date from c.1815 although Jackson-Stops provides an indicative date of 1805. This is principally a proposal to rebuild the mansion after the fire of 1795 but its depiction of the South Terrace is thought to be a relatively accurate representation of the structure as it existed. The drawing again shows a wide entrance to the chambers and it is possible to see an inner arched opening within the chamber narrower than the main entrance passage.
- 7.2.9 An inventory from 1849 refers to a music room and due to the position of the entry, adjacent to those on the end chambers (orangeries) of the terrace, it is likely that this refers to the central vaulted room. This use of the central room was confirmed in 1979 when Lord Astor wrote that the *'The large Vaulted Room under the terrace in the centre was called the Music Room'* (Lord Astor, unpublished notes presented to the National Trust. Quoted on page 63 of Hitchmough, 1997). The inventory lists the contents of this room as *'33 green painted garden seats and chairs, 6 ditto stools, 1 cane stool, 5 green painted music stands, 6 green earthenware seats and 72 plants in pots various'* (Bucks Record Office D158/1. Transcript of garden buildings included in Hitchmough, 1997).
- 7.2.10 It could be that the conversion of this area to a music room took place sometime between the fire of 1795 and an auction particulars document of 1818 which refers to the terrace as having been 'lately restored'. However, the use of Cliveden in the mid 18th century for entertaining, particularly by the Prince of Wales, would make the use of this chamber as a music room from

an earlier date highly plausible. The use of this chamber as a music room in the mid 18th century is also suggested by a report in the *Gardener's Chronicle* from 1877 which states that the first ever recital of 'Rule Britannia' was performed in 1740 *'in a chambered vault underneath the dining room at Cliveden'*. It is widely reported that this song was first performed at Cliveden in this year but most references to this do not state exactly where at Cliveden the recital was given. It is possible that the 1877 report is assuming it was in the Sounding Chamber because that's where recitals of this type were given in the 19th century so there must be an element of doubt as to the accuracy of the account.

- 7.2.11 In 1850 Sir Charles Barry constructed the current rusticated portico which surrounds the arched entrance as well as a set of largely glazed doors. These are shown on Barry's proposal elevation as well as a view contained in the *Illustrated Times* from 1866 and other similar later 19th-century views (Fig 20). Barry's doors were replaced in c.1895 by a set of fine decorative iron gates by Singer of Frome.
- 7.2.12 At some point in the first half of the 20th century a fine chimney piece was installed in the north wall of the inner Sounding Chamber having been relocated from Two Temple Place which was William Waldorf Astor's London residence. It is known to have still been at Temple Place in 1928 and 1935 as it is referred to in short guides produced in these years by the Society of Incorporated Accountants who owned the building. It is most likely that the piece was either removed at the outbreak of the war in 1939, when various other architectural fittings were removed from the building for safekeeping, or possibly following bomb damage during the war. In December 1940 a land mine exploded nearby and the library ceiling was ruined so this would be an obvious point to remove such a heavy feature but alternatively it could have been removed following serious bomb damage in July 1944. Rebuilding of Two Temple Place began in 1949 so it is even possible (but unlikely) that it was removed at this point. (information provided to the NT by Barbara Bryant who has written the architectural history of Two Temple Place). The chimney piece was recently removed from the Sounding Chamber at Cliveden prior to the start of the current project but it has been reinstated (2017-18) towards the end of the works.

7.3 Overall Description

- 7.3.1 The Sounding Chambers comprise three main elements:
- the main (or inner) chamber which is located entirely beneath the mansion
 - the central chamber which is beneath the terrace
 - the arched entrance passage from the exterior (south) which is essentially beneath the landing at the top of the terrace staircase;
- 7.3.2 The two chambers are connected to each other by an arched doorway. In 2017 a petrographic survey of the floor in the Sounding Chambers was undertaken and this showed that throughout the chambers the floor was very largely formed from limestones from Devon. Some of these stones can be highly polished and they are frequently called 'marble'. The stone types used suggest that the floor is almost certainly 19th century in date.

7.4 Main Sounding Chamber (D.1)

7.4.1 GENERAL DESCRIPTION

- 7.4.2 The main inner Sounding Chamber (D.1) is beneath the front room of the central part of the mansion and it has a finely constructed, elliptical dome measuring c.9 m from east to west and c.6 m from north to south. The elliptical form of dome is of interest and the *Built Structures Gazetteer* by Rodney Melville & Partners' reports that it is understood that there are no earlier

examples of this rare type of spatial form in the country. The walls of this chamber were plastered but this has recently been roughly removed to reveal relatively consistent brickwork behind that is suggestive of a late 17th or 18th-century date. A bituminous layer was also noted in areas suggesting 20th-century remedial works to combat water ingress.

- 7.4.3 The brickwork is an orange/red colour, laid with lime mortar in a header bond, and 10 courses measures c.74 cm tall. The dome is constructed from concentric converging rings and at the crown there is a patch of brick infill.
- 7.4.4 The plaster included areas of repair, at least some of which were of 20th-century date but the main plaster was softer, older and came off much more easily than the gypsum plaster in the middle chamber. The chamber is believed to have been a relatively high status space from its original construction and it is very likely to have been plastered. The bricks have a white wash on them (beneath the later plaster) and it is believed that this was a whitening which would have formed the base layer of the plaster.
- 7.4.5 The floor in this chamber (see Fig D.1-D2) has a compass design, correctly orientated, and the recent petrographic report by Jefferson Consulting has shown that it is largely constructed from limestones from the Devon area which were largely worked in the 19th century.
- 7.4.6 On the western side of the main chamber there is a doorway to a simple flight of stairs up to what appears to be the kitchen of the mansion (hotel) although this has not been accessed or investigated in the current project. It is clear that this doorway is a secondary insertion from the fact that the jambs have been formed in earlier brickwork and from the nature of the semi-circular arch above which has been crudely cut into standard horizontally coursed brickwork.
- 7.4.7 In the northern part of the room there was until recently a large, carved fireplace which was relocated here by the 2nd Viscount Astor from his estate office in Temple Place London. Hitchmough reports that this was the work of the American sculptor Thomas Waldo Story while the Built Structures Conservation Plan states that it was designed and made by WS Frith in the 1890s. As stated above in the historical background it is most likely that this fireplace was installed at Cliveden in the Second World War. It was removed in 2012. The uppermost layer of gypsum plaster covering the walls abutted the edges of the fireplace and therefore must post-date it
- 7.4.8 The most interesting features revealed during the plaster removal works were: i.) a pair of light wells (or possibly sound funnels) which had been covered over with modern gypsum plaster held on chicken wire and iron bars; ii) a possible doorway in the east wall; iii) the vertical joint in the brickwork in the outermost tunnel relating to the southwards extension when the staircase was constructed.

7.4.9 LIGHT WELLS/SOUND FUNNELS

- 7.4.10 The two possible light wells/sound funnels (Figs D.8-D.13) are remarkable, even dramatic features which form ducts through the vault of the chamber up towards ground level which they reach at a point close to the front wall of the mansion (discussed further below). They are located on the southern side of the dome within the chamber, either side of the central arched opening between the two Sounding Chambers and they are essentially mirror images of each other. Closer bricks confirm that the wells are primary to the overall chamber. They each comprise a large, roughly oval shaped opening (c.1.9 m wide x 2.5 m tall) within the dome surface and behind this the light wells then continue in a southwards direction, away from the main Sounding Chamber and inclined upwards towards the ground surface. The side walls and vaulted head immediately inside the wells are formed from brickwork which is almost certainly primary to the Sounding Chamber (D.1.1) and traces of plaster show that it was historically plastered. Traces of penny-roll pointing to this brickwork have been exposed

beneath the plaster but it is not believed that this pointing indicates that the brickwork was ever intended to be visible. Penny-roll pointing is a decorative touch which often suggests that an area of brickwork was intended to be visible but this is not believed to be the case here. It seems inconceivable that a feature such as this would not have been plastered and it is likely that many good quality bricklayers would automatically finish their work by adding this simple groove whether the face was to be visible or not.

- 7.4.11 The curved base (D.1.2) of each well was also plastered and they were sharply inclined to give the feature the appearance of a funnel-shaped chute. This base is formed from bricks which appear to have been inserted or reformed and there are short straight joints within the walls beneath each well which suggest that they may originally have had squared bases.
- 7.4.12 The upper half of each well has been truncated and reconstructed by later, non-plastered, vaulted brickwork of probable 19th-century date, which continues the sides and vaulted top of each duct slightly higher (D.1.3). The secondary brickwork then continues each well with a horizontal, arch-topped projection (c.1 m long. D.1.4)) that terminates at a vertical wall formed from what appears to have been primary, plastered brickwork (D.1.5). When access was provided into the upper parts of the light wells it could be seen that this old rear wall incorporated a short 0.4 m long return on the inner side (ie the west side of the uppermost projection in the east light well and the east side of the upper projection in the west light well).
- 7.4.13 Within the brick-arched vaulting above each light well there was a small access hatch (c.0.18 m²) and although the hole in the west light well was blocked by slate it was possible to look up through the hole in the east light well into the space above.
- 7.4.14 These holes were each located c.1.5 m to the north of the vertical wall at the rear (innermost) end of each light well and it could be seen that the holes were located at the very southern end of the void (ie a vertical rendered wall extended up from the southern edge of the hole forming the southern end of the void). It is likely that this wall aligns with the inner face of the mansion's elevation above. From this point the void continued northwards for c.2.3 m and the void was c.0.5 m tall, with an arched top. Various service pipes could be seen in the void including a roughly N-S pipe high up and c.20 cm diameter. There also appeared to be at least one rusty cast-iron pipe extending east to west just above the brick vault.
- 7.4.15 It should be noted that there was no real evidence of the tops of the light wells found when the upper surface of the terrace was being dug down although this is probably largely because it appears the main light wells appear to have been beneath the front steps of the mansion.
- 7.4.16 **Interpretation:** When speculating on what the function of these features might have been it seems most likely that they were principally light wells. This chamber would have been a dark space beneath the mansion and light wells such as these would have been a not uncommon feature. The fact that the room was used for music recitals offers the entirely plausible possibility that there was a second deliberate function to allow people on the terrace to also enjoy the music.
- 7.4.17 The reconstruction of the upper parts of the light wells means that it is very difficult to interpret what form the upper parts of the features would originally have taken. Interpreting the features is additionally complicated by the fact that when the wells/funnels were constructed they would have related to a previous house on the site. It is believed that the later houses were constructed on the footings of the original building but it is possible that it was slightly further north or south.
- 7.4.18 On the assumption that the front wall of the original house had the same alignment to the current mansion it appears that the upper ends of the 'light wells' would have been located

immediately outside the line of the house. The vertical brick walls at the very upper end of each light well appear to be primary and their form suggests that there might have been an open trench immediately outside the building (to allow light and/or sound to pass between the Sounding Chamber and the surface) which was then blocked by the later brickwork in the upper sections of the funnels.

- 7.4.19 There is an intriguing feature in the floor shown on Hendrik de Cort's c.1798 view immediately south of the mansion's south elevation which does look like a linear trench exactly where the light wells would have reached the surface. The feature is not detailed enough for us to be able to be certain that it was a trench related to the light wells but it does suggest this possibility. It may be that there were boards which could be placed over the trench to stop rain water pouring down into the Sounding Chamber.

7.4.20 **BLOCKED OPENING IN EAST WALL**

- 7.4.21 The other main feature of interest revealed by the plaster removal was an infilled archway (D.1.8) at the centre of the east side of the main Sounding Chamber (*Pl. D14*). This archway had the appearance of being a blocked doorway, potentially through to another chamber or staircase, but it was initially thought possible that it was instead from a niche or recess for sculptures. This blocked archway was 1.54 m wide by 3.7 m tall from the floor to the highest point of the semi-circular arch. The nature of the brickwork forming the blocked opening confirmed that it was a primary feature with consistent closer bricks to each side of the opening.
- 7.4.22 The arch has been blocked with relatively old brickwork (probably 19th) and there was a patch (c.0.4 m x 0.8 m and 1.5 m above floor) which looked as if it had been infilled more recently. This patch sounded slightly hollow and a small number of bricks were removed from this patch in the current project. The hole created was c.30 x 15 cm and the key evidence that this showed was that the north jamb of the archway returned eastwards in a straight line, for at least 1 m, rather than immediately forming a curve which might have been expected if this was a niche. This appears to confirm that the opening was a doorway through to another space rather than a niche.
- 7.4.23 The area of brick infill through which the small opening was made was c.20 cm thick but as referred to above this was within a distinct hollow sounding patch (c.40 x 80 cm) within the wider bricked-up archway. It appeared that the main brick infill within the arch was c.70 cm thick but this could not be fully investigated. The impression was that the archway had initially been fully infilled with a 70 cm thick wall but that at some point a section of this (c.40 x 80 cm) had been removed to investigate where the archway led and then this patch was bricked up again with a thinner skin (20 cm). On the opposite (east) side of the 0.7 m thick blocking there was loose infill (soil, bricks, debris) which presumably fills the chamber or void which the archway originally led to.
- 7.4.24 Although it could be seen that the northern jamb of the blocked archway continued eastwards for at least 1 m, the end of this face was not reached, and the debris which infilled the main chamber (to the east) abutted and obscured this wall. Some phasing was noted in this jamb however because although the westernmost 25 cm of this wall was clearly primary there was then a vertical line, c.20 cm wide, which appeared truncated or infilled and then the rest of the jamb continued eastwards with a different secondary brick. It may be that if this was the jamb of a doorway then this infilled vertical line could have been from a former doorframe.
- 7.4.25 **Interpretation:** The fact that the northern jamb of this archway could be seen to continue for at least 1 m strongly suggests that it was an opening through to another chamber rather than having been a niche in the side of the Sounding Chamber and it may well be that it led to the

internal staircase which is referred to in 1724 linking the mansion and the subterranean chamber (see historical background).

- 7.4.26 As referred to above the current doorway in the west wall of this chamber, which leads to the staircase is a secondary insertion so a staircase on the east side of the chamber is possible and Hendrik de Cort's painting from c.1798 also tentatively supports this hypothesis. As detailed above this painting shows Cliveden in the aftermath of the 1795 fire and it shows a distinct rectangular (or square) opening in the ground floor leading down to a subterranean area. This void in the floor is clearly part of the building's design rather than an area of collapse and a staircase would be an obvious explanation for such a feature. The painting is believed to have been a relatively accurate representation and the void shown would almost certainly have been immediately east of the inner Sounding Chamber. Indeed it is interesting to note that the painting appears to show a brick lintel in the west wall of this sunken void which could be over a doorway leading into the Sounding Chamber.

7.5 Central chamber (D.2)

- 7.5.1 The southern chamber (D.2) which is located beneath the terrace has a partial oval plan with curved walls forming a domed ceiling and groin vaults to the openings in the north and south sides. This chamber is c.7.1 m wide (E-W) by c.5.7 m long (N-S) and c.5.4 m tall at the crest of the dome. If the northern room was the main Sounding Chamber where musical recitals were given then this chamber may have been an ante-room, possibly with displays of sculptures. The walls are constructed from typical red brick which was covered with plaster although this has been removed in the current project and they have a stone skirting. The plaster in this chamber was a hard cement-based substance which was suggestive of a 20th-century date although there are traces of earlier plaster beneath.
- 7.5.2 At the crown of the dome the brickwork incorporates a circle, c.45 cm diameter, which is infilled with a brick 'plug' (Pl. D15). The mortar within this plug appears the same as elsewhere in the dome so presumably it is original and the dome may have been constructed around a timber key at this point which was removed and infilled once the main dome was constructed. At the centre of this 'plug' is a small hole through the brickwork which may have been from a fixing for a chandelier or other feature.
- 7.5.3 The mortar used in the dome is relatively consistent and it is probably essentially a single-phase structure although there are a number of areas of less regular brickwork, especially around the crest. These areas may just be due to the dome not being a perfect regular geometric shape. The circular key or plug at the crest of the dome is within an oval area where the pattern of the brickwork appears to differ from the main vault but it may just be that it was necessary for the bricklayer to slightly 'fudge' the pattern at the top to make it fit together.
- 7.5.4 The removal of plaster has revealed significant vertical structural cracks towards the centre of the east and west walls following a similar line down from a point just to the south of the crest of the dome towards the ground. The cracks slope gently towards the south and they support other evidence in the terrace which suggests that the structure experienced structural problems such as the front façade starting to come away. The eastern crack is particularly pronounced (up to c.3 cm wide in parts) and this has been partially infilled with a very hard fine grey mortar (Roman cement?) which appears to be the same as that used to repair parts of the fine brickwork to the front of the terrace staircase. This type of mortar was noted behind some of the pilaster brickwork on the west side of the terrace stairs, apparently used to re-apply a facing brick which was not bonded to the main wall behind.

- 7.5.5 The northern wall, dividing this chamber from the main Sounding Chamber, is over 1 m thick and it is directly beneath the main front wall of the mansion. The opening within this wall is c.1.7 m wide and it has a semi-circular arch over it but there is also a shallower arch above this built into the wall, as well as the main semi-circular arch above this which forms the groin vault of the chamber. The shallow, middle arch is the same width as the groin vault (c.3.9 m) and presumably it was a relieving arch to add strength to the wall. The arches all appear to be part of the primary arrangement.
- 7.5.6 To the south side of the middle chamber there is a groin vault and a brick archway over the entrance passage which is 71 cm thick. This is formed from two separate 35 cm thick semi-circular arches, with one overlying the other but with the bricks not bonded together. The character of these bricks are different to those in the corresponding northern wall and they presumably date from when the terrace staircase was added in the early 18th century.
- 7.5.7 Either side of this southern archway there is a pier which projects slightly into the chamber and supports the groin-vault. The coursing in the brickwork in these piers does not match that in the entrance passage to the south, apparently confirming that they are from different dates.
- 7.5.8 Another minor feature noted has been a number of wrought iron nails (pre-20th century) fixed to the walls of this chamber approximately at the height of the arch springs. There are four on the pilasters at the south-east, south-west and north-west corners of the room and also two or three either side of the archway to the south. These may have fixed a timber bearer for a cornice.
- 7.5.9 The floor of this room is formed from Devonian limestone and it has a compound design with octagonal blocks and smaller squares forming inner dabs (or smaller setts) formed from a darker red stone. As mentioned above this is probably of 19th century date.

7.6 Entrance passage at south end (D.3)

- 7.6.1 The arched passage which provides access to the chambers from the outside is constructed from red brickwork, exposed by the removal of plaster in 2012, and is largely located beneath the main staircase. There are clear straight joints (D.3.1) to the side walls of the passage, c.3 m north from the entrance portico, presumably indicating the structural division between the main terrace wall and the secondary staircase. The brickwork is very similar to either side of the straight joints. It is interesting to note that this is the location of the inner archway shown on the early 19th-century proposal drawing and it may be that there were formerly projecting piers to either side partially dividing the entrance passage from the southern Sounding Chamber. As stated above this former narrower arch could have been a survival from the central doorway shown on Colen Campbell's elevation.
- 7.6.2 Although the brickwork in this entrance passage is now exposed it would presumably always have been plastered like the Sounding Chambers. The removal of the plaster allows a close inspection of the brickwork and this shows several structural phases in addition to the two clear straight joints referred to above. Immediately above the brickwork either side of the straight joints is a horizontal band of brick (D.3.2) that continues over the straight joint and must be slightly later than either section beneath. This band is c.7 courses tall and it slightly bulges from the face of the wall in a way that suggests it was later infill to replace a removed feature such as a cornice or possibly a stone frieze.
- 7.6.3 This band is immediately beneath the main brick vault which comprises two arches directly on top of each other. The vault also continues right through the passage, showing that it must also post-date the original terrace wall; it may be contemporary with the c.1720s staircase or could be a later alteration during remedial works.

7.6.4 There is also further evidence of another possible removed feature as in both walls there is a soldier course to the north half of the passage (with slate fillets above) but various infill bricks to the south half of the passage. This may be evidence of a doorframe or small lobby, probably inserted by Barry in c.1850, that formerly subdivided the passage. At the southern ends of the passage the brickwork has been cut back slightly to each side to accommodate the gates installed in 1895.

7.6.5 The floor in the entrance passage is formed from coursed, regularly sized square slabs of limestone with a margin on the east side.

7.6.6 Pit dug in current project

7.6.7 During the current project a trench was dug [*Pit D.100*] along the west side of the entrance passage, extending around the south-western corner of the central chamber, and this revealed part of the footings in this area (*Pl. D6-D7*). Beneath the pilaster at the south-western corner of the central chamber there was found to be a regular flat-faced brick foundation, 56 cm tall (7 courses) and set on a pebbly layer [*Feature D.100.1*]. The bottom of the brickwork was definitely reached in this pit. The angle of this foundation was not quite the same as that of the pilaster above but they appeared to be contemporary with each other.

7.6.8 The foundation of the wall on the west side of the entrance corridor was slightly different to that beneath the pilaster at the south-west corner of the central chamber although they seem contemporaneous with each other. The main foundation at the northern end of the wall [*Feature D.100.2*] had two steps and this returned west to adjoin the flat-faced foundation beneath the pilaster referred to above.

7.6.9 At the southern end of the stepped foundation there was a c.15 cm slot or recess [*Feature D.100.3*] in the foundation of the west wall, c.50 cm to the south of the return at the north end of the passage and c.20 cm below the ground surface. This appeared to be primary and it may relate to a beam across the floor (possibly a sill stone or threshold beam). This southern edge of this slot (*Feature D.100.3*) appeared to line up with the straight joint which continues up the west wall of the passage suggesting that it would have been just inside the original entrance prior to the addition of the staircase.

7.6.10 To the south of the slot the foundation was more obscured by a layer of very hard mortar [*Feature D.100.4*] but there seemed to be a single skin of brickwork apparently in front of the main foundation behind.

7.6.11 Conclusion

7.6.12 The Sounding Chambers beneath the central part of the South Terrace are an important and intriguing part of Cliveden. They are believed to be part of the primary late 17th-century structure and their apparent use, for musical recitals, pleasure and entertaining is a central theme in the history of Cliveden. Although their character is now somewhat diminished or denuded they would have formed elegant spaces probably adorned with decoration and sculptures. A mid 18th-century view provides a distant glimpse inside and this shows hints of decoration such as a column and a possible cornice. The passageway from the southernmost portico also has infill and phasing within its side walls suggestive of features being removed such as a cornice and possible frieze. Twentieth-century plaster has recently been removed from the chambers but evidence of earlier plaster was revealed on the bricks (particularly base layers for plaster).

7.6.13 The interest of the chambers has been considerably enhanced by the recent plaster removal which has revealed two large funnel-shaped openings which connected the main Sounding Chamber to the terrace. These features appear to be part of the primary structure and

although it is believed that they were principally light wells to illuminate the innermost Sounding Chamber, they would presumably also have allowed music to travel up to the terrace. It is believed that the funnels would have reached the terrace at a point immediately in front of the front wall of the mansion. Unfortunately the upper parts of the funnels have been substantially reformed so the historic form of these parts of the structure is not fully known and the lack of clarity is increased by the fact that the 17th-century mansion that the light wells formed part of no longer survives. However, it may be that there was an east to west trench in the terrace, immediately in front of the mansion, and the two light wells connected to this.

- 7.6.14 The internal surfaces of the Sounding Chambers would all have been plastered and limewashed and it is likely that light entering the space from the two light wells, and then reflecting off these surfaces, would have given this room a significantly brighter character than it has today.
- 7.6.15 The plaster removal has also revealed a blocked opening in the east wall which it appears formed an opening to a chamber immediately east of the Sounding Chamber. A painting from c.1798 appears to show evidence of a chamber here and it may be that this was the location of an internal staircase which is mentioned in 1724 connecting the chamber to the mansion above.
- 7.6.16 Another key feature exposed by the render removal has been the clear structural joints between the central chamber and the entrance passage which presumably confirm the fact that the staircase (above the passage) was a secondary addition to the earlier terrace.



Figure D.1 Orthoimage of floor of Sounding Chambers



Figure D.2 Floor of Sounding Chambers with stones marked

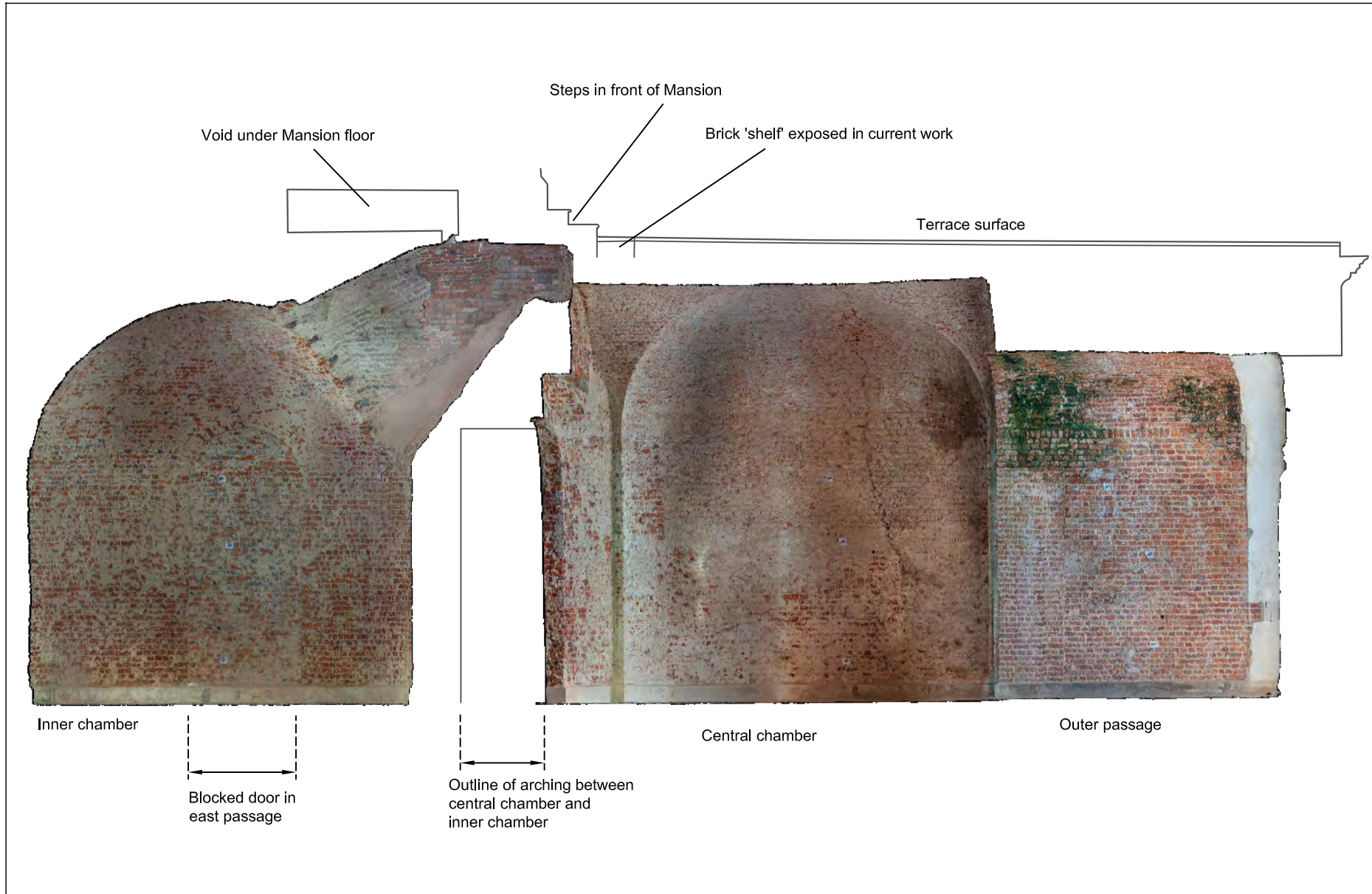


Figure D3: Section through Sounding Chambers looking east (through light-well and central passage)



Plate D.1: Central Sounding Chamber [D.2] looking north prior to plaster removal



Plate D.2: Northwards view from entrance passage [D.3] through towards inner chamber [D.1]



Plate D.3: Vault of central chamber [D.2] after plaster removal, looking north



Plate D.4: Vault of central chamber [D.2] after plaster removal, looking east



Plate D.5: East side of central chamber and entrance passage



Plate D.6: Pit at SW corner of central chamber, looking south [Pit D.100]



Plate D.7: Pit at SW corner of central chamber, looking south-west [Pit D.100]



Plate D.8: Inner Sounding Chamber looking west



Plate D.9: Former light well on western side of Inner Sounding Chamber, looking south-west



Plate D.10: The two former light wells in Inner Sounding Chamber, looking south-east



Plate D.11: Rebuilt brickwork towards top of eastern light well, looking south-east



Plate D.12: Rebuilt brickwork towards top of eastern light well, looking west



Plate D.13: Eastern light well



Plate D.14: Blocked archway [D.1.8] in east wall of Inner Sounding Chamber



Plate D.15: Crown of arch in central chamber

8 BARREL-VAULTED CHAMBERS (AREA E)

8.1 Introduction

- 8.1.1 Towards either end of the terrace, immediately inside from the two fernery water tanks, there are a further pair of barrel-vaulted chambers (one to each side of the terrace) into which further water tanks were inserted at the same time as the fernery tanks (c.1890s). These barrel vaulted chambers are collectively called Area E in the numbering of the current report. These are generally sealed shut but some limited access has been possible into these chambers as part of the current project through openings created in the blind arches at the front.
- 8.1.2 The tanks would clearly have collected rainwater from the main building and the terrace and the water could then have been used for a number of functions including to fight fire in an emergency, to irrigate or water the gardens to the south, to be pumped to other water tanks at Cliveden for a variety of non-drinking uses (flushing WCs etc).

8.2 Historical evidence

- 8.2.1 The barrel vaulted chambers which today accommodate the disused water tanks are within the main body of the terrace known to have been constructed in 1674-7. The plans and elevations in Vitruvius Britannicus (published 1717) do not provide any specific information on these chambers although as detailed elsewhere the drawings do suggest that the front of the whole terrace, including the face of these chambers, had a very different form to that which they have today. The drawings show the front of the terrace as comprising a series of niches.
- 8.2.2 Similarly the proposal drawings for Cliveden from the first quarter of the 18th century (Fig 2-4) also provide no specific information on the chambers and the earliest reference or evidence that may relate specifically to these areas is an entry in an account book from 1747 for a carpenter to enclose 'two great arches for birds'. A detailed view of Cliveden from c.1779 (included in 'The Modern Universal Traveller') shows the two chambers which now house the disused water tanks with gates to the front arches, clearly distinct from the rest of the blind arcade and it has therefore been speculated that these two chambers may have been the 'great arches' which were enclosed in 1747 to be used as aviaries (Fig 13).
- 8.2.3 The blind arcade shown on the c.1779 view is believed to have been constructed in the 1760s or 1770s so it post-dates the construction of the aviaries. A view of 1759 shows these chambers as the same as the rest of the arcade and a view by John Donowell (possibly from 1770s) shows them as blind arches. An early 19th-century proposal view, sometimes attributed to John Nash, also shows the chambers as blind. None of the subsequent views or maps provides evidence on the chambers; there are various views of the terrace from the later 19th century but in this period the front of the structure was largely obscured by thick vegetation.

8.3 Description

- 8.3.1 *General description of both chambers*
- 8.3.2 The two barrel-vaulted water tanks are each orientated north-to-south with a relatively wide, single-vault main chamber, c.3.6 m wide by c.5.3 m long (N-S) beneath the body of the terrace and behind the blind arcading to the front. At the southern end of each chamber there is a narrower arched opening (c.2 m wide) which passes through the 2 m thick front wall of the terrace and this archway is articulated in the visible blind arcading of the terrace. The walls

within each chamber are covered in cement render tanking which is believed to be contemporary with the probably 1890s insertion of water tanks into the fernery chambers.

8.3.3 *West Barrel vaulted chamber (Pl. E1-E8)*

8.3.4 The c.1890s hard tanking render which covers the main walls of the Western Barrel Vaulted Chamber (E.1) obscures the construction behind although it is safe to assume that it is formed from brick. The render extends up to the arch springs of the barrel vault above. The barrel vault itself appears to have been quite substantially rebuilt, possibly as part of the 1890s works although there are surviving historic sections such as the lower third of the eastern side of the vault which is laid in English bond. The top of the vault is 4.84 m above the floor in the chamber.

8.3.5 The upper part of the north wall (above the render) is formed from limewashed brickwork, suggestive of an 18th century date although there is a clear vertical patch of infill in the central area which corresponds to the insertion of a simple metal-rung ladder which has been formed to the centre of this wall (presumably in the 1890s phase) up to a vertical shaft and man-hole hatch which would formerly have allowed access up to the terrace. From the nature of the brickwork around the shaft through the vault it is clear that this was a secondary insertion. The relationship between the vault and the north wall is ambiguous because in parts the vault appears to abut the wall and in other parts the opposite is true.

8.3.6 There is a large sloped buttress against the east wall of the chamber (*Pl. E8*) which is covered in the same tanking render that covers the main walls. At its base this buttress is c.0.64 by 1.1 m and at its top it meets the wall immediately above the tanking line.

8.3.7 In the west wall there is an opening just above the tanking line and although it was not possible to examine this closely it was possible to see the rear face of the brickwork which lines the adjacent fernery water tank.

8.3.8 The chamber includes numerous pipes, at least some of which would have been to carry rain water to this tank from the terrace. This includes two matching ceramic pipes (c.15 cm diameter) in the crest of the vault close to both the north and south ends of the vault and with neat brickwork formed in a circle around the pipe. These appear to extend up for c.0.87 m above the vault, to what appeared to be the underside of a slab (presumably the terrace paving). Frank Ferris (NT Country House technology adviser) visited the site and his short report includes the observation that the West Barrel Vaulted Chamber 'is fitted a syphon overflow outlet to prevent the tank from overflowing with rainwater. It also has a lever operated mechanism at roof level linked to an adjustable valve device in the pipework that can control the outflow of water from the tank'.

8.3.9 The collection of pipes in this chamber also includes the end of a pipe in the west wall just to the north of the opening referred to above and a c.12 cm diameter vertical pipe fixed to the north wall and passing through it just above the line of tanking. This pipe extends down the north wall and then continues horizontally north to south along the length of the chamber and then outside to the south of the terrace. Adjacent to the point where this pipe leaves the chamber there is also another ceramic pipe which also passes out of the chamber.

8.3.10 At the southern end of the chamber there is also a vertical cast-iron pipe (*Pl. E4-E5*) extending down through the brick vault but this terminates just above the tanking line, and close to this there are the remains of what appears to have been the remains of a simple pump or valve. This comprises a vertical cylinder with a piston inside and a lever connected which could be raised or lowered.

8.3.11 At the southern end of the chamber the main vault abuts the northern side of what appears to be a 2 m thick wall [*E.1.1*] and within this wall there is a 1.9 m wide arched opening which

corresponds with the blind arcade visible externally (see Fig E1). This 2 m thick wall is believed to be an 18th-century alteration and a pit which has been dug in the current works against it has confirmed that it is later than the 17th century 'plinth' type wall which has been found in several locations beneath the front of the terrace (detailed further below).

- 8.3.12 The brickwork which blocks the arcade [E.1.2] is a single skin thick and is close to the southern end of this 'archway'. This blocking is later than the 1760s construction of the blind arcade because the two barrel vaulted chambers remained open for a period after the creation of the blind arcade. The blocking here is believed to be of 19th century date (with later alterations).
- 8.3.13 The archway through the 2 m thick wall is also blocked by another separate brick wall [E.1.3] which would have been added in the c.1890s works to support the tanking render and seal this side of the chamber (see Fig E1). This wall [E.1.3] is 40 cm thick to resist the considerable pressure that would be created when the tank was full and the bricks are roughly laid with cement mortar. At each end the older walls that E.1.3 adjoin have been cut back slightly to allow E.1.3 to be recessed slightly. A small hole has been created in this wall to allow access into the chamber.
- 8.3.14 There is a c.40 cm deep void between the 1890s brickwork across the archway and the earlier (1760/70s?) blind arch brickwork [E.1.2] and there is interesting phasing to the brick sides of the archway within this void. To each side, within this narrow void, there is a clear but irregular vertical crack or straight joint and with different types of brickwork to each side. The narrow pier of brickwork to the north of the crack [E.1.4] is formed from small bricks (10 courses measures 0.7 m tall) crudely laid with thick irregular jointing while the similar pier of brick to the outer (south) side of the crack [E.1.5] is also laid with small bricks (again 10 courses measured c.0.7 m tall) but the jointing is neater and there are fragmentary traces of penny-roll pointing to the face. The brick vault appears to be contemporary with the 'inner' brickwork (E.1.4) and the blind-arch blocking abuts the outer brickwork (E.1.5).
- 8.3.15 The evidence is generally similar to both sides of the archway and it is assumed that the cracks, which have been infilled with mortar, relate to the structural issues with the front of the terrace before it was re-fronted in the 1760s or 1770s. The relationship between the two fragments of brickwork is confusing however, partly because the individual bricks in each section are similar to each other although the way they are laid (and the coursing) is not.
- 8.3.16 The most likely interpretation is that the 0.5 m thick outer brickwork (E.1.5) forms part of the 1760/70s refacing of the terrace while the narrow fragments inside this (E.1.4) survive from the primary 17th-century construction. In the voids these appear to be such narrow fragmentary piers sandwiched between the c.1890s brick to the north and the 1760s brick to the south, that it is surprising that they were left in situ but this may be slightly misleading. It is thought that the face of E.1.4 has merely been slightly cut to accommodate the 1890s brick so behind this slight recess the main body of this 1670s (?) brickwork remains more intact.
- 8.3.17 It is assumed that the construction of the 2 m thick south wall continues along the length of the terrace, with the blind arcading at the front, and it is interesting to note that the thickness of this wall would correspond well with the tops of the brick arches which have been exposed on top of the terrace.
- 8.3.18 *Trial pit dug in floor of western barrel-vaulted chamber (E.3).*
- 8.3.19 A 1 m³ pit was dug in the floor of the western barrel vaulted chamber, at the centre of the south wall against the opening which allows a pipe to pass through the wall (see Fig E.1 and C.1). The main feature that this revealed was the same wide, historic red brick wall [E.1.6] which was found in the similar pits in the other water tanks and chambers. The wall was found

- to continue across the full width (N-S) of the pit although it was more truncated than in other pit. Archaeological monitoring was not undertaken during the excavation works themselves but the pit was inspected and the historic red brickwork from E.1.6 could be seen in the western, southern and eastern sides of the pit.
- 8.3.20 There was no evidence for the 17th-century brickwork in the northern side of the pit, suggesting that the northern edge of the wall was also close to this line, but this was not conclusive because there was also no clear northern edge within the east and west sides of the pit.
- 8.3.21 In the east side of the pit the lowest 35 cm was formed from the truncated old 17th-century brickwork (4 courses of soft red brick with soft white mortar laid in thick joints). At the top of the 35cm of brickwork there was a slight ledge from the truncation of brickwork and then above this were six courses of a different brick which forms the face of the base of the pier which continues up to support the semi-circular arch over the entrance to the chamber. This appears to confirm that this wall (E.1.1) post-dates the 17th-century phase. This is rough red brickwork of probable 18th century date. The bricks were c.6 cm tall and the mortar was white but the joints were thinner than those of the older brickwork below.
- 8.3.22 In the south side of the pit the bottom 4-5 courses (35-40 cm) was formed from old brick, largely overlain by yellow stocks (later 19th century?) and with hard render at the surface. The east side of the pit had been heavily truncated by the insertion of what appeared to be a sump (or similar feature) for the two vertical pipes located at this end of the chamber relating to a former pump or valve.
- 8.3.23 *East Barrel vaulted Chamber (Pl. E9-E16)*
- 8.3.24 The East Barrel Vaulted Chamber (E.2) has a similar arrangement to the western chamber although there are various minor differences. The walls of the main chamber are again covered in hard tanking render dating from when the water tank was created here (1890s?) and it is noticeable that there is a shoulder at the top of this tanking suggesting that a skin of brickwork was also probably added when the tanking was formed.
- 8.3.25 At roof level the chamber has a lever operated mechanism connected to a valve device in the pipework that can control the outflow of water from the tank. Some partially buried external pipework was also noted immediately outside the chamber which extended southwards towards the gardens (Ferris, 1995)
- 8.3.26 Again there was a ladder fixed to the north wall up to an access shaft which rose through the vault to a man-hole in the terrace (covered over by later alterations). The whole north wall was covered in render in this chamber (unlike in the western chamber).
- 8.3.27 There is no buttress in the eastern chamber like in the west chamber but there is a small hole in the wall above the tanking line to the adjacent Fernery Water Tank. There are several pipes exiting into this chamber but the distinctive ceramic pipes which are found in the vault of the western chamber (with brickwork formed around the circle) are not found in this chamber. There are also no pipes extending along the floor of the chamber from the north wall to the south wall
- 8.3.28 Slightly less of the vault appears to have been reconstructed than in the western chamber although a large patch on the western side has been rebuilt.
- 8.3.29 The internal face of the 2 m wide wall at the southern end of the chamber is slightly different to that in the west chamber because here it is possible to see a void above the archway through the wall and then there is another arch above this void. This upper arch was 5.17 m above the floor height in the chamber and it is likely that this was one of the brick arches which have been exposed from above during the works on the terrace surface (detailed further

below). It is also worth noting that the internal (north) face of this thick wall retains significant patches of a simple plaster.

- 8.3.30 The arrangement of straight joints in the brickwork to either side of the void immediately behind the blind arcade blocking is similar to that in the West Chamber.

8.4 Summary

- 8.4.1 The current forms of the two barrel-vaulted chambers is believed to largely date from the very late 19th century when the current water tanks were installed and various associated works were undertaken such as the creation of the access hatches and the partial rebuild of the vaults. The southern end of the chambers is more complicated and incorporates various phases of earlier brickwork. However none of it appears to be as early as the 17th century and it is likely that it survives from several phases of 18th-century alteration.
- 8.4.2 The chambers provide valuable evidence relating to the front of the terrace and in particular its apparent reconstruction in the third quarter of the 18th century. These chambers are the one area where it is possible to get behind the blind arcading and to see the c.2 m thick front wall which now forms the front quarter of the terrace (at least in these areas). A test pit which has been dug towards the front of the western chamber has exposed the 17th-century brick footings which formed a great east-to-west plinth on which the original front was constructed and it is clear that the current 2 m thick front wall was a separate construction to this.
- 8.4.3 After their late 19th century conversion the chambers, together with the two fernery water tanks, would have collected rainwater from the terrace and this could then have served several functions. A key function is likely to have been for use in fighting fire in an emergency, particularly considering the two devastating fires which destroyed the previous mansions at Cliveden. The water may also have been used to irrigate the gardens and it may have been pumped to other tanks at Cliveden for non-drinking uses such as flushing WCs and washing. Frank Ferris' short report on the tanks has suggested that in the event of a fire suitable pumping equipment could have been set on the terrace and water suction pipes could have been lowered into the tanks through the manhole covers.

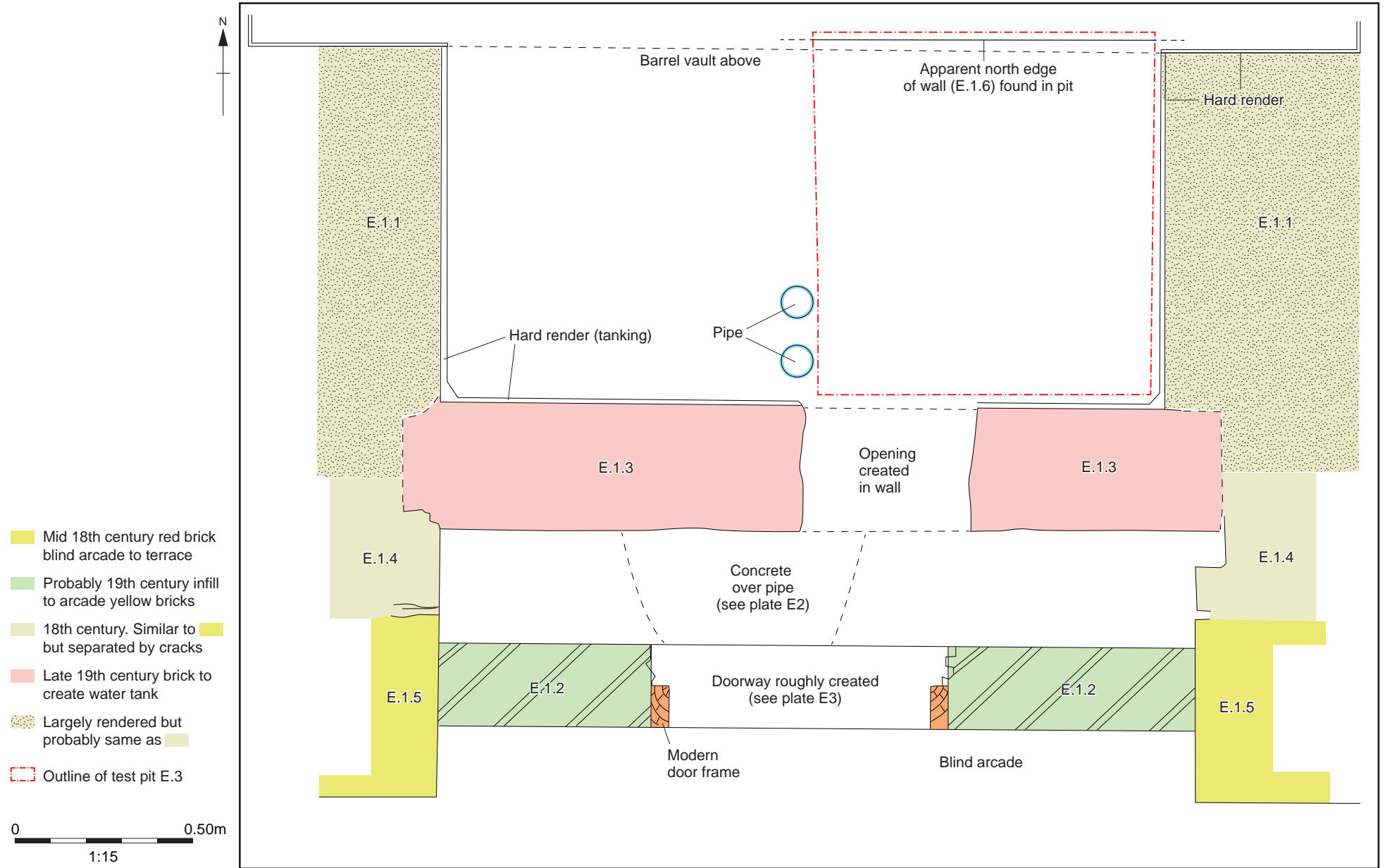


Figure E.1 Plan through blind arcading and opening into West Barrel Vaulted Chamber



Plate E.1: Entrance formed in blind arcade to West Barrel Vaulted Chamber



Plate E.2: Structural cracks in void between blind arcade skin and West Barrel Vaulted Chamber, looking west



Plate E.3: Rear of late 19th-century wall behind blind arcade to West Barrel Vaulted Chamber

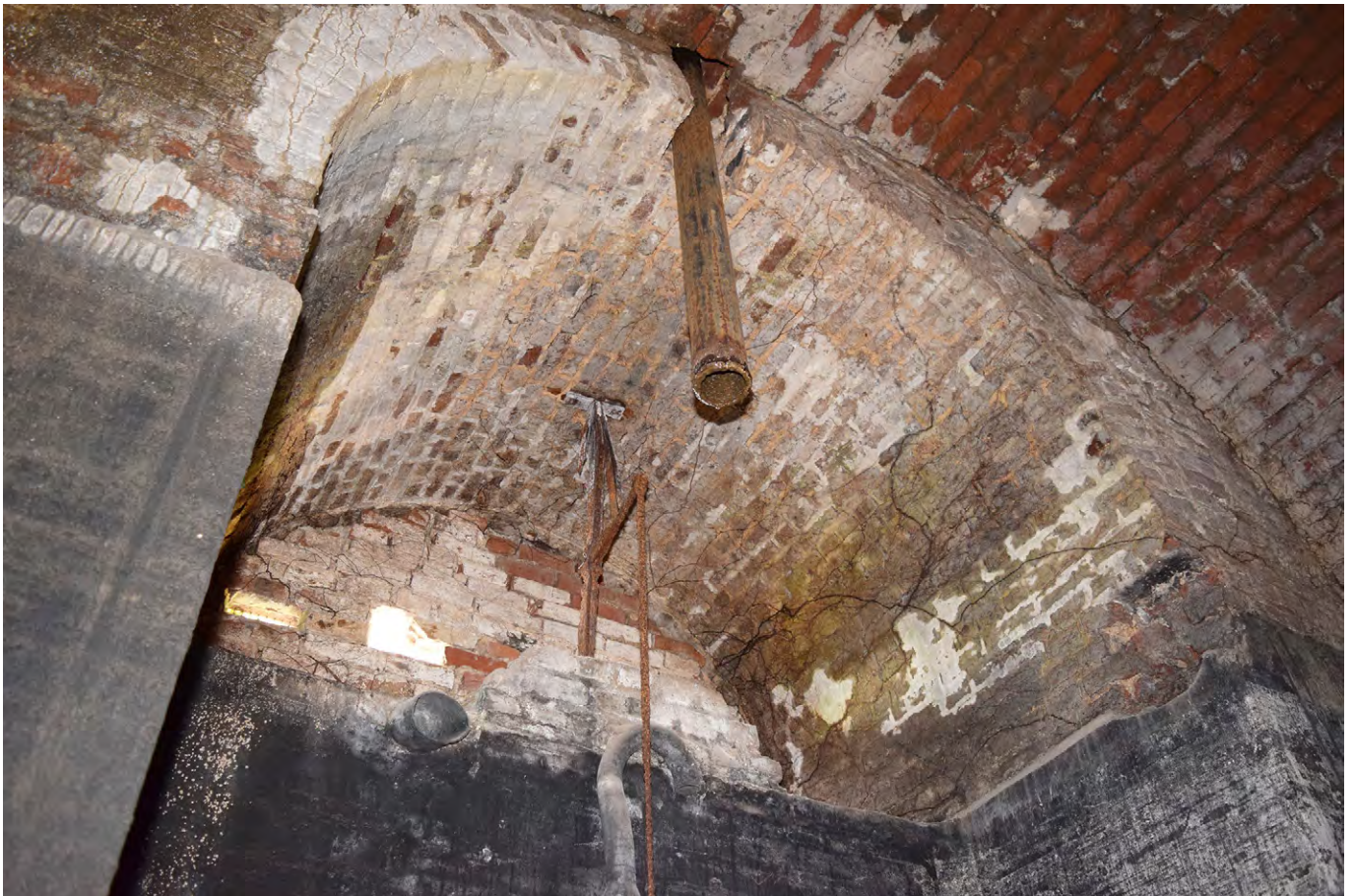


Plate E.4: Southern end of West Barrel Vaulted Chamber



Plate E.5: Southern end of West Barrel Vaulted Chamber



Plate E.6: Looking north in West Barrel Vaulted Chamber



Plate E.7: Southern end of West Barrel Vaulted Chamber



Plate E.8: Buttress in West Barrel Vaulted Chamber, looking north-east



Plate E.9: Entrance formed in blind arcade to East Barrel Vaulted Chamber



Plate E.10: Detail of entrance formed into East Barrel Vault Chamber



Plate E.11: Interior of East Barrel Vaulted Chamber looking south



Plate E.12: Interior of East Barrel Vaulted Chamber looking north



Plate E.13: Interior of East Barrel Vaulted Chamber looking south-east



Plate E.14: Interior of East Barrel Vaulted Chamber looking south-west



Plate E.15: Southern end of East Barrel Vaulted Chamber

9 TERRACE SURFACE AND SUB-STRUCTURE (AREA F)

9.1 Introduction

- 9.1.1 The current surface of the terrace is formed from informal stone paving, with east-to-west drainage channels along each edge, and this paving has been lifted in the current works and relaid with new drainage channels established within. This is Area F in the current report's numbering system. The works involved considerable excavation within the substructure of the entire terrace and it was undertaken in three separate sections: the western section, the eastern section and then the central section. The excavations, which were generally to a depth of c.0.5 m below the terrace surface, exposed numerous features some of which had to be removed and some of which could be left in-situ.
- 9.1.2 The current work has added to our understanding of the terrace substructure which has partly been gained through previous archaeological investigations including a watching brief undertaken by the Oxford Archaeological Unit in 1994 which comprised the opening of a 7 m long trench, with a maximum depth of c.1.25 m, in the terrace surface. This trench would have been located above the Eastern Barrel Vaulted Chamber (Area E.2) and it was sufficiently deep to expose the top of the vault above the chamber. OA also undertook another watching brief in 2002 which included the excavation of a trench on top of the terrace above the sounding chamber.
- 9.1.3 The features exposed in the recent works on top of the terrace are complex and spread over a wide area. The locations of the main features are shown on Figure 28a (west half of terrace) and Figure 28b (east half of terrace) although reference should also be made to Figure 27 which is a plan showing the wider works at Cliveden and Figure F1 which details on of the trial trenches opened towards the western end of the terrace.

9.2 Historical background

- 9.2.1 There is very little documentary evidence relating to the terrace surface prior to the 20th century but Wendy Hitchmough's study reports that there is a photograph of the terrace from 1905 which shows the surface formed from gravel. A photograph in an article from *Country Life* dated 7 December 1912 shows the current informal stone paving. The photograph shows small plants growing in the cracks between paving stones and although these give the appearance of weeds it may be more likely that they are herbs deliberately planted to emit a fragrance when stepped on. A similar arrangement with small plants growing between stones is also shown on a You Tube video, probably from the later 1920s of Lady Astor being interviewed (<https://www.youtube.com/watch?v=jG-IHRS1Mms>).
- 9.2.2 During the 19th century the end chambers that are now known as the Ferneries were used as Orangeries and they were illuminated by lanterns or skylights which projected above the terrace surface. As detailed above in the main historical background it is believed that the end chambers were converted to orangeries at some point between 1838 (date of the Taplow Parish Map still showing steps outside the chambers) and 1847 (when skylights on the terrace surface are referred to). It is believed that the skylights were removed in c.1895 when it is believed that the orangeries were converted to Ferneries.
- 9.2.3 As detailed elsewhere it is believed that when Cliveden was first constructed in the late 17th century there were large enclosed courtyards immediately north of the terrace to either side of the mansion although it is believed that the height of these areas was somewhat lower than that of the terrace. Hendrik de Cort's 1798 view of Cliveden after the fire confirms that at this date the area immediately north of the western end of the terrace (now the West Lawn) was

significantly lower than the terrace and that at this time there was a distinct, northern wall to this part of the terrace with a balustrade to its top.

- 9.2.4 There is understood to be a drawing dating from 1955 which shows the current paving stones being laid (or re-laid) with a concrete slab beneath. OA has not seen the drawing itself although Stephen Castle (NT) has seen it and he refers to it in an email dated 2 February 2015 sent to Lucy Porten.

9.3 Western third of Terrace Surface (F.1)

- 9.3.1 The works to the western third of the terrace surface (*Pl. F1-F15. Fig 28a*) started with the removal of the paving slabs and this showed that they were set on a soil/gravel bedding, below which was a layer of concrete. These upper layers relate to the mid 20th-century phase of repair (1955) to the terrace surface. Along the northern and southern edges of the terrace there were relatively modern drainage channels, possibly also dating from the mid 20th-century works, with rendered lining. The removal of the concrete layer beneath the paving slabs revealed that the western 12 m of the terrace, above the fernery and fernery water tank, was set on seven brick arches orientated east to west while the slightly longer eastern section (as far east as the mansion) comprised a loose fill. We can be confident that the brick arches in the western section are contemporary with the substantial reconstruction of the ferneries in the first half of the 19th century.

9.3.2 BRICK VAULTS IN WESTERN 12 M

- 9.3.3 **Main structure:** The seven brick arches or vaults (F.1.1) which form the main structural support for the terrace surface in the western 12m had an irregular profile with four wider arches (each c.1.25 m wide) alternating with three narrower ones (each 0.7 m wide). The tops of the arches were only c.12 cm below the terrace surface and they were c.15 cm above the lowest points in the valley between arches. The arches had a clear eastern termination which appears to have been on top of the east wall of the fernery water tank, and at this point it was possible to see that the arches were only a single brick skin thick.

- 9.3.4 **Layers on top of the vaults:** A section was recorded through the layers on top of the brick arches towards the north edge of the terrace. This showed that the dips between the arches were filled with bricks, hard core and mortar (c.15 cm layer.) while above this was a dark ash layer (4 cm.); above this was a light compacted fill (2 cm.); above this was a thin layer of concrete (1 cm.); above this was a dark layer of bitumen (3 cm.); above this was another layer of concrete (1 cm.); above this was a screed layer with chippings (2.5 cm.) and above this were the paving stones (8 cm).

- 9.3.5 **Sky light:** The most significant feature revealed within the brick vaults was the blocked outline of a former sky light (F.1.2) which would have illuminated the Orangery (*Pl. F1*). As detailed above the skylight was installed in the first half of the 19th century and it was probably then removed by Lord Astor in the 1890s when the orangery was converted to a Fernery requiring less light. The skylight would have measured 1.46 m (E-W) by 1.4 m (N-S) and the western edge of it was 9 m to the east of the west end of the terrace. Thus it would have been above the fernery water tank.

- 9.3.6 There was no evidence of the glazed top but the four sides of the brick base survived with fine tuck pointing visible to the inner faces of the well. This fine quality brickwork matched that which faces the interiors of the main ferneries. It is interesting to note that a clear layer of white, limewash paint was observed on the inner face of the brickwork forming this skylight. The fine tuck pointing shows that the original surface of this brickwork must have been exposed and unpainted but the paint at this location was clearly added before the blocking of

the skylight when the Orangery was converted to the Fernery. This is partly of interest because it adds to a previous understanding of the historic paint layers in the West Fernery gained from a report by Lisa Oestreicher (Architectural Paint Researcher). As many as nine layers were observed in this report to the columns in the West Fernery, probably dating back to the mid 19th century, but fewer layers were noted to the brickwork in the fernery suggesting that they may only have been added after the 1890s conversion from the orangery. We can now be confident that although the chamber was not originally painted it had been painted prior to the conversion in the 1890s.

- 9.3.7 The top of the brickwork from the skylight base was only c.10 cm below the underside of the paving slabs and a loose stoney fill had been added into the void. As noted in the relevant section above a patch of reformed brickwork was noted in the north-to-south brick arches above the fernery water tank so clearly this loose fill sits on top of this reformed brick arch.
- 9.3.8 **Northern edge of brick vaults:** The northern edge of the brick arches aligned closely with the southern edge of the West Lawn. This area was initially exposed in one of the trial trenches dug on top of the terrace in May 2015 (Trench F.100, see *Pl. F4-5 and Fig 27*) and then much more substantially during the main phase of works in May-June 2017 (see *Pl. F6-F9*). In this area there was found to be an east-to-west rendered drainage channel, possibly of early 20th century date, located towards the southern edge of the lawn. This drain (F.1.3) was set in the dip to the north of the northern brick arch and it comprised a simple channel, 15 cm wide by 10 cm deep and c.20 cm below the grass surface. It was lined with rendered brickwork and had bricks over the top. Small channels fed northwards from the terrace surface into this main east-to-west channel.
- 9.3.9 The removal of this drain in the main phase of works appeared to show that it had been constructed within an earlier, wide V-shaped channel (F.1.15) with a rendered upper face and that at its eastern end this drain fed into a stone-capped channel immediately to the east of the brick vaults (F.1.13). The southern slope of this V-shaped rendered channel was formed by the top of the northern arch while the northern side was formed by a slope set on the truncated upper edge of the terrace's former north wall.
- 9.3.10 The removal of this wide V-shaped channel (F.1.15) exposed part of the upper edge of the terrace's former north wall. It appeared that this wall would have continued south almost as far as the northern edge of the arches (to create a wall c.0.5 m wide) but this southern edge had been truncated to allow for the east-to-west channels along the north side of the terrace. This gave the southern edge of this wall a robbed-out character. The top of this wall had mortar on its upper surface to confirm that the wall formerly continued up. This supports the evidence contained in Hendrik de Cort's 1798 view which shows a solid brick coping wall along the north side of the terrace. In one area the mortar on top of the wall had the trace of a faint rectangular mark which could be interpreted as evidence of a former balustrade on top of the wall. However, the imprint did not appear to be repeated along an east-to-west line and it is therefore considered unlikely that it was from a former balustrade.
- 9.3.11 It was interesting to note at the point where the northernmost brick arch met the 'robbed out' wall that there was a course of sloped bricks set at an angle as if there was another arch to the north. As this was the northern edge of the terrace we can be confident that there was not another arch and that this set of bricks was merely placed at this angle to support the end of the arch to the south. These bricks set at an angle, which were presumably contemporary with the main arched structure, had shallow frogs and their form was suggestive of a date from the first half of the 19th century.
- 9.3.12 The exposed former north face of the terrace itself is described separately below.

9.3.13 TERRACE SUBSTRUCTURE IN AREA TO EAST OF VAULTS

- 9.3.14 To the east of the brick arches above the West Fernery and associated fernery water tank the terrace substructure was quite different being comprised of several layers of loose gravelly fill with various drainage channels and pipes (*Pl. F1*).
- 9.3.15 Immediately beneath the paving slabs there was a layer of bitumen (F.1.4) on top of a mid 20th-century concrete slab (F.1.5) and beneath this was an ochre coloured stoney fill (F.1.6). Beneath this was another distinct deposited layer (F.1.7) which incorporated a lot of charred material. Considering the fires at the house it is worth speculating that this was a layer formed from the charred remains of one of the fires and it was noticeable that it was principally found in the eastern half of this area, close to the mansion.
- 9.3.16 Immediately east of the brick vaults (F.1.1) there was a north-to-south drainage channel (F.1.13) across the terrace with rough stone slabs laid over them and fragments of slate laid over joints to prevent debris falling down into the channels (Fig 28a). There was also another similar channel (F.1.14) which was orientated SW-NE and adjoined F.1.13 at its southern end. One of the pieces used to cover channel F.1.14 was a fine piece of stone with mouldings to both faces. It is assumed that this was recovered from the debris of the 17th-century mansion after the 1795 fire and that it may have been part of a sill (or possibly a column). A fragment of a pink coloured stone which is believed to have been a burnt sandstone was also found in the debris (the corner from a block). These stones support the belief that the main drains on top of the terrace post date the 1795 fire and are largely (or entirely) of 19th century date.
- 9.3.17 In 2014 several trial trenches were dug on top of the terrace to better understand the nature of the structure in advance of preparing the scheme of drainage works. One of these (Trench F.101; *Pl. F2-3. Fig F1*) extended across the full width of the western third of the terrace from close to the balustrade to the West Lawn. This trench was in the area to the east of the brick vaults above the fernery. As detailed above part of the north wall of the terrace was exposed towards the northern end of the trench and a number of other significant features were also exposed towards the southern end relating to the construction of this part of the terrace.
- 9.3.18 The features revealed included the upper face of a brick arch or vault (F.101.1), towards the southern balustrade, orientated east to west and with the uppermost edge being c.0.6 m beneath the terrace surface (See Fig F1). There was a clear northern edge to this vault (1.9 m to the north of the balustrade) and although only c.0.8 m of the vault was exposed it is assumed that it extended further south towards the balustrade. The structure of the vault also incorporated a flat-topped sleeper-type wall (23 cm wide) which formed part of the northern edge of this structure. It is assumed that this was part of a series of similar vaults right along the front of the terrace but they were not fully exposed in this area; it is believed that the tops of the vaults would have been just below the depth of the excavations in the main 2016 drainage works. The tops of a series of such vaults were exposed in the eastern part of the terrace (detailed further below). It was interesting to note a number cracks in the top of this vault which could be indicative of structural issues which resulted in the front wall of the terrace being rebuilt and it was also interesting to note that the vault was covered with a layer of clay puddling to prevent water draining through the terrace.
- 9.3.19 Immediately to the north of the vault (F.101.1) a brick-lined drain (F.101.2) was exposed which could be seen to extend east-to-west along the terrace. The cavity for this drain was c.12 cm by 12 cm and it was set on what appeared to be a limecrete base. The sides and top of the drain were formed from orange/red bricks (23 x 11 x 6 cm) with a non-rendered face and their character was suggestive of being of an 18th-century date. This drain also incorporated a

contemporary N-S branch which sloped down towards the north, carrying water away from the front of the terrace.

9.3.20 A section of another broadly north-to-south brick drain (F.101.3) was exposed to the west of drain F.101.2, again draining northwards away from the front of the terrace. The construction of drain F.101.3 was similar to F.101.2 but the inner sides of the culvert were covered in a hard render and it is believed that this drain was slightly later than F.101.2. Various size bricks were used to form F.101.3 but those on the top of the drain measured 22.5 x 11 x 6.5 cm and it appeared that at the southern end drain F.101.3 was constructed over F.101.2 (although this area was not fully exposed).

9.3.21 FORMER NORTH FACE OF TERRACE

9.3.22 As discussed elsewhere it is known from documentary sources, particularly the c.1798 view of Cliveden painted by Hendrik de Cort, that the ground level immediately to the north of the western part of the terrace was significantly lower than that of the terrace itself and that therefore there was historically a north face to this part of the terrace.

9.3.23 Several trenches were dug which exposed parts of this northern face including an east-to-west trench immediately north of the terrace which exposed much of the north face of this wall (most clearly in the western section adjacent to the brick-vaulted substructure). As this trench was technically in the area of the West Lawn (Area I) it is numbered Trench I.106 (see *Pl. F6*). The north face of the wall (F.1.8) was well preserved and it was exposed to a maximum of c.0.75 m below the current top of the wall (c.10 courses) and c.1m below the terrace surface. The brickwork in the wall had a relatively rough character and it was formed from soft red bricks which would be consistent with a later 17th century date although there was considerable variety in the sizes of the bricks. The face of the wall was slightly battered.

9.3.24 Various features of interest were noted in the northern face of the wall including three simple sloped brick buttresses c.90 cm wide (F.1.9). The best preserved of these buttresses was previously found in one of the trial trenches opened in September 2014 (Trench F.101. See Fig F1) and this buttress was located c.19.5 m to the east of the western balustrade (*Pl. F10*). The top of this buttress had been truncated along with the top of the adjacent wall but from the angle of the slope it probably continued up for a further 3 courses (c.22 cm). The base of the buttresses was not reached in the excavation. During the main terrace works in May-June 2016 a further similar buttress was exposed (*Pl. F8*) at 12.55 m to the east of the west balustrade although this had been damaged during the excavation works and another similar feature was found at the western end (*Pl. F11*) almost immediately adjacent to the west balustrade. These buttresses were keyed into the main wall and they all appeared to be of the same phase. It is interesting to note that the spacing of the three buttresses would suggest that there may have been formerly been a further buttress approximately six metres to the east of the west balustrade. There was no clear evidence of a former buttress here although this was the location of a semi-circular structure (F.1.10. *Pl. F7, F9, F12*) within the trench (relating to the windows inside the Fernery) and therefore it is possible that the buttress here was removed.

9.3.25 The semi-circular structure (F.1.10) was one of two matching features exposed in this trench and their locations matches the locations of two of the windows within the north wall inside the fernery (centred on c.6.3 m and 10.6 m from the centre of the west balustrade). They were c.1.45 m wide and their tops were c.70 cm below the current tops of the wall (c.90 cm below terrace surface); therefore they were only just exposed in the current excavations. One of the test pits opened in May 2015 (Trench F.100) did however expose slightly more of the side of one of these features.

- 9.3.26 They were constructed from brick (apparently header bond), with a hard-render top, and it was of good quality brickwork. It is assumed that they were formed in the mid or later 19th century when the area between the terrace and the pavilion (ie the West Lawn) was raised. This would have blocked the three windows in this wall and thus it appears that rather than simply blocking the opening in the wall it was decided to create these blocking enclosures. It may be that these were originally open topped to allow some continued illumination into the fernery through the windows. The infill deposited against the north side of the enclosure in Trench F.100 was found to be relatively consistent brown clay loam. Below c.70 cm the fill was more pebbly/flinty but there was no clear horizon between the layers.
- 9.3.27 Another feature exposed in the trench immediately north of the wall which provides evidence relating to the former ground level in this area was a conventional rainwater downpipe hopper (F.1.11) fixed to the wall c.5.05 m to the east of the west balustrade (*Pl. F12*). The upper edge of this semi-circular hopper was 60 cm below the current wall top (c.85 cm below the terrace surface) and it was immediately beneath an opening in the north wall. This opening would presumably have connected to a former drain in the terrace surface but this would have been removed when the ground immediately to the north was raised in the 19th century. It could be seen that the hopper fed into a conventional downpipe which would have continued down the north wall although this was not exposed in the current project. A small stone slab had been placed over the hopper head to stop detritus falling down into the downpipe. The hopper head provides valuable evidence to confirm that the former ground level immediately north of the terrace was considerably lower than today.
- 9.3.28 Towards the eastern end of this area there was another small (c.0.3 m tall x 0.15 m wide) rectangular opening (F.1.12) in the wall at the same height as the hopper (F.1.11) which would also have clearly formed a drain from a channel within the terrace to the outer wall. This opening (F.1.12) was immediately to the west of the easternmost of the three buttresses (F.1.9) and it had a sloped rendered channel within it. There was no surviving drainage hopper beneath it but there was the imprint of a larger former feature (c.0.6 m wide x 0.45 m tall) around the opening so there may formerly have been a larger hopper around this (*Pl. F8*).
- 9.3.29 The west end of the trench immediately north of the terrace exposed the brickwork beneath the balustrade to the west of the West Lawn. This wall was formed from yellow stock bricks suggestive of a 19th-century date and they were clearly very different to the earlier red bricks that formed the north retaining wall of the terrace.
- 9.3.30 The north face of the wall (F.1.16) was less clearly exposed in the works immediately north of the terrace to the east of the brick-vaulted substructure but some fragmentary features were observed.
- 9.3.31 The southern edge of the top of this wall had again been cut back, apparently to allow for former drainage channels. The drainage channels had largely previously been removed from here which left what appeared to be a primary wall (17th century) with a robbed-out face. This wall was constructed with soft red bricks laid in a Flemish bond and with relatively thick joints formed with a light coloured lime mortar.
- 9.3.32 At a point 1.5m to the east of the edge of the brick arches over the fernery there was a substantial iron pin driven vertically down into the wall and with c.20 cm visible of its length. Its diameter was c.3 cm and c.5 cm at the head.
- 9.3.33 The remains of a former 20th century drainage feature (possibly truncated remains of a man hole) was observed cutting through the north wall of the terrace at c.2.9 m to the east of the arches above the fernery. This feature was 1.35 m wide but only the southern edge of it was visible.

- 9.3.34 Towards the eastern part of this area (ie between c.6 m and c.2m to the west of the edge of the lawn) a gully/channel (F.1.17) was observed immediately south of the cut-back wall. The gully was c.25 cm tall x 22 cm wide and it had a slightly arched brick cap over it. The walls of the channel were all rendered and the north edge of the arch was supported on a single skin brick wall that was not bonded into the cut-back wall [F.1.16]. The bricks forming the gully did not have frogs and their character suggested that they were old (pre-19th century). The mortar was also soft and lime based. At a point c.4.4 m to the west of the eastern edge of the lawn a vertical drain was observed in this area with rendered faces to carry rain water down into this gully (F.1.17). This would have been within the main wall and it would have collected water from the northern edge of the terrace.
- 9.3.35 Drainage works just to the west of the south-western corner of the mansion also exposed a small part of the north wall of the terrace here (*Pl. F13-15*). The north face of the terrace wall in this area was 1.4 m to the north of the current front wall of the mansion and it was constructed of red brick with a similar character to that exposed in this wall further to the west. The south side of this wall was not exposed.

9.4 Central part of terrace in front of mansion (F.2)

- 9.4.1 Similarly extensive works have been undertaken to the central part of the terrace immediately in front of the mansion including removing all the paving slabs and excavating the terrace substructure to allow new drainage to be installed (*Pl. F16-F52, Figs 27a-27b*). Describing the features exposed over this large area in a coherent manner is difficult because the description can either be broken down into different areas or into different features which extend over a large area. In the current section of the report the latter approach has been adopted with separate sections for features that extend over a large area.
- 9.4.2 **Upper layers of terrace substructure:** The removal of the paving slabs confirmed that they were set on a sand/gravel bedding layer and beneath this was bitumen set on a thin layer of concrete. Below this was an extensive, light brown coloured, loose fill made up of stones of various sizes and sand. This layer was deposited around various drainage features and areas of clay puddling.
- 9.4.3 **East-to-west wall to rear of 'niches':** Among the most interesting and consistent features revealed was the top of an east-to-west wall (F.2.1, *Figs 28a-28b*) which it is believed continued along almost the full length of the terrace, together with associated brick vaults immediately to the south extending towards the balustrade (*Pl. F41-42*). These features correspond with the vault (F.101.1) exposed in the trial trench in the western third of the terrace. This 'sleeper' wall was 35 cm wide and the south side of this wall was c.1.5 m to the north of the northern edge of the balustrade along the terrace. The northern edge of this wall was therefore 1.85 m to the north of this line. Parts of this wall had traces of mortar to its top suggesting it was formerly taller and although its depth varied slightly between different areas it was generally c.0.5 m below the terrace surface. The bricks measured c.6.5 cm tall x 23 cm x 10.75 cm, they did not have frogs and they were laid with a relatively soft lime mortar. Their character strongly suggested a pre 19th century date but it was not possible to be confident as to whether they dated from the later 17th century or from various phases of 18th-century alterations.
- 9.4.4 On the southern side of this wall a series of brick arch vaults were partially exposed in the works and again it is assumed that these vaults continued along much of the terrace. These vaults were contemporary with the adjoining east-to-west wall (F.2.1) and they continued southwards right up to the wall beneath the terrace balustrade. The top of each vault was slightly below the top of the adjacent east-to-west wall (c.54 cm below the terrace surface where measured towards the east of the mansion) and in each dip between the vaults there

was a flat brick surface formed at a point c.74 cm beneath the surface (ie 20 cm below the top of the vaults). The vaults were spaced c.3 m apart (centre to centre) with the flat surfaces and the curved vaults being of similar width to each other (c.1.5 m wide). The height of the tops of the vaults were generally slightly below the level of the main excavations in the current project so none of them were fully exposed but small areas were exposed by hand to confirm their presence.

- 9.4.5 The area of the terrace where the vaults and wall were most exposed was in front of the eastern half of the mansion (to the east of the top of the staircase). Seven vaults were exposed in this area and the spacing of these broadly aligned with the arches in the blind arcade forming the front of the terrace as well as each section of the balustrade above (Pl. F41). The crest of the westernmost of these seven arches was c.3.5 m to the east of the north-east corner of the staircase landing (measured from the end pier of the balustrade). Six further arch crests were then identified to the east, located approximately every 3 m up to a point 21.75 m from the west end of this section of the balustrade (by the stair landing). There did not appear to be a further vault immediately to the west, adjacent to the staircase landing. It is interesting to note that the two westernmost arches were behind the upper parts of the staircase where any possible blind arches would be hidden.
- 9.4.6 The wall and associated vaults were less exposed in the area in front of the western half of the mansion but the ground was reduced in small patches to confirm that at least four vaults survived here too. These were aligned with the 3rd, 4th, 5th and 6th full sections of the balustrade in this area. There also appeared to be the trace of a further vault in the 1st full section of balustrade to the west of the staircase but this was only a trace and there was no clear evidence in the adjacent area aligned with the 2nd section of the balustrade. Although relatively little of this part of the terrace substructure was exposed it appeared that more extensive rebuilding works had been undertaken here than to the east of the staircase and that at least part of the vaulting had been removed.
- 9.4.7 The arches and east-to-west wall were covered by a distinct band of puddling clay towards the front of the terrace, extending northwards for c.1.6 m from the centre of the southern balustrade, to either side of the mansion. The top of this layer was c.0.4 m below the terrace surface and it was clearly designed to carry rain water northwards away from the front of the terrace. This strongly appeared to relate to the east-west wall and vaults because in the areas closely examined the clay appeared to end immediately north of the east-to-west wall; north of this there was loose fill.
- 9.4.8 As outlined above part of one vault and a short section of the associated wall were also exposed in the trial trench opened on top of the terrace to the west of the mansion (Area F1. See Pl. F2-F3 & Fig F7). This was adjacent to the 7th arch in the blind arcade to the west side. The arch here had a substantial structural crack which it has been suggested could relate to the need to rebuild the front wall of the terrace in the second half of the 18th century. There was no sign of similar structural issues in the other vaults exposed in Area F2 although this may be because these vaults were not fully exposed. The main excavation works in this area to the western third of the terrace (F1) did not expose any more of these vaults but that is assumed to be because the excavation was not deep enough. Similarly the excavations in the eastern third of the terrace also did not reveal the vaults but this is assumed to be because the excavations were not sufficiently deep.
- 9.4.9 The wall was found to be truncated in several areas to allow for later brick culverts to run over or through it (detailed further below).

- 9.4.10 **Central projecting wall:** Towards the centre of the terrace, above the Sounding Chamber, the east-to-west wall (F.2.1) stepped forward by c.0.9 m towards the staircase landing (*Pl. F32-35*). The bricks in this section of wall (F.2.2) that stepped southwards were very similar to those in the main east-to-west wall (F.2.1) and it is assumed that the two walls were contemporary with each other. This projection took the wall to c.0.5 m from the pier at the north-east corner of the staircase landing and it may be that it marks the point where original terrace stepped forward slightly at the central doorway prior to the construction of the staircase in the early 18th century. This would appear to corroborate the evidence of the elevation contained in Vitruvius Britannicus. There strongly appeared to be a structural break between this stepped forward wall (F.2.2) and the landing structure above the staircase (discussed further below). This supports the possibility that the wall is a primary part of the 17th century structure because it is believed that the staircase was added in the early 18th century. It is also worth noting that 2-3 courses of the south face of this wall was exposed and this was relatively good quality brickwork; it was not fine-jointed brickwork but there was no 'snotting' to the mortar which may have been the case if the wall had been constructed against an existing structure. It should also be noted that the junction between these walls appears to correspond with the break in the Sounding Chambers below between the central chamber and the entrance 'tunnel' beneath the staircase.
- 9.4.11 The upper face of this stepped-forward wall showed evidence of repairs, in particular a 1.2 m long patch of reformed brickwork and at the west end this wall was hidden and buried within the layer of clay.
- 9.4.12 **Clay puddling bands:** As discussed elsewhere the terrace incorporated a c.1.6 m wide band of puddling clay towards the front (south) of the structure to carry water northwards and possibly to protect the former niches below. This band was found in the eastern and western thirds of the structure (Areas F1, F3), inside from the ferneries, and it continued in front of the mansion in Area F2. The clay band had a distinct northern edge, aligned with the vaults and wall (F.2.1) described above and immediately beyond this to the north was loose fill. Towards the centre of the terrace, over the Sounding Chambers, the layer of clay continued across the full width of the terrace (*Pl. F18*).
- 9.4.13 **Cast-iron pipes:** On top of the main east-to-west clay bands there were cast-iron pipes (F.2.3) which would have carried rain water east and west away from the centre of the terrace (*Pl. F22-24*). The pipe was 12 cm in diameter and it was formed from 1.9 m long interlocking sections. The innermost ends of these pipes were c.8.5 m to either side of the central line of the terrace and they incorporated an upward kink suggesting that close to these points they may once have connected to a grille or similar feature in the terrace surface (*Pl. F23*). These connections had been lost prior to the current project. It is assumed that these pipes would have carried water to the fernery water tanks (although this link was not observed) and their form would support the possibility that they were added in the late 19th century when the fernery water tanks were created.
- 9.4.14 **Landing at top of stairs:** the excavation of the landing at the top of the stairs, above the entrance tunnel into the Sounding Chambers, confirmed that this area had a substructure comprised of four brick-arched vaults (F.2.4) orientated east to west (*Pl. F36*). This area had previously been partially exposed by OA during a watching brief in 2002. The central line of the vaults were spaced c.0.9 m apart and the tops of the vaults were c.0.3 m below the terrace surface. The vaults had a slight camber to east and west, presumably to help carry rain water away from the central line. Only the upper part of each vault was visible because the valley between each had been built up slightly with a layer of bricks to create a c.35 cm wide flat surface. The eastern and western ends of the vaults were not exposed in the works and they remained hidden beneath a brick ledge at the top of each flight of stairs.

- 9.4.15 **Iron tie-bars:** three wrought iron tie-bars were uncovered which it appears would have extended north-to-south along the central line of the terrace, above the centre of the Sounding Chambers and c.20 cm beneath the terrace surface (Pl. F38-40). However, it appears that these bars had long ceased to be used in their original function and only the northern bar was fully in-situ. The bars were c.1.6-1.7 m in length and although their central section was c.5 cm² in section they tapered towards each end. The southernmost tie-bar (over the entrance to the Sounding Chamber) is believed to have not been in situ and just dumped within the fill beneath the terrace surface (although this was not observed). The central bar was heavily corroded and wrenched to a skew angle and then snapped to its end. These bars both had large eyes at their ends and the bar was twisted so that the eyes were orientated at 90 degrees to each other.
- 9.4.16 It is most likely that these bars were secondary additions, inserted to counter the outward thrust of the front of the blind arcade. It is possible that they were part of the original construction but the nature of this type of tie-bar is much more suggestive of a 19th-century date than one from the 1670s and this is also suggested by the substantial nature of the bars at Cliveden.
- 9.4.17 In addition, immediately to the south of the wall [F.2.2], at the very centre of the terrace, there was a triangular shaped stone block (Pl. F35) set in very hard mortar and the form of this was suggestive of it possibly having been the anchor at the southern end of a tie-bar extending north towards the house. This stone was 2.65m to the south of the upstanding end of the in-situ tie-bar but the existing bars were 1.65 m long so the sizes did not match. It may be that there was a previous tie bar in this location and there was a faint north-to-south imprint on top of the vault which could be evidence of a former tie.
- 9.4.18 **Brick 'shelf' beneath front steps to mansion:** The excavation works exposed a brick 'shelf' (F.2.5) c.10.3 m long beneath and in front of the central four bays of the mansion. This shelf was immediately in front of the two steps at the front of the house and it was constructed from plum colour bricks (7 cm x 22.5 x 10.5 cm) laid with a relatively hard lime mortar in English bond (Pl. F47-54). There was mortar to the upper surface of the shelf to suggest that it was formerly taller. The character of the bricks was suggestive of a later 18th or 19th century date and the fact that the shelf aligned neatly with the column plinths from Charles Barry's 1850 mansion suggest that the shelf is most likely to have been part of the mid 19th-century works. It was clear from the rough nature of the brickwork (with squeezed mortar) that the face was not intended to be visible.
- 9.4.19 The top of the shelf was c.17 cm below the terrace surface (immediately beneath the paving slabs) and the main features of note within this upper face were four, evenly spaced shallow recesses (Pl. F52). These recesses were c.8 cm deep by c.25 cm² and they appeared to have been secondary alterations, crudely formed into the top of the shelf, rather than primary features. It is possible that these each housed a shallow drainage channel to carry rain water down from the terrace surface into one of the drains below. The spacing of these recesses appeared to correspond with a drain immediately adjacent to the south (discussed further below).
- 9.4.20 It may be that the purpose of this shelf relates to the two light wells/funnels which extend up towards the ground surface here from the inner Sounding Chamber. From the measurements taken it strongly appears that the upper ends of the light wells/funnels would have been to the north of this shelf and slightly below it. It seems most probable that the shelf was intended to seal the ends of the funnels once they had ceased to be used.

9.4.21 **Network of drains:** The excavation of the terrace exposed a complex series of culverts and largely brick-lined drains most of which are believed to have been secondary additions rather than primary 17th-century features. These are constructed from bricks which were generally suggestive of a 19th century date (although with some older ones reused) and most had a hard dark grey lining. They are believed to have been largely from the same phase, with relatively minor later repairs and alterations. The main distinction was that most drains had brick capping but some had stones (eg reused paving) over the top.

9.4.22 Those that were observed are summarised in the table below although as the watching brief was intermittent rather than permanent during the works there are likely to have been other drains or sections of these drains which were not observed.

Drains exposed in central part of terrace in front of mansion.	
Drain 1 (F.2.6)	Brick culvert orientated south to north and located c.6m to the west of the western pier at the top of the staircase. Rainwater drained into here from a shallow channel immediately inside the balustrade and then Drain 1 took the water northwards for c.4 m before connecting with an east-west drain. At this junction there was a small brick structure (15 cm ²) that may have been an access chamber or it may have had a grille in the surface to allow water to drain down directly to this junction. This structure appeared to be a secondary insertion. The bricks that cap this drain have shallow frogs and they look 19 th century in character. The sides and base of the drain had a hard dark grey/brown render lining. This drain marked a division between the clay puddling to the east and loose fill (loose bricks, stones, mortar ochre stones etc) to the west.
Drain 2 (F.2.7)	North-to-south brick lined culvert which took rain water from the shallow channel alongside the terrace balustrade to west of centre. It was located 11.4 m to the west of the staircase's NW pier and at its north end it returns westwards and connects with Drain 4. The brick coping had been removed towards the south, presumably because here they would have been close to the surface and 20 th -century re-paving works removed them.
Drain 3 (F.2.8)	Similar to drains 1 and 2. It was also orientated north-to-south and carried rain water southwards from the shallow channel along the balustrade. At its north end it connected with Drain 4.
Drain 4 (F.2.9)	This was an east-to-west drain 2.4 m to the north of the southern balustrade and located to the west of the centre of the terrace. It connected Drains 2 and 3 but it was not clear where Drain 4 fed into. Drain 4 was at a lower level than Drains 1-3 so relatively little of it was exposed and only a partial outline was visible at the surface.
Drain 5 (F.2.10)	Shallow east-to-west channel immediately inside the western half of the southern balustrade. It was 15 cm wide and it appeared to be constructed from tile packing lined with render. The channel had a series of shallow slopes and troughs to allow the water to flow into various adjoining northward channels.
Drain 6 (F.2.11)	North-to-south aligned brick-lined drain located towards the front of the mansion and aligned with Drain 1 to the south. Capped with stone blocks (probably some reused paving slabs). This drained into the main east-to-west spine channel (Drain 10).
Drain 7 (F.2.12)	North to south culvert to east of centre of terrace, draining northwards away from the shallow channel along the southern edge of the terrace. The bricks used to construct the channel have frogs and they are suggestive of a 19 th -century date.
Drain 8 (F.2.13)	Drain located in front of the mansion, just to the east of the centre and towards the front of the terrace. It was constructed from brick and with a hard render to the sides. It was constructed over and partially truncated the main spine wall [F.2.1] which ran east-west towards the front of the terrace. This sloped down towards the north, into the main spine drain (Drain 10) and at its southern end it curved towards the west to link with Drain 15 on the landing at the top of the staircase.
Drain 9 (F.2.14)	Similar to Drain 8. This is also located towards the front of the terrace and at its southern end it curves around towards the east which it presumably connected to a former drain at the terrace surface. This was constructed from bricks to the sides and over the top although those over the top had been largely removed (partially towards the south).

<p>Drain 10 (F.2.15)</p>	<p>Long culvert orientated east to west along the terrace. This appears to have acted as a main spine drain with various smaller north-to-south drains feeding into it and then it carrying water westwards. The drain slopes down towards the west.</p> <p>The opening of this drain is 27 cm wide x 22 cm tall (larger than the other drains) and it is constructed from bricks with a stone cap. The stone capping largely remained in-situ so the channel was obscured but it could be seen to be lined with a hard render. Various types appeared to have been used in the culvert but their form was suggestive of being 19th century in date.</p> <p>It is believed that this culvert is also part of the same system of drainage (probably inserted in 19th-century) as the other brick capped culverts.</p> <p>At its east end this curves around to link with Drain 12.</p>
<p>Drain 11 (F.2.16)</p>	<p>Short branch trench extending northwards from the spine drain (Drain 10). Also aligned with Drain 8. Constructed with brick walls and stones over the top. It is assumed that it drained southwards into Drain 10 but the stone capping remained in-situ obscuring the channel.</p>
<p>Drain 12 (F.2.17)</p>	<p>Short north-to-south drain located close to the mansion which would have carried water southwards from Drain 13 (against the house) towards the spine drain (Drain 10). Constructed with brick sides and a stone top but the stones largely remained in-situ and obscuring the inner channel. It could be seen however that the channel was lined in hard dark grey render. This drain marked the point between the loose fill to the east with the clay puddling to the west over the central chambers.</p>
<p>Drain 13 (F.2.18)</p>	<p>Drain located immediately in front of the 'shelf' adjacent to the front steps of the mansion and to the east of Drain 19. Drain 13 appeared to have been a secondary extension of Drain 19 and it would have been fed by it.</p> <p>This drained eastwards away from the central line of the terrace and its east end aligned exactly with the edge of the 'shelf'. The drain had stone capping pieces along its top and some of these appeared to be reused sections of paving slabs.</p>
<p>Drain 14 (F.2.19)</p>	<p>Drain located immediately in front of the 'shelf' adjacent to the front steps of the mansion. This drained westwards away from the central line of the terrace and its east end aligned exactly with the edge of the 'shelf'. The top of this drain was capped in stone blocks and it had a hard rendered inner lining.</p>
<p>Drain 15 (F.2.20)</p>	<p>Simple shallow gully at the top of the staircase on the east side of the landing immediately adjacent to the top step. Only the outline of the drain survived and it was filled with a dark substance. This is believed to have been a bitumen deliberately used here to seal the surface rather than an ashy residue from the fire. The channel was 10 cm wide and it appeared to be formed within stone blocks. It drained towards the north.</p>
<p>Drain 16 (F.2.21)</p>	<p>Simple shallow gully at the top of the staircase on the west side of the landing immediately adjacent to the top step. Only the outline of the drain survived and it was filled with a dark substance. This is believed to have been a bitumen deliberately used here to seal the surface rather than an ashy residue from the fire. The channel was 10 cm wide and it appeared to be formed within stone blocks. It drained towards the north.</p>
<p>Drain 17 (F.2.22)</p>	<p>North-to-South brick culvert extending northwards from the channel alongside the south balustrade, to the east of the centre of the terrace. It was located 17.3 m to the east of the pier at the top of the stairs. Bricks to top of culvert with frogs and suggestive of 19th-century date. Only a small section of the top of this culvert was exposed.</p>
<p>Drain 18 (F.2.23)</p>	<p>North-to-south culvert exposed aligned with a point c.3 m to the east of the mansion. The channel is constructed with brick and lined with a hard dark grey cement render and it has bricks over the top. It partially truncates and passes over the long east-west wall associated with the vaults at the front of the terrace [F.2.1]. A section of the drain was observed 4.5 m long extending north from the balustrade but it slopes down towards the north and beyond this point it remained buried. This culvert is believed to be 19th century in date and is similar to many other brick culverts on top of the terrace.</p>

<p>Drain 19 (F.2.24)</p>	<p>Brick lined drain immediately in front of the buried 'shelf' in front of the mansion steps. This extended over the central line of the terrace and sloped down gently to each side; then continuing into two 'extension' drains (Drains 13 and 14) with stone caps. Drain 19 did not have the hard grey render lining that almost all the other drains had and it is believed that this was earlier in date. The extension drains (Drains 13 and 14) did have the render lining and they are believed to have been 19th century. Immediately to the south of Drain 19 there was a partially surviving set of bricks set on a loose mortar/rubble layer, at a slope suggesting that they were intended to help drain into Drain 19 along the north edge of the terrace.</p>
<p>Drain 20 (F.2.25)</p>	<p>Drain exposed in a test pit dug on the terrace at the SE corner of the mansion. This drain had a stone cap and it was 0.79 m below the terrace surface. It was roughly aligned WSW-ENE and it may be that it represents a continuation of Drain 10, the spine drain that was exposed towards the centre of the mansion. Drain 20 was c.1.15 m to the south of the face of the house. The channel was observed to be at least 20 cm wide and 0.1-0.15 m deep</p>

9.4.23 Adjacent to the north-western pier at the top of the stairs a drainage feature was exposed comprising the base of an earthenware pipe and a shallow channel extending around it [F.2.26]. This was just to north of the east end of balustrade by the stairs.

9.5 Eastern third of Terrace surface (F.3)

9.5.1 INTRODUCTION

9.5.2 The drainage works in the eastern third of the terrace (Pl. F56-70, Fig 28b) confirmed that the construction of its surface and subsurface was broadly similar to that in the western third. The removal of the paving slabs confirmed that again the principal structural division in this part of the terrace was that the outer (eastern) part above the fernery had a substructure formed from brick arches while the inner (western) part had a series of make-up layers, areas of puddling clay and various drainage culverts (discussed further below). There was a clear north-to-south line at the western end of the brick arches and this was 12.5 m west from the east end of the terrace. This line corresponded with the western edge of the fernery water tank below.

9.5.3 SUBSTRUCTURE OF TERRACE ABOVE FERNERY AND FERNERY WATER TANK

9.5.4 To the east of the line c.12.5 m to the west from the end of the terrace the sub-structure comprised seven brick arches (F.3.1) orientated east to west along the line of the terrace and the crest of the arches were c.15 cm below the top of the paving slabs (Pl. F56-59). The structure was arranged in a pattern with four alternating wide arches (c.1.25 m wide) and three narrow arches (c.0.7 m wide). It should be noted that these arches are perpendicular to the north-to-south brick vaults which form the ceiling of the fernery below. This brick vaulting is believed to date from the first half of the 19th century (some point between 1838 and 1847) when the end chambers were substantially reconstructed to form orangeries.

9.5.5 The only feature of note within the brick-arch structure was the surviving brick base from the light well (F.3.2. Pl. F57) which matched the similar feature referred to above in the western third of the terrace. This comprised a void within the brick arches, c.1.4 m² and it was lined with a single skin of brickwork. The inner side of the brickwork facing into the light well had fine tuck pointing that was clearly intended to be visible. One of the bricks was removed and this had a shallow frog in its surface. This void continued down to the top of a north-to-south vault which is clearly the top of the same set of vaults that form the ceiling within the fernery water tank. As mentioned above there is a distinct patch of reformed brickwork visible from below, within the vault above the fernery water tank, and clearly when the early 19th century orangery was converted to a fernery in the late 19th century this light well was removed and blocked.

- 9.5.6 This light well would have had a glazed top and from an 1847 account which describes each end of the terrace being 'disfigured' by the skylights it appears that they would have projected above the terrace surface. No evidence of the former glazed structure survived however and clearly the upper part was entirely dismantled in the late 19th century when the orangeries were converted to ferneries.
- 9.5.7 At the west end of the brick arches the excavations revealed a north-to-south culvert (F.3.3) across the terrace constructed against the end of the arches and capped by a row of squared stones (Pl. F54-56). The top of the stones were c.0.2m below the tops of the arches and they were left in-situ in the current works. Immediately to the west of this was another row of c.10 stones at a similar height but orientated NNW-SSE and these covered over a shallow bitumen lined channel (F.3.4) spanning across the terrace. The hard bitumen channel was set on several thin layers of ash and compacted mortar but these were localised to this channel and did not continue west over a wider area. The culvert ran down towards the north and it was fed into by an east-to-west drainage channel which ran along the front of the terrace, immediately north of the balustrade.
- 9.5.8 SUBSTRUCTURE BENEATH AREA TO WEST OF VAULTS OVER FERNERY**
- 9.5.9 Similarly to the western part of the terrace the substructure of the area inside from the fernery vaults was largely comprised of loose fill (stoney/sandy dark ochre colour) with various brick drainage channels (Pl. 61-62).
- 9.5.10 Towards the front (south) of this area there was a very distinct, 1.5 m wide layer of thick grey coloured clay (F.3.5) which was clearly laid as waterproofing/puddling over the front of the terrace and which extended east to west immediately north of the balustrade. As detailed above it also continued westwards into the central area in front of the mansion. At a point c.2 m to the west of the end of the brick arches it returned northwards with a 95 cm wide band across the terrace which created a clear L-shape to the clay band. The excavation did not reach the bottom of this layer so the full thickness of the clay was not determined but its upper edge was c.0.35 m below the terrace surface.
- 9.5.11 It is believed that this clay band towards the front of the terrace covered over a series of vaults which were partially exposed in the central and western areas of the terrace (as described above) but they were not reached in the eastern area. In 1994 a north-to-south trench was opened in this area across the terrace and this recorded the top of the east-to-west wall associated with the vaults as being c.0.65 m below the terrace surface.
- 9.5.12 A cast-iron pipe (F.3.6. Probably 19th-century in date) was also found to be embedded within the clay, just beneath the surface of the clay and c.40 cm below the height of the terrace surface. This pipe was c.13 cm in diameter and it extended east to west along the central line of the main clay band. As detailed above the pipe continued west into the area in front of the mansion and it was observed to continue east to a point at least 16.5 m west from the east balustrade. It is likely that it continues north in the return band of the puddling clay but as the pipe was embedded within the clay it was not possible to confirm this.
- 9.5.13 The areas adjacent to the clay band were filled with loose fill although the full depth of this was not reached.
- 9.5.14 Just to the west of the north-to-south clay band another small culvert was exposed running NNW-SSE across the terrace [F.3.7]. This simple, crudely built culvert sloped down towards the north, right across the terrace and was fed by an east-to-west drainage channel which ran along the front of the terrace, immediately north of the balustrade. This culvert was 11 cm wide and its depth varied; it was constructed from bricks, with a brick capping and it had a

hard render lining to its inner sides. The bricks (6.75 x 11 cm) did not have frogs and their character was suggestive of a later 18th or early 19th-century date. This culvert had clay packed around its sides.

9.5.15 A set of simple brick culverts were exposed towards the north and west of the eastern third of the terrace. These included an east-to-west culvert (F.3.8) within the northern part of the terrace, the northern edge of which was 6.6 m to the north of the southern balustrade. A section c.7 m long was partially exposed, although in parts it had collapsed, but it is presumed that this culvert continued further east and westwards. This culvert was constructed from red bricks (some over fired) without frogs and c.6 cm tall. It was a simple construction with a line of bricks forming the base, bricks to either side and a brick capping. They were suggestive of an early 19th century date.

9.5.16 Two further similar culverts were exposed extending south from the east-to-west culvert. The western one [F.3.9] was close to the edge of the excavations in the eastern part of the terrace and its central line was only c.4.8 m to the east of the mansion. This culvert was c.45 cm below the terrace surface and a section c.2.5 m long was exposed (although it presumably continued southwards). The culvert was formed with a brick base, two bricks to each side and a brick over the top. The bricks were c.6 cm tall by 21 cm long and without frogs (similar to all the other bricks forming culverts on top of the terrace) but the sides were not rendered. The culvert channel had been partially backfilled and it appeared that this had been done deliberately rather than just through disuse. At its north end this culvert appeared to be truncated by the east-to-west culvert [F.3.8].

9.5.17 Approximately 4 m to the east there were traces of another simple brick culvert [F.3.10] orientated north-to-south with a brick coping and rendered sides. The channel was again c.12 cm wide x 9 cm tall although relatively little of this channel survived (or remained visible at the surface where the excavation was taken down to). At its north end this channel appeared to truncate the east-to-west channel [F.3.8].

9.5.18 **FORMER NORTH WALL OF TERRACE**

9.5.19 As discussed elsewhere it is believed that formerly the eastern and western parts of the terrace had a more distinct northern edge than in the current arrangement where the terrace surface extends to the north relatively uninterrupted. It is believed that in the mid 19th century there was formerly a retaining wall along the north edge of the eastern third of the terrace, with a balustrade along at least part of the top, and the ground level immediately to the north (ie the Duke's Lawn) was lower. Such an arrangement, with a balustrade towards the eastern end of the north side of the terrace, is suggested by a later 19th century plan which appears to be based on Barry's proposals (see Fig 18).

9.5.20 **Cut-back section of wall:** Several sections of the former north wall of the terrace have been exposed in the current project including parts revealed by the excavation of the bank where the Duke's Lawn meets the terrace. The works to the bank showed that in this area the north face of the wall had been largely removed and crudely cut back, presumably when the Duke's Lawn was re-landscaped in the later 19th century and the current shallow banked flower bed was created against the side of the terrace.

9.5.21 Part of this was initially exposed in 2014 during exploratory trenching (Trench F.104) and then more substantially exposed in May 2016 during the main excavations in the Duke's Lawn and against the north side of the terrace (see relevant plates in section on Area I, Pl.I6-I7). The section of the cut-back wall which was particularly observed was c.3.4 m long and the east end of it was 10.75 m to the west of the east end of the terrace. It is understood however that a much longer section, extending to both sides, had similarly been cut back. The lowest c.10

- cm of the exposed section of wall did retain its brick face so presumably the face survives below the line of excavation in the current project.
- 9.5.22 The section of wall closely observed incorporated an earthenware water pipe which relates to the man hole towards the west end of the vaulted part of the terrace. This pipe was c.90 cm below the top of the wall and it may be that this was an overflow pipe to prevent the fernery water tank over filling. The north end of the culvert [F.3.3] on top of the terrace immediately west of the barrel vaults, was also exposed in this wall. The end of this culvert terminated in a void but it may be that it formerly incorporated a pipe which carried water into the fernery water tank immediately adjacent.
- 9.5.23 The excavation works immediately to the north of the truncated wall exposed a large quantity of bricks and rubble (presumably the hacked off face of the wall) as well as various moulded fragments of what appeared to be Roman cement cast onto 19th-century bricks (see relevant plate in section on Area I – Pl. I8). Some of these fragments appeared to be from a moulded plinth which would have formed the base of a balustrade and several broken balustrade bottles were also found. The debris also included flat fragments of Roman cement render with grooves scoured to make it look like ashlar. These features are believed to have formed part of the phase of works undertaken by Charles Barry in c.1849-50 and it is assumed that they formed a balustrade along the north side of this part of the terrace.
- 9.5.24 **Section of wall retaining its face:** To the west of the exposed section of cut-back wall (F.3.11) another smaller section of the terrace's north wall was exposed by drainage works which had not had its face removed (F.3.12). This section was close to the mansion and it was exposed within (and truncated by) a SW-NE drainage trench extending from the central part of the terrace towards the Duke's Lawn (Pl. F66-70). This part of the wall was again orientated east to west and constructed from relatively soft bricks, suggestive of a late 17th-century date, with a light-coloured lime mortar. The wall was 1.1 m wide and the southern side of this was c.50 cm to the north of the current front of the mansion.
- 9.5.25 The top of this wall was only c.0.3 m below the terrace surface and the maximum length of the exposed north face was 1.2 m. Due to the NE-SW orientation of the trench more of the northern side of the wall was exposed than the southern side. The western edge of the south side of this wall was 1.8 m to the east of the house while the easternmost part of the northern face was c.5 m to the east of the house. The wall clearly continued east and it aligned with the other exposed sections of the terrace wall.
- 9.5.26 An interesting feature of the wall (F.3.12) was that the uppermost 0.3 m of the north face had Roman cement and scour marks to give the appearance of ashlar. Below this the wall had three courses of good quality brickwork (although not highest quality, fine-jointed brick) and then c.7-8 courses of a slightly rougher brick below this.
- 9.5.27 The excavation works exposed several drains in this area. One of these ran immediately to the south of the terrace wall (ie below the terrace surface), 1.2 m below surface and lined with Roman cement (F.3.13). Another culvert at a similar level was orientated north-to-south, c.3.3 m to the east of the house, and there was also a SW-NE culvert leading into this area from the terrace (F.3.15).
- 9.5.28 In addition the easternmost 1.5 m of the north side of the terrace also retained its facing brick, buried beneath the bank although here relatively little of the cement render survived in-situ (F.3.16).

9.6 Summary and conclusion

9.6.1 The works to reform the drainage on top of the terrace, involving the removal of the paving slabs and the excavation of the uppermost c.0.5 m of the substructure, have exposed numerous significant, previously hidden parts of the structure. These have included:

- Nineteenth-century brick vaulting above the two ferneries and fernery water tanks;
- The bases from the skylights which formerly projected above the terrace and illuminated the orangeries below;
- Various parts of an east-to-west wall (probably 17th century) that runs along much of the length of the terrace and is set c.1.8 m to the north of the southern balustrade;
- A series of vaults which are set to the south of the long east-to-west wall and are believed to have been set above the niches in the original terrace;
- A long band of puddling clay which was set above the vaults over the former niches;
- Possible evidence of a former projection at the centre of the terrace prior to the construction of the staircase;
- Various parts of the north wall of the terrace which formerly overlooked the lower areas to the north but which have since been buried by the formation of the West Lawn and Duke's Lawn;
- The vaulted landing above the centre of the staircase;
- Numerous drains

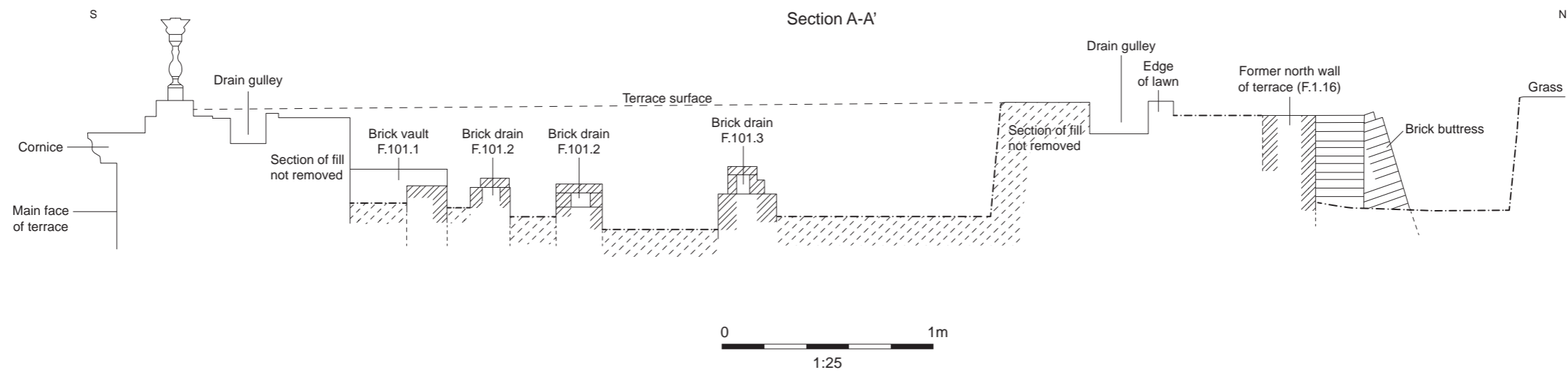
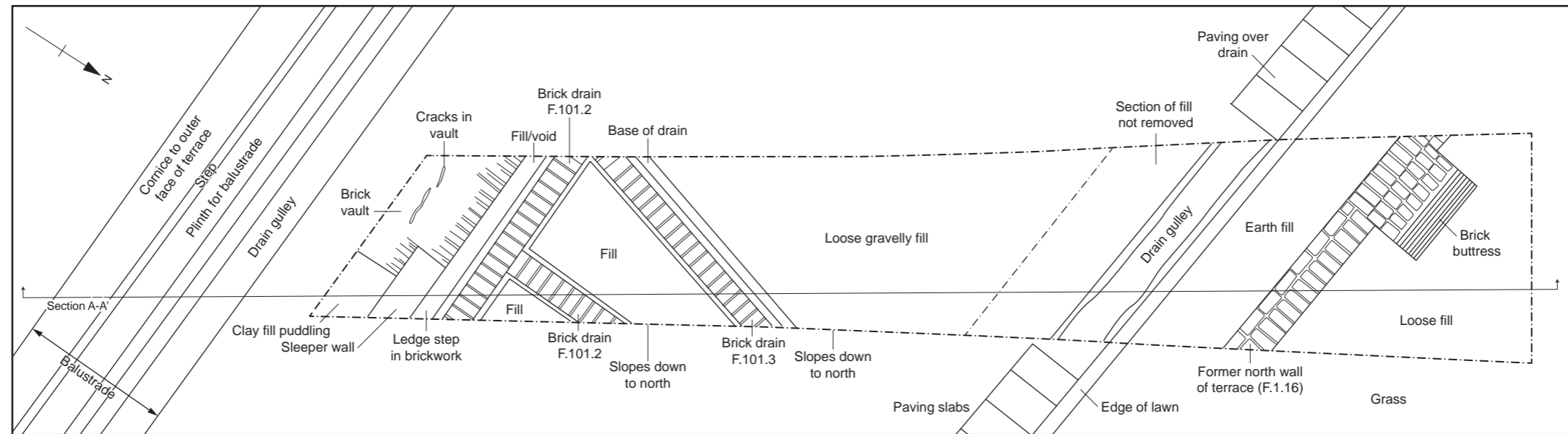


Figure F.1: Plan and section through Trench F.101 on top of terrace (western third)



Plate F.1: Western third of terrace looking east. Remains of lightwell [F.1.2] in foreground



Plate F.2: Features revealed in Pit F.101 towards front of terrace, looking south-east



Plate F.3: Features revealed in Pit F.101 towards front of terrace, looking south-east



Plate F.4: Features revealed in Pit F.100 at junction with West Lawn, looking south-east



Plate F.5: Former north wall of terrace [F.1.8] exposed in Pit F.100, looking south



Plate F.6: Former north wall of terrace [F.1.8] as well as features F.1.10 & F.1.12, looking south



Plate F.7: Trench immediately north of west part of Terrace (note F.1.10), looking west



Plate F.8: Former north wall of terrace. Truncated buttress [F.1.9] to left and [F.1.12] to centre, looking east



Plate F.9: Former north wall of terrace. Truncated buttress [F.1.9] to left and [F.1.10] to centre, looking west



Plate F.10: Former north wall of terrace exposed in Pit F.101, looking south



Plate F.11: Western end of former north wall of terrace. Buttress [F.1.9] exposed and later yellow brick-work forming retaining wall between terrace and pavilion, looking west



Plate F.12: Drainage hopper [F.1.11] in former north wall of terrace, looking south-east



Plate F.13: Truncated wall to west of south wall of mansion [F.1.18], looking south



Plate F.14: Truncated wall looking north to west of south wall of mansion [F.1.18]



Plate F.15: Truncated wall to ewest of south front of mansion [F.1.18], looking east



Plate F.16: Central part of terrace looking west after removal of paving and upper loose fill. (note clay pudding)



Plate F.17: Central part of terrace looking south-west after removal of paving and upper loose fill. (note clay pudding)



Plate F.18: Central part of terrace looking south-east. Note puddling clay and drain 1 [F.2.6]



Plate F.19: Drain 3 [F.2.8] and Drain 4 [F.2.9]. (North is to right of image)



Plate F.20: Drain 2 [F.2.7] and Drain 4 [F.2.9] looking north



Plate F.21: Drain 1 [F.2.6] looking south toward balustrade



Plate F.22: Drain 5 [F.2.10] , Drain 2 [F.2.7] and cast-iron pipe, looking east



Plate F.23: Drain 1 [F.2.6] extending left to right. Terrace balustrade is to left of image



Plate F.24: Horseshoe pipe extending eastwards from Drain 1 [F.2.6], looking east



Plate F.25: Drain 2 [F.2.7] and 5 [F.2.10] by balustrade, looking south-east



Plate F.26: Area of terrace immediately in front of mansion during works, looking south



Plate F.27: Area of terrace immediately in front of mansion during works, looking south-west



Plate F.28: Area of terrace immediately in front of mansion during works, looking south



Plate F.29: Area of terrace just to east of centre showing Drain 8 [F.2.13], Drain 9 [F.2.14] and Drain 10 [F.2.15], looking south



Plate F.30: Drain 8 [F.2.13] exposed during works, looking south-west toward top of stairs



Plate F.31: Drain 9 [F.2.14], Drain 10 [F.2.15] and Drain 12 [F.2.17] looking north-east



Plate F.32: Point where wall [F.2.2] steps forward in front of mansion, looking SE



Plate F.33: East-to-west wall [F.2.1] towards front of terrace with drain [F.2.13] overlying it, looking west



Plate F.34: Walls [F.2.1 & F.2.2] in front of mansion looking west



Plate F.35: Wall [F.2.2] in front of mansion, looking east. Top of staircase is immediately to right



Plate F.36: Vaults over landing at top of staircase, looking west



Plate F.37: General view of drains in central part of terrace, looking north towards mansion



Plate F.38: Iron fixings along central line of terrace (above Sounding Chambers), looking west



Plate F.39: Detail of iron tie fixing at central point of terrace, looking west



Plate F.40: Iron tie-bar bent away from original line



Plate F.41: East-to-west wall [F.2.1] towards front of terrace, looking west



Plate F.42: East-to-west wall [F.2.1] towards front of terrace, looking north



Plate F.43: East-to-west wall [F.2.1] towards front of terrace and overlying drains, looking east



Plate F.44: Drains and features immediately in front of centre of mansion, looking south-east



Plate F.48: Brick drains in front of mansion, looking north



Plate F.49: Drains and features in front of mansion, looking north



Plate F.50: Feature in stepped 'shelf' [F.2.5] surface in front of mansion, looking north



Plate F.51: Drains in front of mansion after removal of brick capping, looking north



Plate F.52: Drains in front of mansion after removal of brick capping, looking north-east



Plate F.53: Base of light well exposed in eastern third of terrace, looking north-east



Plate F.56: Features exposed in eastern third of terrace, looking south, showing drain [F.3.4]



Plate F.57: Simple drainage trench in eastern third of terrace, looking west, showing drain [F.3.7]



Plate F.58: Simple drainage trench in eastern third of terrace, looking west, showing drain [F3.7]



Plate F.59: Features exposed in Pit F.103 by SE corner of mansion, looking west, showing drain [F2.25]



Plate F.60: Ground make up in Pit F.104 looking west



Plate F.61: Features exposed beneath terrace surface in Pit F.104



Plate F.62: Former north wall of terrace [F.106.1] exposed in pit just to SE of mansion, looking south



Plate F.63: North wall of terrace [F.106.1] exposed in pit just to SE of mansion, looking south



Plate F.64: North wall of terrace [F.106.1] exposed in pit to SE of mansion, looking south



Plate F.65: Former north wall of terrace [F.106.1] to SE of mansion looking NW



Plate F.66: Former north wall of terrace [F.106.1] and drainage channels, looking SE

10 AREA IN FRONT OF TERRACE (AREA G)

10.1 Introduction

10.1.1 Various works have been undertaken in front of the Terrace and these have been intermittently monitored archaeologically. The various trenches that have formed this part of the project have been grouped as Area G in the current report (see Fig 27). These works have included:

- the major excavation of an east-to-west 'trunk' trench (*G.100*) for a drainage pipe extending c.13 m in front of the terrace. This also included several larger excavations for junction boxes along the same line
- Excavations of eight pits to the east of the staircase for the foundations of a temporary slide (*G.101-G.108*).
- Excavations for temporary soakaway pits either side of the staircase (*G.109, G.110*)
- a number of shallow, broadly N-S excavations to take water from the terrace to the main trunk trench
- Investigative trial trenches around each end of the Borghese Balustrade (*G.113 & 114*);
- Landscaping works including shallow ground reduction immediately in front of the terrace and extending southwards up to the main east-to-west path.

10.2 Historical Background

10.2.1 There is little firm evidence relating to the form of the area in front of the terrace during the Duke of Buckingham's works in the 17th century. One valuable clue is a description from John Evelyn dated 1679 of the site as being 'somewhat like Frascati' and of the 'extraordinary expense' of the works undertaken at the site. Frascati is a town located in the hills near Rome and it contains a number of influential villas (particularly the Villa Aldobrandini) set on sloped sites with grand terraces set in front of the house, merging with the landscape. Evelyn's reference may simply relate to the main South Terrace but it may imply that there were further terraced steps or levels beneath this.

10.2.2 From c.1713 the Earl of Orkney commissioned a number of proposals for the landscape at Cliveden and in particular for the creation of a great parterre to the south of the terrace. Some of these were merely unexecuted proposals but it is known that the parterre was under construction by 1723. It is not proposed to discuss at length here each of the early 18th century plans but one which may be worth mentioning is Claude Desgot's 1713 design for the parterre which shows long straight staircases descending towards the south from either end of the terrace. This would have given the north end of the parterre a more enclosed appearance and some features exposed in the current project could relate to these. It is not known for certain however whether these staircases were ever constructed or whether they remained unexecuted proposals.

10.2.3 John Richardson's 1749 plan suggests that there was a wide band of lawn immediately in front of the terrace with a path beyond this followed by further lawn (probably sloped) and a further path (probably at a lower level).

10.2.4 John Donowell's view, probably from the 1770s, shows a main east-to-west path in front of the terrace similar to that which survives today but slightly to the south of it. There strongly appears to have been a lawn in front of the staircase, between it and the path. Donowell's view also shows a north-to-south path aligned with the centre of the terrace and crossing the

east-to-west path to connect with the parterre at the lower level. A similar arrangement is also shown on the view included in *The Modern Universal British Traveller* (published in 1779).

- 10.2.5 The early 19th-century view suggests that by this period the east-west path did pass immediately in front of the staircase and the general arrangement is similar to today. One slight difference shown is that there were north-to-south paths aligned with the ferneries unlike today.
- 10.2.6 The first edition Ordnance Survey map of 1876 also shows the east-to-west path immediately in front of the staircase as well as lawn to the south of this before the slope down to the parterre was reached. This map suggests that the long north-to-south paths aligned with the two ferneries, either side of the sunken area, had been removed by this date.
- 10.2.7 The key feature shown on the next map, that of 1899, is the addition of the Borghese Balustrade at the top of the short slope at the north end of the parterre. This aligns with either end of the terrace and has a wide opening to the centre. No significant differences are shown on the later OS maps.

10.3 Slide pits (G.101 – G.108)

- 10.3.1 **Introduction:** In June 2013 eight pits were dug (Pits G101-G108) within the lawn immediately in front of the terrace and to the east of the central staircase (Pl. G19-24). Together these are classed as Area G.1. These pits were dug to allow concrete foundations to be formed which would support a large temporary steel slide which was being erected for visitors during the summer. This slide was accessed from a scaffold tower which had been erected around the staircase principally to allow visitors to view the conservation works. Each pit was 1.2 m² in plan and they were intended to be dug by hand to a depth of 1.2 m.
- 10.3.2 Then in January 2014, after the removal of the slide, one of the pits (Pit G.105) was enlarged to the south to further investigate features previously found (see Fig G1).
- 10.3.3 **Results:** The eight pits were arranged in two east-to-west rows of four pits. Pits G.102, G.104, G106 and G.108 were closest to the face of the terrace (their north sides c.2.75 m from the terrace face) and Pits G.101, G.103, G.105 and G.107 were closest to the main path that runs east-to-west in front of the terrace. The south side of the southern row of pits was c.6.35 m to the south of the terrace face.
- 10.3.4 The most significant feature revealed by the work was the base of a large brick wall [G.101.1] which extended east to west through the four southern pits. We can assume that the same wall continues east to west between the pits and therefore the wall is at least 14.45m long.
- 10.3.5 The northern side of the wall (G.101.1) was exposed in each of these four pits, c.25-35 cm from the northern edge of the pits (therefore c.5.4 m to the south of the terrace face), but the wall then continued south beyond the southern edge of each of the excavations. Therefore one sample pit (Pit G.105, see Fig G1) was extended c.70 cm southwards when the slide foundations were removed and this showed that at least in this area the wall was 1.3 m wide (N-S). Although the south face was located relatively little was exposed as this area was beneath the path so excavations were limited. It was possible to confirm however that the south face continued down at least 62 cm from the top of this side of the wall. The bottom of the face was not reached. The top of the wall was c.80 cm below the ground surface in each of the four pits so the south face continues to a depth of at least 1.42 m below the current ground surface. There was mortar on top of the wall to confirm that it formerly continued higher.
- 10.3.6 The wall was constructed from soft, hand-made red bricks (c.21.5 x 10 x 6 cm) bonded with a soft white lime mortar. Both faces appeared to be English bond but relatively little was

exposed so this could not be fully confirmed. The wall had a rough core incorporating lumps of rubble and mortar while there were brick outer faces to north and south with a plain, regular character. The brickwork in each face had a similar character to each other and there was no suggestion that one side was visible, with high quality, fine-jointed brickwork while the other was buried or hidden.

- 10.3.7 A curious aspect to the construction of the wall was the fact that the outer faces to north and south were not bonded into the main wall and indeed both faces had to some extent collapsed or starting diverging from the main core. It appeared that the main core of the wall was constructed and then single-skin faces were built against the core. However, in the south side of Pit G.105 there was a distinct vertical edge to the facing skin suggesting that there may have been some form of wide piers or panels to articulate this side of the wall. This pier or panel was observed to continue down c.42 cm from the top of the wall and it then sat on a slight off set which continued across the width of the pit. The bricks did look very similar however so it is believed that they were constructed in a single phase.
- 10.3.8 On the south side of the wall there was a distinct compacted chalky layer (probably not a deliberate chalk surface) just below the level of the top of the truncated wall. On the south side of the wall in the eastern half of the pit there was a section of wall that appeared to be a collapsed wall but it's unclear if this wall was the face (ie in front of the surviving core wall) or if it was from a higher section of wall. This section of collapsed wall continued outside the edge of the pit. Also in this section of collapsed wall was a piece of dressed but non-moulded stone (36 x 18 x 10 cm) which appeared not to be in-situ.
- 10.3.9 The area immediately to the north of the wall was infill (pebbles/hardcore/rubble) but it wasn't fully dug out. A well preserved clay pipe was found in this fill immediately to the north of the north face of the wall.
- 10.3.10 Above this wall there were a series of layers which were interpreted as being a series of terracing or landscaping levels with imported material.
- 10.3.11 There was no similar wall in the northern four pits and here the entire depth of the pit was through various layers which were interpreted as various landscaping levels with imported materials.
- 10.3.12 **Interpretation:** The form of the wall strongly suggested that it was part of long linear structure such as a plinth for a further terrace or balustrade rather than part of a building with internal and external sides. The fact that the structure was aligned with the existing terrace also supports the belief that it was essentially part of the same late 17th century phase of works and formed another landscape feature from this period. A 17th-century reference to Cliveden being 'somewhat like Frascati' also suggests that at that date the structure had more than one level of terracing descending to the south (discussed more above in the historical background).

10.4 Main east-to-west drainage trench (Trench G.100)

- 10.4.1 **Introduction:** The main excavation in Area G, and the largest trench dug in the whole of the current project at Cliveden has been an east-to-west 'trunk' drainage trench to carry rain water eastwards away from the terrace and down into the Rushy Valley. This trench (G.100) was c.145 m long and it was located c.13 m in front of the terrace so that it was in the lawn immediately to the south of the east-to-west path in front of the terrace. The depth of the trench varied from c.1.6 m deep to c.2.5 m and there were also several larger excavations for junction boxes along the same alignment. There were also several shallower connecting branch trenches to the north, extending up towards the terrace but these are largely detailed separately below.

10.4.2 The features exposed and areas monitored are described west to east.

10.4.3 Pit for junction box: At the west end of the main trench dug in front of the terrace there was a large excavation for a junction box (c.2.5 m² x 2 m deep). The east edge of this excavation was aligned with a point 3.5 m to the west of the west end wall of the terrace. The uppermost 60cm of the pit all appeared to be disturbed brown soil (G.100.1) with a distinct and extensive E-W band of red brick dust in the west side of the excavation extending westwards away from the pit (G.100.2. Pl.G1). The top of this brick dust was only c.15 cm below the current ground surface and it was at least 1.5 m wide. This large patch of brick dust was an orange colour and it may have been a working area with waste material from where brick workers were rubbing the soft bricks together to form gauged brickwork. In this area natural was interpreted as being at c.1.15 m below surface and it comprised a loose stoney layer (G.100.3).

10.4.4 In a separate excavation a small sump (G.100.4) was exposed (and removed) c.1.5 m to the north of this junction box, just inside the line of the path in front of the terrace. This was due south of the Terrace Pavilion and south-west of the terrace itself. This was constructed from 19th or early 20th-century yellow stock bricks with frogs and hard mortar and the inner face of the chamber had a hard render lining. The uppermost part of the sump was c.15 cm below the surface although the main structure was c.35 cm below and it had two ceramic pipes draining into the sump. These pipes were c.22 cm in diameter and they had threaded ends. The brickwork of the sump appeared to continue down for the full extent of the excavation (c.1.25 m below surface). In plan the sump was 45 cm² to the outer edges and 26 cm² to the inner edges of the chamber.

10.4.5 **Large wall at west end [G.100.5]:** The excavations for the main pipe continued towards the east and the base of a very large north-to-south wall (G.100.5) was encountered immediately to the south of the west end wall of the terrace (Pl.G2-3). The wall was 1.45 m wide and it was formed from red bricks with lime mortar. The west side of this wall was 90cm to the west of the west wall of the fernery while the east side of this wall was 55 cm to the east of this point.

10.4.6 Within the trench the top of the wall was 65 cm below the ground surface but from the mortar on top of the structure it was clear that the wall would formerly have continued higher and in the southern edge of the pit the wall continued up close to the surface suggesting that to the south of the trench the wall would continue very close to the surface (just below topsoil).

10.4.7 The bricks measured 6.25 x 22 .5 x 11.5 cm, they were hand made without frogs and their character was very suggestive of them having formed part of the late 17th century phase of works at Cliveden. There were good faces to both east and west sides of the wall although the brickwork was not of the finest quality (ie not fine-jointed rubbed brick). The truncation of the top of the wall had created a step in the upper surface so that in the west side there were nine bricks exposed (60 cm) while on the east face there were 6 courses (42 cm). The upper edge of a set of chalk blocks were exposed at the base of the east side of the wall and these were interpreted as forming the foundation for the wall although it is possible that the chalk was in front of the wall.

10.4.8 When the wall was removed during the current works it appeared that the wall ended at the northern edge of the trench. On the south side of the trench the wall was clearly truncated and it clearly continued southwards but on the north side there was no visible sign of the truncated wall continuing north.

10.4.9 The works to remove the wall also revealed that the core of the wall appeared to be formed from chalk and that it was merely faced in brick, with brick also on top. The chalk observed on the east side appeared to be separate to this core however.

- 10.4.10 The alignment of this wall was such that if it had continued north it would have straddled the west end wall of the terrace and if it continued south its eastern edge would have just been beneath the north-to-south return of the Borghese Balustrade. This wall has subsequently been investigated further by the opening of a trial pit against the balustrade (detailed below).
- 10.4.11 **Junction box:** A large excavation (2.2 m deep) for a drainage junction box was dug approximately aligned with the West Fernery water tank (and 13 m in front of the terrace). The main feature revealed in this excavation was another considerable dump (G100.6) of what appeared to be red brick dust at the north-eastern corner of the excavation, similar to that mentioned above to the west (G.100.2). This was localised in the north-east corner of the pit rather than being a wide thin layer from a former surface; it was c.20 cm deep and the top of this patch was c.15 cm below the current surface. As mentioned above this may have originated from the skilled brick-layers forming the gauged brickwork within lintels etc by rubbing them together.
- 10.4.12 Other than the dumped brick dust the layers revealed in the pit were similar to those in the other man-hole excavated a short distance to the west comprising a series of similar loose, pebbly layers. These were: topsoil (G.100.7); a dark brown, pebbly silt subsoil (G.100.8) down to 0.55 m below surface; a chocolate brown loose pebbly layer (G.100.9) to 0.85 m; a lighter stoney layer (G.100.10) to 1.15 m; a slightly darker pebbly layer (G.100.11) to 1.4 m; a slightly lighter layer (G.100.12) to 1.7 m; a chocolatey layer (G.100.13) to 2.2 m. Natural was interpreted as being at 0.85 m below ground level.
- 10.4.13 A similar series of loose pebbly layers continued to be found in the trench as it extended eastwards towards the staircase.
- 10.4.14 At 5.5 m to east of the west edge of the West Fernery a cast-iron pipe was exposed [G.100.14] orientated NNE-SSW, c.25 cm below the surface and apparently heading towards the West Barrel Vaulted Chamber. The diameter of this was 10 cm. Apart from this pipe this section of the main trench (ie 2.4m – 6.4m to the east of the west side of the fernery) was featureless.
- 10.4.15 The southern end of a small brick-lined culvert (G.100.15) was exposed within the north side of the main east-to-west drain excavation (ie G.100), c.85 cm below surface and c.2.4 m to W of W edge of staircase. This culvert was orientated north to south and it comprised a chamber (14 x 16 cm) with brick sides and base and a stone cap over the top. The full structure was 30 cm tall in section by 37 cm wide. The bricks were 7 cm tall and were probably of 19th century date.
- 10.4.16 Just to the west of the portico there was a change in the ground make up and the excavation to the east of this went through a very soft, light-ochre colour sand (Pl. G4-5) without any stones mixed in (G.100.16). This contrasted with the much rougher layers in the trench to the west of this. In this area the top of this sand was at c.80 cm below ground level (below a top soil and darker subsoil with stones mixed in). On the north side of the trench in this area there was a further shallow layer immediately on top of the sand which was comprised of mortar waste and some brick fragments/detritus.
- 10.4.17 This distinct area of sand was relatively localised however as on the eastern side of the portico and extending to the east the main ground make up was again largely comprised of a stoney/shale imported layer.
- 10.4.18 Further to the east, in front of the area just to the east of the East Fernery, the trench passed through another large patch of pure ochre coloured sand. This sand was encountered immediately below the top soil and extended down through the trench (although here the

trench was only c.1 m deep). Again this sand was quite localised and beyond it to the east the ground again comprised coarse, loose stoney layers.

10.4.19 **Large wall at east end [G.100.17]:** a section of a further large wall (G.100.17) or brick base was exposed in the main east-to-west drainage trench, orientated north to south and broadly aligned with the east end of the East Fernery (Pl.G8-13). This feature closely corresponded with the similar base exposed in front of the west end of the terrace (G.100.5) as again it was very wide (c.145 cm wide), constructed from relatively soft red brick and if it continued north its sides would have straddled the east end wall of the terrace. Neither face had a clearly identifiable bond. The upper surface of this wall was only 33 cm below ground level and the exposed section was c.1.7 m tall to both sides, but it appeared to continue down below the bottom of the trench. To either side of the wall there was a fine sand.

10.4.20 The upper surface of the wall had mortar as well as traces of brick to confirm that the wall formerly continued higher and it was interesting to note that the traces that survived gave the impression of being fine-jointed brickwork of a higher quality than that in the main wall. The wall is assumed to have formed part of the Duke of Buckingham's original construction in the 1670s and it has been investigated further in subsequent exploratory trenches (discussed further below). The archaeological works undertaken by Network Archaeology in 2012 exposed a further section of the wall, immediately to the north in an east-to-west trench along the existing footpath.

10.4.21 **Minor brickwork in front of East Fernery:** The main drainage trench (G.100) exposed a minor section of in-situ brickwork (G.100.18) in front of the centre of the East Fernery and broadly orientated east to west. Only the southern edge of the linear brick feature was visible in the northern face of the trench, where the trench had spread slightly beyond the north edge of the lawn and c.50 cm into the area which forms the path. The feature clearly continued east and west beyond the small section that was exposed. It is likely that the feature was a simple crudely built drainage channel, the top of which was 25 cm below ground level, and it was constructed from probably 19th-century bricks with shallow frogs. The feature comprises a set of bricks set on their side (ie c.11 cm tall) which support horizontal bricks above suggesting that they are set over a culvert opening. The section of the feature exposed was c.1.5 m long.

10.5 Trench in front of East Fernery

10.5.1 Several north-to-south branch trenches were dug to the north of the main trunk trench and one of these [G.118] was immediately in front of the centre of the East Fernery to connect with pipes within the fernery. Within this trench a substantial brick wall [G.118.1] was found, orientated east-to-west in front of the terrace, and this is believed to have formed part of the Duke of Buckingham's 17th-century phase of works (Pl. G49 and F27). This wall broadly aligned with the similar wall exposed in the slide pits [G.101.1] and it is likely to have formed a continuation of this wall. It may also however have related to a former set of steps in this area.

10.5.2 The wall was constructed from soft red bricks bonded with white mortar and it was c.1.15 m wide. The north side of the wall was 5.25 m to the south of the front step of the fernery and the south side was 6.4 m to the south of it. The upper surface of the wall was c.80 cm below the ground surface but little of its depth was investigated in the current project. The trench was 90 cm deep so it was necessary to remove the uppermost two courses for the drainage pipe but clearly the wall continued down below this.

10.5.3 Immediately to the north of this wall there was another much less substantial brick structure [G.118.2] at a higher level than the wall below (Pl.G49). This feature was very crudely built with uneven bricks that were hardly bonded but it continued up to close to the ground surface. The feature formed a face within the eastern side of the trench, c.5 m to the south of the front

step of the fernery but it was not possible to easily interpret what the bricks would formerly have related to. The south edge of the feature had stepped bricks suggesting that it formerly continued southwards while the form of the northern edge suggested that this may have been an eastward return. It was not clear however. The feature was c.30 cm long (N-S) and c.50 cm tall.

- 10.5.4 Between these two walls and the front of the fernery the trench passed through what appeared to be a very clear demolition layer c.25 cm tall and c.30 cm below the ground surface. This layer comprised discarded brick fragments (possibly 17th-century bricks) and light mortar. This layer was extensive and appeared to continue most of the way up to the front of the fernery (continuing northwards at least 4 m). Presumably this indicates that a substantial structure was pulled down in this location. This may have related to the elaborate projecting staircase shown at this location on the drawings in *Vitruvius Britannicus* and further possible evidence of this was exposed during later ground reduction works (Feature G.119.1; see below 10.9).

10.6 Exploratory trenches by Borghese Balustrade

- 10.6.1 The two large north-to-south wall bases (G.100.5, G.100.17) at each end of the terrace were the most significant features exposed in the main drainage trench (G.100) and in March 2017 a number of further pits were dug to investigate these walls further.

10.6.2 Trenches by east end of balustrade (G.109-G.113)

- 10.6.3 Five further trial holes were dug close to (or immediately adjacent to) the north-to-south section of the Borghese Balustrade at the eastern end of the terrace (Pl. G50-56, Fig 27). These were each aligned with the large wall (G.100.17) exposed in the main drainage trench to the north in order to attempt to determine how far the large brick wall continued south. Two of these pits were dug to the north of the end of the Borghese Balustrade (between the balustrade and the line of the drainage run) while another two pits were against the east side of the balustrade and the last pit was dug against the south side of the balustrade, at its very eastern end.
- 10.6.4 The northernmost trench (G.109) was 1.47 m by 0.3 m while the successive trenches to the south were G.110 (1.57 x 0.37); G.111 (2.14 x 0.27), G.112 (1.2 x 0.36) and G.113 (0.75 x 1 m).
- 10.6.5 The large 17th-century wall (G.100.17) was found in all five of the pits and it was clear that the 1890s balustrade was deliberately constructed on top of the 17th century wall. Indeed it may be that the balustrade was an attempt to recreate, at least to some extent, what was believed to have previously been here.
- 10.6.6 In each pit there was a substantial concrete foundation for the 1890s balustrade, set directly on the 17th brick base and extending c.0.3 m to the east of the above-ground balustrade (Pl. G51). This concrete extended up to c.25 cm below ground level. The 17th-century wall extended eastwards beyond this and although only the eastern face was exposed in these pits it appeared that if the wall was 1.45 m wide, as it is known to have been further north in trench G.100, then the balustrade would have been constructed on the very western edge of the brick base.
- 10.6.7 In G.109 and G.111 the top of the brick wall was c.60 cm below the ground surface while in G.110 it was 45 cm below the ground and in G.112 it was c.80 cm below.
- 10.6.8 In Pit G.109, beneath the 15 cm topsoil (G.109.1) there was subsoil (G.109.2) down to 30 cm below surface incorporating building/demolition debris (bricks & hardcore). Beneath this there was a layer (G.109.3) down to the top of the 17th century wall including extensive white

mortar, presumably from the demolition of the wall (Pl. G52). The top of the wall was exposed at 0.6 m below ground and immediately to the east of this there was a fine ochre-coloured sand fill without any inclusions. This is the same pure sand layer which was found adjacent to this wall where the wall was exposed in the main trench (G.100) as well as when the same wall was exposed by Network Archaeology.

10.6.9 In Pit G.110 the top of the wall was found 0.45 m below ground level and the eastern face of it was c.0.6 m to the east of the alignment of the balustrade (although this pit is to the north of the balustrade). Below the topsoil (G.110.1) and stoney subsoil (G.110.2) there was a demolition layer (Pl. G53-55) down to 0.25 m below ground with numerous fragments of red brick (G.110.3). Below this was a 5 cm deep layer largely formed from white mortar and occasional brick fragments (G.110.4). Below this there was a grey/brown coarse, stoney soil (G.110.5) which continued just over the top of the surviving wall. Below this was a layer of pure ochre-coloured sand (G.110.6) without any inclusions, matching the sand found widely in this area.

10.6.10 The profile in G.110 suggested that the sand layer had been slightly excavated or cut back, possibly to allow for the construction of the wall, and then filled by the grey/brown soil (G.110.5). In the fill within Pit G.110 a heavily worn coin was found. Although it was hard to depict much on the coin it was possible to see the faint trace of the profile of a king and a date on the other side which appears to read 1776.

10.6.11 In Pit G.111 the eastern edge of the wall was 0.85 m to the east of the balustrade. Directly above the wall, and extending to the east of it, was a grey silty subsoil (G.111.2) with fewer brick fragments than in other holes. Immediately east of the wall was the ochre-colour pure sand which the wall may have been constructed into.

10.6.12 In Pit G.112 there was a topsoil above a grey silty subsoil with 20-30% gravel and brick fragments. Below this was an orange clay with flint and occasional fragments of brick and below this was a rubble layer of lime mortar.

10.6.13 Pit G.113 was located at the very eastern end of the main east-to-west balustrade. It was set against the southern face of the easternmost pier, particularly to determine whether the 17th-century wall returns westwards beneath the balustrade. The pit was c.1m (E-W) by 0.75 m (N-S) and it was dug to a depth of c.0.8 m. Beneath the dark grey clean topsoil (G.113.1) there was a distinct deposit down to 0.27 m below the surface with flint gravel and occasional brick fragments (G.113.2). Below the 0.27 m line there was a cleaner soil (former topsoil?) and this could represent a former surface (G.113.3). Below G.113.3 was a light orange-brown clay layer with occasional flint gravel inclusions and brick fragments (G.113.4). A small piece of brickwork was found which could have been moulded to form part of a volute. Beneath this was a rubble layer (G.113.5) with broken bricks and a creamy coloured lime mortar from the demolition of the 17th-century wall (G.113.6) which was found immediately beneath G.113.5. In this pit the top of the wall was 0.75 m below ground and the uppermost course was laid in header bond. The east face of the wall was 0.48 m to the east of the balustrade and this continued in a N-S direction through this pit. This confirms that the wall continues southwards at least 0.75 m beyond the Borghese Balustrade and probing in the ground suggested that it continued further. This evidence suggests that the wall does not return east to west beneath the main E-W branch of the balustrade but continues southwards. Once again it was confirmed that the balustrade was constructed on a concrete foundation which was set on the brick wall (G.113.6).

10.6.14 ***Trench by west end of Borghese Balustrade (G.114)***

10.6.15 At the west end of the balustrade a single trench was dug by hand in March 2017 at the southern end of the west side of the balustrade. This trench was 1.3 m long (N-S) by 0.75 wide (E-W) and it extended 0.65 m to the south of the southern edge of the balustrade. Similarly to the trenches at the east end the balustrade was constructed on a concrete foundation, extending 0.3 m westwards beyond the line of the balustrade, but in this pit the foundation continued down for the full depth of the excavation (c.1.2 m below ground surface). The 17th century wall was not found in this pit and it is assumed that the surviving base of the wall was buried at a lower level. Below the topsoil in the pit there was a deep, clayish stoney layer (down to 0.65 m below ground) with numerous fragments of brick, chalk, flint and tile. Below this, extending down to 1.2 m below ground level, was a distinct layer of compacted white mortar with brick fragments but no clear evidence of in-situ brickwork. This is assumed to have been a demolition layer from the former 17th century wall.

10.7 Soakaway trenches either side of staircase (G.115 & G.116)

10.7.1 *Soakaway trenches to either side of staircase:*

10.7.2 In November 2015 temporary soakaway trenches were dug to either side of the central staircase to provide temporary drainage from the two lower landings. Each of these soakaways comprised a main east-to-west trench, c.77 cm deep by c.250 cm long and c.4 m in front of the face of the terrace. A shallower feeder trench (50 cm wide) was also dug to either side of the staircase to hold a pipe which would carry the rain water from the landing to the soakaways. The northern ends of these two pipes was set at the two points where the staircase meets the main terrace face.

10.7.3 *Soakaway trench to east of staircase (G.115):* The main features found in the excavations to the east side of the staircase were a considerable number of waste stone balusters which were presumably dumped here at some point when the balustrade was renewed (Pl.G21-22). These baluster bottles were located towards the south-east end of the NW-SE feeder trench rather than the main deeper soakaway and they were relatively close to the surface. Approximately 25 baluster fragments were found here and it appeared that the dump continued south beyond the line of excavation. Indeed some later ground reduction works (G.119) in this general area also uncovered a small number of further balustrade bottles. The fragments included bottles, tops and bases and the bottles appeared more squat (c.14 cm wide) than most of the more slender balusters currently in the balustrade.

10.7.4 The tops of the uppermost balusters were only c.15 cm below the ground surface, immediately below the topsoil. There was no clear sign of fire damage to the balusters so there's nothing to suggest that they represent a post-fire phase of repairs or reconstruction. It is likely that the balustrade (both the terrace and the staircase) has been repaired at several times and this dump could have been from any of these phases. The close proximity to the surface may suggest that it was a relatively late phase (early 20th century).

10.7.5 This feeder trench was c.50 cm deep at its deepest (SE) end and slightly shallower at its NW end adjacent to the terrace.

10.7.6 A 12 cm diameter earthenware drainage pipe was also encountered in this feeder trench and a N-S cast-iron drainage pipe was found in the main soakaway trench. This pipe was set at 4.7 m to the east of the staircase and it was c.15-20 cm below the surface. The section that was dug up was c.1m long by c.6.5 cm diameter and its form suggests it was probably later 19th century in date.

10.7.7 *Soakaway to west of staircase (G.116):* The soakaway excavations on the west side of the staircase had a similar arrangement to those on the east side but a mirror image of them. A

ceramic drainage pipe was exposed close to the surface (c.12 cm diameter) which was partially exposed in the feeder trench and was broadly aligned NE-SW. The pipe had previously been broken and was removed in the works. No other archaeological features were revealed. Again there was a soft, light-brown sandy top soil and slightly darker subsoil.

10.8 Trial Pits in front of western blind arcade

- 10.8.1 Towards the end of the project two exploratory trial trenches (G.120, G.121) were dug in the area in front of the western blind arcade to investigate the possibility that the large east-to-west wall that was found in the slide pits to the east of the staircase also continued in front of the western side of the terrace.
- 10.8.2 The eastern of the two trial pits (G.120) was located 7.5 m to the west of the staircase (ie the east edge of the pit) and it was 2 m long (E-W) by 1.4 m wide (N-S). The southern edge of this pit was 7.20 m to the south of the blind arcade. At a level 1m below the current gravel path the upper surface of a large brick wall (G.120.1. See Pl. G31-32) was found and this is assumed to have formed part of the same overall structure that was found in the slide pits towards the east.
- 10.8.3 Elements of the feature had been truncated but it was clear that it was from an east-to-west orientated wall with the north edge of the wall closely aligning with the front of the staircase. The northern face of this wall was exposed through the pit, at a line c.5.5 m to the south of the blind arcade, and the wall then continued southwards at least 1.5 m. Beyond 1.5 m the wall then continued beneath the gravel path so it was not possible to fully investigate but there did appear to be something of an edge just beyond this line (ie a wall c.1.53 m wide).
- 10.8.4 The wall was formed from soft red bricks, similar to those found elsewhere (eg in the slide pits) and interpreted as surviving from the Duke of Buckingham's 17th-century phase.
- 10.8.5 This wall footing only appeared to be two bricks tall (with these only partially surviving) and then set on a loose flint/loose chalky mortar base. The chalky material was exposed in some areas through the loss of the bricks on top and along the northern edge of the wall footing there was a row of reused roof tiles (presumably packing pieces). Beneath these tiles the lower course of bricks along the north edge slightly projected. It was not possible to fully expose and investigate the area beneath the brickwork.
- 10.8.6 The western of the two trial pits (G.121) was located 21 m to the west of the staircase (ie the east edge of the pit) and it was c.2.7 m long (E-W) by c.2 m wide (N-S). Once again the main feature exposed was a very substantial footing from an east-to-west orientated wall constructed from soft red bricks with a white mortar, strongly believed to survive from the late 17th-century phase of works (Pl. G33-35).
- 10.8.7 In this area the footing survived more fully than in the pit to the east (G.120) and it formed a regular upper face at 85 cm below the ground surface. There was a clear southern edge to the wall, 6.6 m to the south of the blind arcade and c.50 cm to the north of the gravel path. Five courses were partially exposed on the south side of the wall (40 cm tall) and these were each slightly stepped so that the face of the lowest courses was 10 cm beyond the edge of the upper course. This side of the wall was laid in an English bond but this was a stepped foundation so the former wall above may not have had this bond. The pit was not continued any deeper and it could not be confirmed whether the wall continued down beyond the point reached (1.25 m below ground level).
- 10.8.8 The fact that the wall was entirely to the north of the path is a slight difference to the wall found in the slide pits (G.101-108) and in the nearer pit to the east (G.120). The wall continued

east-to-west through the 2.7 m long pit and it was clear that it continued beyond the pit in both directions.

10.8.9 The wall was 1.32 m wide (N-S) and immediately north of it there was a loose white mortar layer flush with the current top of the wall footing. This layer was relatively thin (c.10 cm) and below this was a loose, ochre-coloured pebbly-silt subsoil. There was no such layer on the south side of the wall although a similar step was noted on this side (although less of it was exposed than on the north side). It is thought most likely that this mortar immediately north of the wall was a demolition layer when the upper part of the wall was taken down and that the bricks themselves were then removed.

10.9 Landscaping in front of Terrace

10.9.1 Another phase of work towards the end of the overall project was the re-landscaping/ground reduction (G.119) of the area immediately in front of the blind arcades, extending south as far as the main east-to-west path. This allowed the beds to be reformed and it also included some shallow works immediately in front of the staircase portico.

10.9.2 *Ground reduction in front of East Fernery*

10.9.3 The landscaping (shallow ground reduction) works in front of the East Fernery revealed the trace of a large former feature (G.119.1) which is believed to have formed part of the Duke of Buckingham's later 17th-century phase of works (Pl. G23-27). This was immediately north of a section of the large east-to-west plinth-type wall (G.118.1) previously exposed in a trench aligned with the fernery (see section 10.5 above). This earlier trench (G.118) had passed through what appeared to be an extensive demolition layer (c.25 cm deep and c.30 cm below surface) extending up towards the face of the fernery and this feature was then further exposed in the landscaping (G.119).

10.9.4 There were no surviving in-situ bricks in this area but there was a clear outline from what appears to have been a previous structure, marked by a thick layer of loose white mortar with brick fragments mixed in. In the main areas exposed the outline of this feature had distinct eastern and western edges, c.3.8 m apart, although the central part had been truncated by the recent pipe entering the fernery along its central line. This layer of mortar was at c.35 cm below the floor within the fernery.

10.9.5 The 3.8 m wide feature was centred on the Fernery so that it broadly aligned with the outer edge of the two rusticated piers around the central archway.

10.9.6 Some shallow excavation was undertaken around the eastern and western edges of this feature in order to clarify its extent but towards the south it remained buried and exposing it in this area was outside the scope of the current project. In the areas exposed the layer of loose mortar/brick fragments tended to be c.20 cm deep and then there was a layer of sand below this. The mortar was deeper however in some areas. Some loose bricks were noted adjacent to the outline of the feature as if a structure had been demolished.

10.9.7 The northern part of the feature was not exposed (ie the c.2 m in front of the fernery) but it could be seen that the limecrete shelf (G.119.4) extended over the west edge of it.

10.9.8 It was noted that at a point c.5.56 m to the south of the face of the fernery the loose mortar had a distinct westward return. This would have aligned closely with the north side of the wall in the slide pits (G.101-109) and it is reasonable to assume that they would have connected to form a wall right along the front of the blind arcade. The corner where the wall returned was partially exposed by hand but the area further to the south, where the southern edge of this wall may have been, was not.

10.9.9 This feature in front of the East Fernery is clearly of interest in understanding the development of Cliveden and apparently the original vision of the Duke of Buckingham in the 1670s.

10.9.10 It is clearly possible that the mortar layer was simply the base of a former path to the fernery but this is not strongly suggested by any of the 18th-century views or plans and the way that the mortar layer distinctly returned westwards in a clear alignment with the wall in the slide pits would suggest that it was from a more substantial above-ground structure. The path here would also not appear to correspond with the short flights of steps which are known to have been in front of the chamber prior to its conversion to the fernery.

10.9.11 It may be that there was a large north-to-south structure here, constructed from brick, which was then taken down to leave the considerable quantities of mortar and loose brick fragments. This structure may have been fully completed but then taken down in the early 18th century when changes were undertaken at Cliveden but it is perhaps more likely that it was either never finished by the Duke or that it was deliberately pulled down by the Duke (as suggested by the documentary reference detailed at paragraph 2.2.10 above).

10.9.12 The overall interpretation of the 17th-century features is discussed further below in section 14 below.

10.9.13 Ground reduction in front of West Fernery

10.9.14 The general ground reduction works in front of the west half of the Terrace also exposed a brick wall base (or bases) immediately in front of the West Fernery (G.119.2) although these were different to the features in front of the East Fernery. Although some of this structure had previously been exposed in a drainage trench (G.117.1) which entered the fernery it would be appropriate to describe the overall feature here (*Pl. G36-38*).

10.9.15 The overall structure comprised two separate elements, one to the east of the fernery's central line and one to the west, but it was clear that they related to each other and would previously have been connected. They had clearly been truncated by the insertion of a north-to-south pipe towards the fernery although that truncation pre-dated the current work.

10.9.16 The section of wall that was initially exposed in 2016 was orientated east to west and the front face was 2.33 m in front (to S) of the front wall of the Fernery. The section exposed was 1.3 m wide and it was immediately to the east of the central line of the Fernery. The top of this base was very close to the ground surface (c.10-15 cm beneath it) and mortar to the upper face confirmed that it would have continued higher (or that it supported another structure on top). Four courses (30 cm) of brick were exposed in the main (south) face and the structure was formed from red brick with light beige mortar. The full height of the wall was exposed and it could be observed that the wall was set on a loose fill base (45 cm below ground surface).

10.9.17 It appeared clear that it had been truncated at both the east and west ends and that it continued in each of these directions in front of the terrace. At the west end the wall was abutted by a north-to-south line of bricks laid on their sides and this was presumably a later alteration after the removal of the steps.

10.9.18 The northern extent of the wall/base was not fully exposed, partly due to scaffolding in this area at the time of the trenching works) but it is assumed that it continued up towards the face of the Fernery. When trenches were later dug inside the fernery it could be seen that lot of the brickwork immediately outside the Fernery had been robbed away.

10.9.19 The second related part of the structure (G.119.2) which was subsequently exposed by ground reduction works was c.1 m to the west and it was immediately to the west of the central alignment of the Fernery. This brick structure again included a clear southern face which aligned with the previous section (G.117.1) and the height of the upper surface also matched

that of the previously exposed brickwork. The other three sides had again all been truncated however.

10.9.20 The western part of the structure (G.119.2) was larger (c.1.5 m wide [N-S] by c.1.8 m long [E-W] and its truncated northern side was c.0.8 m to the south of the fernery wall. The bricks forming the structure were soft, hand-made and suggestive of a late 17th or early 18th-century date.

10.9.21 In the upper surface of the base there was a shallow mortar imprint suggesting that there may have been a 10 cm wide line of bricks on top extending across the full structure in an east-to-west line. This line divided the structure into two distinct elements (to north and south) and there was also a slight distinction between the eastern and western halves. Thus the structure divided into four roughly equal quarters. The south-western quarter was very shallow and largely comprised a layer of hard lime mortar rather than fully surviving bricks. These were laid directly on a soft ochre coloured soil. The south-eastern quarter was four bricks tall (forming the main southern face) and had the same type of mortar as the south-west quarter.

10.9.22 The north-west quarter was c.15 cm deep (two bricks) but of a crude character and laid directly on soil. The depth of the north-eastern element was not fully exposed but it had a lighter mortar on top.

10.9.23 It seems most likely that the structure related to the simple sets of steps in front of the chamber shown on views and maps from the mid 18th century until (and including) the Taplow Parish Map of 1838. The front (south) edge was c.2.3 m in front of the fernery wall and this may have supported the former lower step.

10.9.24 It is worth noting that the excavations in front of the West Fernery did not expose the trace of a large former brick feature as was found in front of the East Fernery.

10.9.25 Limecrete footings in front of blind arcade

10.9.26 The removal of the earth bank which was set against the base of the two blind arcades exposed a linear footing or plinth type structure [G.119.3 & 4] which was formed from a hard type of limecrete, the top of which was c.50 cm below the top of the bank against the arcade and c.15 cm below the floor in the ferneries (*Pl. G28-30, G39-43*). Each section of footings were set c.1.9 m in front of each blind arcade (ie the south edge of the plinth) and they extended almost the full length of the arcades although they have been truncated in places for pipes. At their 'inner' ends adjacent to the central staircase the plinths returned southwards parallel with the stairs and then they appeared to return again to link with the outer corners of the staircase (although in these areas parts of the limecrete had been removed).

10.9.27 Each plinth was 50 cm wide by c.20 cm thick and the limecrete was formed with numerous lumpy pieces of flint bonded by a hard lime (not concrete). The underside of the limecrete could be observed during the removal of the material and it was noticeable how little of the bonding agent (lime mixture) was used to hold the aggregate (mainly flints) together (*Pl. G43*).

10.9.28 The plinth or shelf had a rough, crudely formed upper surface and it was clearly never intended to be visible. One set of interesting features visible in the upper face are a number of small peg holes (2.5 cm²) which were presumably from small setting-out pegs driven into the ground to a consistent height and then used to ensure that the poured limecrete was roughly level (*Pl. G42*) The peg holes that could most easily be seen were 4.06 m (160 inches) apart from each other. Some of the holes were square but others were circular.

10.9.29 The limecrete footing slightly overlaid the west edge of the former feature in front of the East Fernery [G.119.1].

10.9.30 The footings in front of both halves of the blind arcade appeared to have been truncated slightly to allow for a cast-iron pipe drainage pipe (c.10 cm diameter) orientated roughly north-to-south and extending away from the blind arcade (*Pl. G40*). This pipe was not fully exposed but it appeared to be extending towards the barrel vaulted chamber which was converted to a water tank in the 1890s. The pipe may survive from the late 19th century although there was also a later, larger ceramic pipe exposed in the same general area, also linking with the barrel-vaulted chamber, and this may have superseded the cast-iron one. If the cast-iron one does date from the 1890s then the fact that the footings appear to be truncated to allow for it would imply that the limecrete pre-dates the 1890s Astor phase at Cliveden.

10.9.31 The most likely phase for the limecrete plinth to have been added would appear to be the third quarter of the 19th century when the Duke and Duchess of Sutherland were undertaking works after acquiring Cliveden. Views show that in this period the blind arcade became steadily more overgrown with climbing plants being trained up it and also up the walls of the staircase. Indeed, a view from 1877 suggests that at this time it was barely possible to see any of the blind arcade due to the covering vegetation (Fig 20). The limecrete plinth may have been added at this time to help retain a bank at the base of the arcade and also to create a slightly raised bed for the new plants. In contrast the various 18th century views show the arcade as being entirely clear of vegetation and without any plants or beds at the base.

10.9.32 It is worth noting that the early 19th century proposal view (Fig 16) does show plants along the front of the arcade so the limecrete features could have been constructed by then although as this view includes some features which were proposals and some which already existed it is difficult to rely on it as firm evidence.

10.9.33 It is also worth noting that limecrete has also been found in various other locations around the South Terrace. This includes the parallel kerbs for a path running along the north side of the West Lawn (see section 12.3 below) which are also believed to date from the third quarter of the 19th century, and in the banked grass area in front of the Terrace Pavilion (Network Archaeology, 2013). Here a large square footing made of limecrete was found during sewer pipe works which probably formed a foundation for a statue.

10.9.34 In a wider context the historic use of limecrete has not been much researched but OA has noted it in 18th and 19th century structures such as the West Park Weir (and other related river structures) at Stoneleigh Abbey (OA, 2013). The nature and consistency of the limecrete used at Stoneleigh appeared strikingly similar to that used at Cliveden. Limecrete is a material that was particularly used for foundations, underpinning, river structures etc.

10.9.35 Planter bases in front of Sounding Chamber [G.119.5].

10.9.36 Among the final intrusive works undertaken in the project (Jan 2018) was some limited ground reduction in front of the staircase and the entrance to the Sounding Chamber. This exposed a pair of brick circular features, one to either side of the entrance, which would have formed bases for former planters (*Pl. G44-48*). There are numerous photographs available on-line which confirm there have been large planters in these locations in recent years although these had been removed prior to the start of the current project in April 2013. In 2013 there were large rectangular concrete bases at the surface which must have overlain the circular ones exposed in 2018. There are also some older photographs dating from 1883 held by the Oxfordshire History Centre (<http://pictureoxon.com>) which appear to show sculpted shrubs in these locations, within large circular containers, so it is likely that the bases uncovered pre-date 1883.

10.9.37 The two circular planter bases were c.2.6 m to the south of the front wall of the staircase and 6 m apart from each other. Thus they were each just outside the line of the rusticated portico

around the entrance to the Sounding Chamber. Each one was 1.57 m in diameter and formed from a single skin of brickwork laid lengthways (c.22 cm). Various types of bricks were used to form the eastern base while those in the western planter were more consistent and were regular, maroon coloured stock bricks with frogs and suggestive of a date from the second half of the 19th century. Although the bricks were slightly different in each planter base there is little reason to doubt that they were both constructed at the same time.

10.9.38 Within each circle there was a thin layer of concrete forming a surface flush with the top of the brickwork. This concrete was set on a very crude hardcore comprising large fragments from bricks, drainage tiles etc.

10.9.39 Each planter base had the superficial appearance of a well, capped with the concrete, but it was clear that in each case the brickwork was only c.20 cm tall (3 bricks). The inner part of the western base was exposed more fully than the eastern one and it could be seen that 20 cm below the concrete surface there was a simple compacted surface within the feature and this was immediately above a 5-10 cm layer of white mortar and red brick (dust and small fragments). This red brick may well survive as debris from the 17th-century phase and beneath this thin layer was a stoney, ochre-coloured soil found widely at Cliveden.

10.10 Other minor areas in front of terrace

10.10.1 A branch trench (Trench No. G.122) was dug in front of the portico, orientated SSE-NNW (see Fig 27 and Pl.57). This trench was along the line of the path and it was heavily disturbed with various deposited ground layers and pipes/services. At the north end of the branch trench two cast-iron pipes were exposed orientated north-to-south and entering into the Sounding Chamber (beneath the main doorway). Each of these was c.10 cm in diameter and c.38 cm below the surface. These pipes were exposed for c.1 m. Also in the same area there was what appeared to be a lead cable housing (like a flattened pipe c.12 cm wide with a wire inside. Also adjacent to this was another cable (c.2.5 cm diameter) with rusty, metal housing wrapped around.

10.10.2 To the south of this another group of service pipes was exposed including an east-to-west water pipe and an adjoining branch extending south which incorporated a stop-cock c.4.6 m to the south of the portico step (see Pl G58). The east-to-west pipe appeared to form a junction box (c.50 cm below ground) and there appeared to have been a ceramic pipe extending across the top of it although the pipe had been truncated prior to the current works.

10.10.3 To the south of the stop cock there was a clay drainage pipe (15 cm diameter) orientated east-to-west and further to the south (5.6 m to south of Portico) was another cast-iron east-to-west pipe at c.70 cm below surface. This was c.12 cm diameter but it could not be investigated closely.

10.11 Summary and conclusion

10.11.1 The most significant features found during the various ground works in front of the Terrace have been several surviving sections from the base of a very substantial wall which is believed to relate to the Duke of Buckingham's initial phase of works in the 1670s. In particular there appears to have been a very long plinth type wall (c.1.4 m wide) which extended east-to-west for the full length of the terrace and c.6 m in front of it. Clear sections of this were found in the slide pits to the east of the staircase and in the two trial pits to the west of the staircase. Towards either end of the terrace this wall appears to have returned southwards and sections of these two return walls, aligning with the outer edges of the ferneries have been found within the main east-to-west drainage trench. Further trial pits adjacent to the Borghese

Balustrade suggest that these walls extended southwards for at least 27 m from the east-to-west wall.

10.11.2 Interpreting these features is difficult but from the layout it can be assumed that they relate to the existing terrace rather than being from a previous unrelated structure or complex. The most likely interpretation is that they were from a planned, second lower terrace with large structures at either end (possibly ramps). This would correlate with the terraced villas in Frascati that Cliveden was originally compared to as well as Powys Castle which William Winde also designed, along with Cliveden, in the later 17th century. The colossal scale of the possible lower terrace would correlate with the Duke's known extravagance and clearly illustrate the scale of his ambitions for Cliveden (discussed further below)

10.11.3 Other features of interest revealed in front the terrace have included the long limecrete footings which appear to have been formed in the third quarter of the 19th century, possibly to form a raised bed for climbing plants to grow over the front of the terrace. An historic view of the terrace from 1866 included in the Illustrated London News shows the front of the terrace considerably more overgrown than previous views so it likely that the footings were added by the Duke and Duchess of Sutherland soon after they acquired Cliveden in 1849.

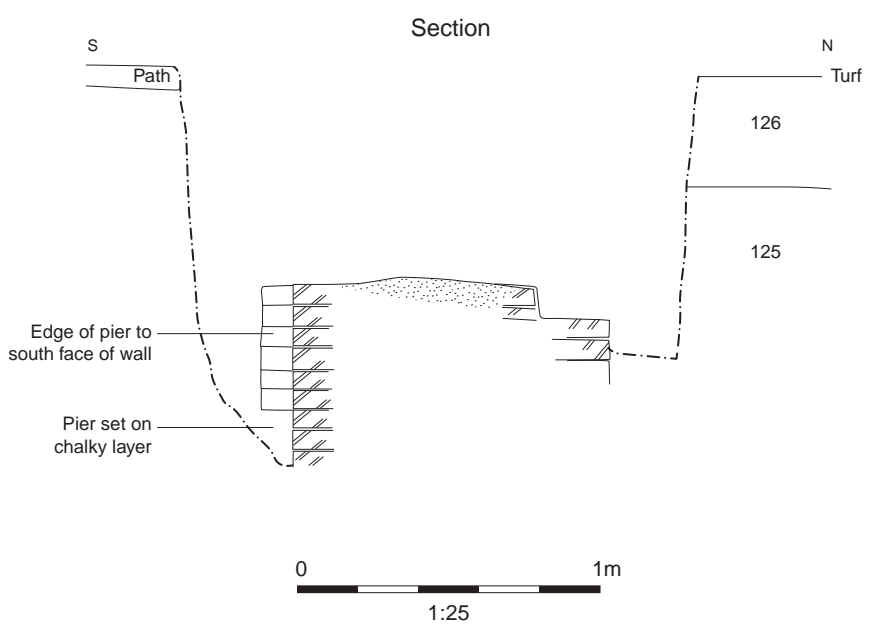
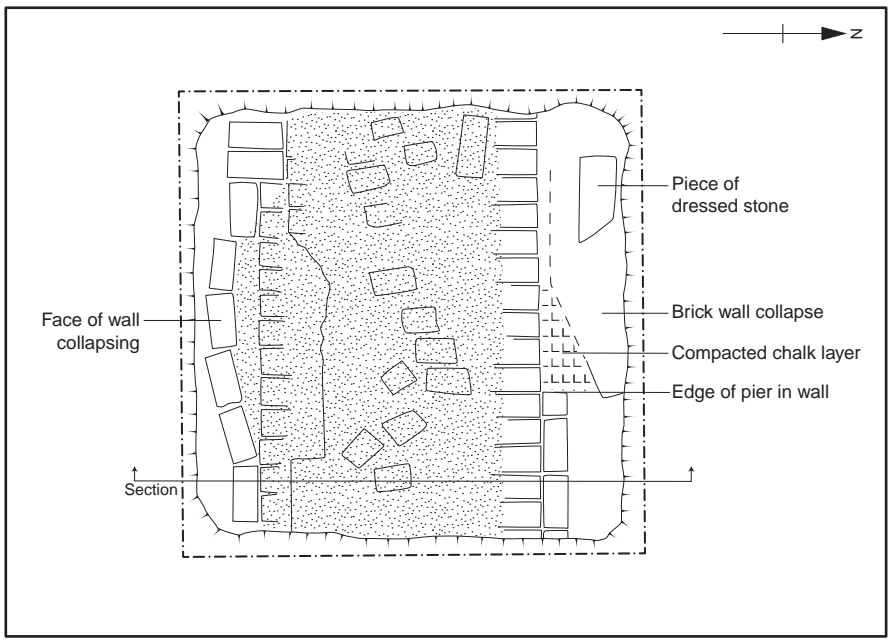


Figure G.1 Plan and section from Slide Pit (G.105)



Plate G.1: Patch of brick dust [G.100.2] found at west end of main trunk drainage trench [G.100], looking north-west



Plate G.2: Wall [G.100.5] found towards west end of main trunk drainage trench [G.100], looking west



Plate G.3: Wall [G.100.5] after its truncation, looking south-west



Plate G.4: Large area of pure sand in main trench [G.100] in front of East Fernery Water Tank, looking north-east



Plate G.5: Large area of pure sand in main trench [G.100] in front of East Fernery Water Tank, looking north



Plate G.6: Row of bricks [G.100.18] exposed in north side of trench in front of East Fernery, looking north



Plate G.7: General view from above to main trench [G.100], looking south



Plate G.8: West side of large wall found towards east end of terrace [G.100.17]



Plate G.9: Detail of large wall found [G.100.17], looking east



Plate G.10: Large wall found towards east end of terrace [G.100.17], looking south-west



Plate G.11: Large wall found towards east end of terrace [G.100.17], looking south



Plate G.12: Large wall found towards east end of terrace [G.100.17], looking south



Plate G.13: Upper surface of large wall [G.100.17]



Plate G.14: Large wall [G.100.17] after truncation, looking south-east



Plate G.15: General view of slide pits, looking south-west



Plate G.16: Wall [G.101.1] exposed in Pit G.107



Plate G.17: Wall exposed in Pit G.105 (north is top of image)



Plate G.18: Wall exposed in Pit G.103 (north is to bottom of image)



Plate G.19: Apparent pier to south face of Pit G.105, looking north-west



Plate G.20: Slide pit G.102 looking west



Plate G.21: Temporary soakaway trenches dug to east of staircase [G.115], looking north-west



Plate G.22: Fragments of bottles found in soakaway [G.115] to east of staircase



Plate G.23: Trace of brick base exposed in front of East Fernery [G.119.1], looking north



Plate G.24: Trace of brick base exposed in front of East Fernery [G.119.1], looking north



Plate G.25: View from Terrace down onto brick feature in front of East Fernery



Plate G.26: West edge of brick base exposed in front of East Fernery [G. 119. 1], looking north



Plate G.27: Edge of brick base exposed in front of East Fernery [G. 119. 1], looking south-east



Plate G.28: Limecrete edging in front of east side of Blind Arcade [G.119.4], looking down from terrace



Plate G.29: Limecrete edging to east side of staircase [G.119.4], looking north-west



Plate G.32: Brick wall exposed in trial pit in front of west half of Blind Arcade [G.121.2], looking south-east



Plate G.33: Brick wall exposed in trial pit in front of west half of Blind Arcade [G.122.1], looking north



Plate G.34: Brick wall exposed in trial pit in front of west half of Blind Arcade [G. 122. 1], looking east



Plate G.35: Detail of wall in trial pit [G. 122. 1], looking north-east



Plate G.36: Brick bases exposed in front of West Fernery [G.119.2], looking north-east



Plate G.37: Brick bases exposed in front of West Fernery [G.119.2], looking north-west



Plate G.38: Brick bases exposed in front of West Fernery [G. 119.2], viewed from above



Plate G.39: West side of Blind Arcade with exposed limecrete edging in front [G. 119.3], looking west



Plate G.40: West side of Blind Arcade with exposed limecrete edging in front [G.119.3]



Plate G.41: West side of Blind Arcade with exposed limecrete edging in front [G.119.3], looking north-west



Plate G.42: Detail of limecrete edging with setting-out peg hole



Plate G.43: Detail of 'lumpy' limecrete edging after removal



Plate G.46: Circular planter base exposed in front of Sounding Chamber [G. 119.5], looking west



Plate G.47: Circular planter base exposed in front of Sounding Chamber [G. 119.5], to east side of doorway



Plate G.48: View from Terrace down onto planter bases exposed [G.119.5]



Plate G.49: Wall [G118.1] within pit G.118 in front of East fernery. North is to the left of image



Plate G.50: General view looking north of trial pits by Borghese Balustrade [G.109-G.111]



Plate G.51: Footings exposed beneath Borghese Balustrade within trial pit [G.113]



Plate G.52: View looking west within [G.109]



Plate G.53: View looking west within [G.110]



Plate G.54: View looking north-west within [G.110]



Plate G.55: View looking north-east within [G.110]



Plate G.56: General view of trial pit [G.113] adjacent to Borghese Balustrade



Plate G.57: Trench in front of portico with various service pipes and vavles [G.122]



Plate G.58: Drainage features within trench in front of portico [G.122]

11 AREA TO WEST OF TERRACE AROUND PAVILION (AREA H)

11.1 Introduction

11.1.1 In the area to the west of the terrace a trench was dug extending up the bank in front of the Pavilion and extending around the west and north sides of the Pavilion to take drainage water from the West Lawn and the north side of the Terrace. At the bottom of the bank excavations were dug to connect this pipe with the main east-to-west pipe run in front of the Terrace. This area has been called Area H in the current report.

11.2 Historical background

11.2.1 The plan in Vitruvius Britannicus (Fig 6) shows that the area where the pavilion was later constructed was towards the western edge of a very large enclosed court to the west of the Duke of Buckingham's mansion. This enclosed area also included the footprint of what later became the West Lawn and the banked area which is now in front (to the south) of the pavilion. Evidence strongly suggests that the whole of this enclosed area was at a lower level than that of the terrace and mansion (detailed in section on Area I).

11.2.2 John Richardson's survey of 1749 (Fig 9) also shows the enclosed area here and it also suggests that this area had been laid out with formal beds. Further 18th century maps and the parish map of 1838 also suggest a broadly similar layout but the first edition Ordnance Survey map of 1876 (Fig 19) shows that this area had been reconfigured in the mid 19th century. The new pavilion had been constructed to the north-west of the house and the area between this and the terrace had been raised in height. This raising in height had included the construction of a new retaining wall which continued the west end of the terrace directly northwards to the south-east corner of the pavilion.

11.2.3 The 1876 OS map shows that to the south of the new pavilion the walls of the former enclosed court were replaced by a less formal area with trees and grass. A similar arrangement is also shown on OS maps from 1899, 1910 and 1923. It is interesting to note that each of these maps indicates an east-to-west feature projecting westwards approximately from the mid point of the West Fernery. This would have been close to where there is currently the bottom of a bank.

11.2.4 Each of the OS maps suggests that the area to the north of the pavilion was similar to today with a passage and sloped path up towards the West Lawn.

11.2.5 There is a useful photograph from the Henry Taunt Collection, taken in 1883 (Oxfordshire Archives Ref: HT3585) looking northwards towards the pavilion and showing the bank against the south and west sides of the pavilion. The photograph suggests that at this date the bank was slightly lower than it is today where it adjoins the pavilion and it appears to have been covered in low, thick-leaved bushes or vegetation. The detail of the photograph is not entirely clear but it appears that there may have been a low retaining wall at the bottom of the bank. This would have been in a similar location to the current base of the bank and this is where a wall has been found in the current project.

11.3 Description

11.3.1 Introduction

11.3.2 The main works in this area comprised the excavation of a broadly north-to-south drainage trench which skirted around the west side of the pavilion and continued down the bank to the south of the pavilion before connecting with the main east-to-west 'trunk' trench which

extended in front of the terrace (detailed in Area G). At its northern end this trench wrapped around the northern side of the pavilion and extended eastwards up towards the West Lawn. In the current report the lower part of this trench is numbered Trench H.100 while the upper part around the pavilion is numbered Trench H101 (see Fig 27).

11.3.3 *Wall aligned with front of Terrace*

11.3.4 The north-to-south trench (Trench H.100) exposed the base of a very large wall, orientated east to west and closely aligned with the front wall of the Terrace [*Feature H.100.1. Pl. H5-6*]. This wall was 1.45 m wide (N-S) and the c.0.5 m wide section exposed was 9 m from the west wall of the Fernery. The wall continued westwards beyond the limit of the excavation and it is assumed that this wall continued east to connect with the front of the Fernery. The wall structure was 75 cm below the current ground surface and it was 60 cm (7 courses) tall.

11.3.5 Immediately to the north side of the wall there was a hard-core (back fill from foundation cut?) comprising rubble and mortar and beyond this (to the north) the make up of the trench was a consistent loose, stoney ochre layer (sand/stones/pebbles). This ochre layer was found to both sides of the wall and the wall appeared to be cut into it. There were no bricks or man-made material in this layer and it may be the natural.

11.3.6 From the size of the wall and character of the bricks in this wall [*Feature H.100.1*] it is assumed to survive from the 17th-century phase of construction although its location is surprising because the plan in Colen Campbell's *Vitruvius Britannicus* (published 1717) does not show any features here. Campbell's plan suggests that the western edge of the terrace was in a similar location to today and this wall would have been well outside the enclosed court to the west of the house. The anonymous plan from c.1720-23 (Fig 3) does show a single continuing west from the front wall of the fernery so this could illustrate the large wall recently uncovered here.

11.3.7 It is assumed that this wall was a westward continuation of a similar wall which has been found beneath the front wall of the terrace in several locations (detailed above in section of Area G). The walls align and their nature is very similar. It could be that this is evidence of the terrace originally having been longer but it may be more likely that the great wall was constructed during extensive initial landscaping works to prepare the site, before details of the design of the house and terrace had been finalised. It may well be that it was initially proposed to have a longer terrace and indeed this may be implied by the fact that the terrace is not as wide as the rest of the Cliveden complex. Campbell's plan has slightly awkward inverted corners at each end of the terrace with the footprint stepping in rather than the terrace extending the full width of the complex as might have been expected.

11.3.8 *Wall aligned with rear of Terrace*

11.3.9 To the north of Feature H.100.1 another smaller wall [*Feature H.100.2. Pl.H3-4*] was found in the same trench at the bottom of the bank in front of the Pavilion. This had an L-shaped plan with the main part orientated east to west and this would have roughly aligned with the rear wall of the Terrace. The section exposed was c.10 m to the west end of the terrace and this was part of a larger section of the wall previously recorded in 2013 by Network Archaeology (Wall 215 in 2013 report). The main (E-W) part of the L-shaped wall was 0.45 m wide and the north edge of it was c.12.5 m to the south of the Pavilion. The top of the wall was 0.4 m below the ground surface (on north side of wall) and mortar to the top of the wall confirmed that it would formerly have been taller. The wall also included a 0.65 m long stub from a north-to-south projection which was also c.0.45 m wide. The west face of this northward projection was not exposed and the northern end of it had partly collapsed which obscured whether

there was a clear end here but the Network Archaeology work confirmed that it continued northwards for at least 3.23 m.

- 11.3.10 Both parts of the wall were formed from red brickwork (c.6.5 cm x 19 cm x 10 cm wide) with white lime mortar and the character of the wall was strongly suggestive of it pre-dating the 19th century. The wall was less substantial than some of the late 17th century walls found elsewhere however and the mortar seemed slightly harder so this initially suggested it may have been from an early 18th-century alteration rather than the original 17th-century construction (discussed further below).
- 11.3.11 The south face of the wall, which was neatly laid in Garden Wall bond with good quality pointing, was 10 courses tall (c.0.72 m) although the top was partially truncated and the bottom two courses stepped out slightly. This face would clearly have been visible. The north side of the east-to-west wall was largely obscured in the trench by the north-to-south projection but it appeared that the pointing here was rougher than the south side and it may be that similarly to today this was a retaining wall with a higher ground level to the north of it. Various back-fill layers were observed on the north side of the wall and the wall was set on a sandy ochre-colour 'ballast' found widely at Cliveden.
- 11.3.12 The initial impression was that the northward projection was part of the same construction as the east-to-west wall; the character of the brickwork and the nature of the mortar was very similar. However, while this wall was being removed in the current works there appeared to be a straight joint between the two walls with the northward return abutted (ie was built against) the east-to-west wall. It should be noted however that this junction was only partially exposed and the apparent straight joint may have been misleading.
- 11.3.13 Although the wall is now buried it is effectively a retaining wall at the foot of the bank with the earth sweeping over the top of the wall and then forming a much steeper slope immediately to the south. The fact that the south side of the wall was formed from facing brick shows that unlike today this side of the retaining wall would originally have been visible. As referred to above there is a photograph in the Henry Taunt Collection from 1883 (Oxfordshire Archives Ref: HT3585) looking northwards towards the pavilion and this appears to show a low retaining wall in the same location as Wall H.100.2.
- 11.3.14 *Interpretation:* It is clearly significant to note that the plan of Cliveden in Vitruvius Britannicus shows an east-to-west wall in this location, aligned with the rear wall of the terrace, as well as a northward projection c.10 m to the west of the end of the terrace (Fig 8). These walls on the plan formed the southern-western corner of the very large enclosed courtyard to the west of the house and the location of the walls [Feature H.100.2] exposed here in the current project appear to correspond very closely to this. As referred to above the fact that the wall was so much smaller than some of the other walls found to the south of the terrace, and that the mortar seemed slightly harder, suggested that it may have been from an 18th century phase rather than from the Duke of Buckingham's works. However, the walls shown in this location on the plan in Vitruvius Britannicus are compelling evidence to suggest that they are part of the original phase of works. It is always possible of course that this was an area of the Duke's proposals for Cliveden which was not constructed in the 17th century and it was only completed in the early 18th century.

11.3.15 *Trench around pavilion*

- 11.3.16 The trench continued northwards up the bank immediately in front of the pavilion and it then wrapped around the west side of the pavilion before returning eastwards on the north (rear) side of the building [*Trench H.101*]. The trench immediately west of the pavilion (c.1 m west of the building) was 1.1m deep and this exposed 20 cm of topsoil above a very rough made

ground layer (70 cm deep) incorporating large lumps of brick and other building debris [H.101.1]. Below this the bottom 20 cm of the trench exposed a loose, light-brown, silty soil [H.101.2]. The rubble [H.101.1] is assumed to have been a hardcore base laid in the mid 19th century when the Pavilion was constructed. This area immediately west of the pavilion would have been outside (to the west of) the enclosed courtyard area shown on the plan in Vitruvius Britannicus.

- 11.3.17 After extending around the north-west corner of the building a junction between three walls was exposed on the north side of the pavilion (Pl. H1-2. Fig 27). All the walls in this area were at a shallow depth with their tops c.15 cm below the ground surface. One of the walls [Feature H.101.3] was orientated north-to-south and although it was partially buried it appeared that it would have continued south as far as the north wall of the pavilion. This wall was 43 cm wide and it was inset c.50 cm to the east of the western corner of the pavilion. The wall had good quality brickwork to the west face and its character suggested that this may well have been a visible garden wall. Seven courses (47 cm) were exposed but the bottom was not reached in the excavation and it also formerly continued higher.
- 11.3.18 The bricks were hand-made, c.6 cm tall without frogs and bonded with a soft creamy mortar. The bricks were red but they appeared to be slightly darker than the large number of bricks found elsewhere from the 17th-century phase. Despite this slight difference in colour their character would suggest a date from the earlier 18th century or possibly the late 17th century, and a north-to-south wall is shown in this location on the plan in Vitruvius Britannicus. The wall on the plan would have been the western edge of the large courtyard to the west of the mansion. The width of the wall uncovered (43 cm) is comparable with other sections of the outer courtyard walls (eg wall H.100.2) and therefore it is assumed that this was a surviving fragment from the Duke of Buckingham's complex.
- 11.3.19 In the same area on the north side of the pavilion a small part of an east-to-west brick wall [H.101.4] was exposed. This was set at right angles to the north-south wall [H.101.3] and was therefore parallel with the north wall of the pavilion but only a small element of the northern edge of this wall was exposed. It is assumed that these two walls formerly adjoined but unfortunately the junction between them had been exposed (and possibly removed) prior to OA undertaking their recording. This east-to-west wall [H.101.4] was 33 cm wide, the exposed section was c.50 cm long and there appeared to be a distinct north face to the wall. The bricks forming this wall were c.6.25 cm tall, they had very shallow frogs and their character was suggestive of an early 19th century date. Behind this wall (ie to the east of it) there appeared to be an area roughly backfilled with hard core that included whole bricks although the south side of this wall was not exposed. This hard core is believed to have been part of the platform for the pavilion which was constructed in the third quarter of the 19th century.
- 11.3.20 The type of bricks show that this wall [H.101.4] was later than the adjacent north-to-south wall and they are assumed to have formed a 19th-century alteration.
- 11.3.21 Their character was suggestive of an earlier 19th century date so it may be that they survived from a wall constructed within the courtyard which is believed to have remained in this area prior to the construction of the pavilion, probably in the 1860s. The courtyard is believed to have generally been at a lower level and it was only built up for the construction of the pavilion but it may well be that the ground within the court sloped, so this area towards the north would have been broadly similar to today. It is also possible however that this wall was built as a retaining wall for a lower pathway formed when the pavilion was constructed, probably in the 1860s.
- 11.3.22 The other main brick wall [H.101.5] exposed in this area [Trench H.101] was orientated NW-SE and it appears that it would have met the other two walls in broadly the same location as

where the other walls would have adjoined. However the relationship between the three walls had been removed prior to the site recording. It also appears likely to have been a garden wall. This wall was c.33 cm wide and the small exposed section was c.60 cm tall. The bricks were red, relatively soft, c.6.5 cm tall and bonded with a very hard lime mortar. It is assumed that the bricks post-dated the 17th-century phase of works but they could be from an 18th century phase. The base of the wall was not found in the excavation and mortar on top of the wall showed that it would have continued higher.

11.3.23 This wall [H.101.5] would have extended north-westwards away from the pavilion (although it pre-dated the construction of this building) and it would have been immediately outside the large walled courtyard from the original complex. It may have formed a low retaining wall on one side of a pathway up towards the courtyard.

11.4 Summary and conclusion

11.4.1 The works in Area H to the west of the Terrace and around the pavilion have exposed several walls of interest. An L-shaped wall [Feature H.100.2] has been exposed which is believed to have formed the south-western corner of the enclosed courtyard to the west of the Duke of Buckingham's mansion. The location of the walls found appears to closely match the corner of the courtyard shown on the plan in Vitruvius Britannicus and the character of the brickwork supports a late 17th or early 18th-century date.

11.4.2 A section from another wider wall [H.100.1] has been exposed to the west of the front wall of the West Fernery and this appears to be a westward continuation of the great 'plinth' type wall base that the south face of the whole terrace is built on. The fact that this is to the west of the terrace, where no structure is shown on the Vitruvius Britannicus plan, is interesting and it might suggest that when the 'plinth' was built some details of the proposals had not yet been finalised, such as the length of the terrace. A single straight line is shown here on a plan from c.1720-23 (Fig 3) suggesting that there was some form of a feature here.

11.4.3 The works have also exposed small sections from three other walls on the north side of the Pavilion including a part of what is believed to have been the west wall from the outer courtyard in the original complex [H.101.3]. The other two walls appear to have formed a 19th century wall from within the court [H.101.4] and a wall [H.101.5] which would have been immediately outside the courtyard and may have lined a pathway up towards the court.



Plate H.1: Features found to NW of Terrace Pavilion [trench H.101] looking east



Plate H.2: Wall [H.101.3] exposed to NW of Terrace Pavilion, looking east



Plate H.3: Wall [H.100.2] found to south of Terrace Pavilion, looking north



Plate H.4: Wall [H.100.2] found to south of Terrace Pavilion, looking north



Plate H.5: Wall [H.100.1] found aligned with front of terrace, to south of pavilion, looking north



Plate H.6: Wall [H.100.1] found aligned with front of terrace, to south of pavilion (north is to right)

12 DUKE'S LAWN AND WEST LAWN (AREA I)

12.1 Introduction

12.1.1 To the north of the terrace, on either side of the mansion, there are a pair of lawns: that to the west of the house is known as the West Lawn while that to the east of the house is known as the Duke's Lawn and prior to the current project it incorporated the date 1668 (the date of the Duke's duel) made out in small pieces of stone. These are called Area I in the current project.

12.2 Historical Evidence

12.2.1 The earliest survey drawings that we have of Cliveden, those produced by Colen Campbell for Vitruvius Britannicus published in 1717, suggests that to the east and west of the mansion there were large enclosed courtyards which were divided from the terrace by a series of columns, presumably forming an open arcade. The footprint of the two lawns which now form the Duke's Lawn and West Lawn would have been within these two former enclosed courts but there is some ambiguity regarding the heights of these courts.

12.2.2 The evidence of Vitruvius Britannicus suggests that these two courts were at the same height as the terrace, to allow the spaces either side of the open arcade to be connected with each other, but it is possible that the arcade had a balustrade and that this side of the terrace overlooked sunken courts at a lower level either side of the house. The plan shows door openings in the east side of the east court and the west side of the west court but it does not show any sets of steps to confirm whether it was then necessary to descend from these doors to the ground beyond or whether the courts were already at this level.

12.2.3 It may be significant to note that a staircase is shown in the area to the north of the western court (adjacent to Archer's western wing) which does strongly suggest that the area south of this (ie the courtyard which now includes the West Lawn) was at a lower level.

12.2.4 The various early 18th-century drawings focus on the proposals for the parterre, providing little evidence relating to the areas either side of the house, and the next survey of use is that produced in 1749 by John Richardson (Fig 9). This again shows what appear to have been large walled gardens to east and west of the mansion with formal lawns and paths laid out within them but there is not conclusive evidence relating to their relative heights. The plan shows a staircase on the east side of the eastern garden (now the Duke's Lawn) leading down to the lower ground towards the Rushy Valley so we know that this enclosed garden must have been higher than the area to the east but it may not have been the same height as the terrace. The 1749 plan does not show any corresponding set of steps on the west side of the west court so it may be that this court was lower.

12.2.5 A survey by Samuel Adams dated 1761 provides similar evidence; the walled gardens to east and west of the house appear identical although the flight of steps to the east side of the eastern garden is not shown.

12.2.6 The Enclosure map of 1787 (Fig 14) once again suggests that there were large raised areas or courts to east and west of the house

12.2.7 There are various 18th-century views of Cliveden but these are almost entirely from the south, looking up towards the house and terrace, and from here the eastern and western courtyards are obscured. However, Hendrik de Cort's view of the ruins of Cliveden following the 1795 fire does include one piece of very valuable evidence because it distinctly shows the northern side of the western end of the terrace being formed by a brick wall which raised the height of the terrace above that of the area immediately north. It is believed that de Cort's painting is a

relatively accurate representation and therefore we can be confident that at the end of the 18th century the area which now contains the West Lawn was at a significantly lower level than the terrace.

- 12.2.8 This also strongly suggests that this area was probably always at a lower level, back to Vitruvius Britannicus and the Duke of Buckingham's 17th-century mansion. It is possible that the level of this area was lowered at some point following Vitruvius Britannicus and before the 1795 fire but it seems much more likely that this area was always lower than the terrace. Hendrik de Cort's view does not show the area at the eastern end of the terrace so it may still be that this area was at a higher level, as implied by the staircase shown on the 1749 map.
- 12.2.9 There is an early 19th century birds-eye view showing an unexecuted proposal for the reconstruction of Cliveden and this is of interest in the current chapter because it shows the areas to east and west of the mansion as being at the same height as the terrace (Fig 16). In the view the terrace is shown essentially extending northwards into the areas where the Duke's Lawn and West Lawn are now located. Although it is a proposal drawing some elements such as the central stairs, the blind arcading and the ferneries are believed to be accurate representations of the existing structures. It is likely however that the northward extensions of the terrace, either side of the house were unbuilt proposals. Raising these areas up to the terrace level would have been major undertakings and it seems very unlikely that such works would have been undertaken in the 10-15 years after the 1795 fire, before the mansion was rebuilt in the 1820s. As detailed below there is also other evidence to suggest that in 1850 the areas north of the terrace were still lower.
- 12.2.10 The Taplow parish map from 1838 suggests that at that date the basic arrangement of the areas either side of the house had still not changed greatly with formal courts or enclosed gardens.
- 12.2.11 In 1850 Sir Charles Barry prepared drawings for the rebuilding of the house following the 1849 fire and it is significant to note that on his plan the ends of the terrace are shown with balustrading around all three sides, apparently confirming that at this date the terrace was still at a higher level than the areas immediately north (Fig 18).
- 12.2.12 The Terrace Pavilion (or Cockerell Pavilion) is known to have been added in the 1860s at the north-western corner of the house and possibly around the same time the ground between this and the terrace appears to have been raised to effectively extend the west half of the terrace northwards.
- 12.2.13 The 1876 OS map confirms that the change had been made by this date and it also shows that the rectangular West Lawn which survives today had been established (Fig. 19). Close examination of the map however suggests that the West Lawn was slightly larger than today.
- 12.2.14 It is interesting to note however that in 1876 the area immediately north of the east half of the terrace is different to that at the western end and also significantly different to that shown on earlier maps. The formal court shown on previous maps had been replaced with a much less formal arrangement whereby the ground in this area is shown merging into the woodland to the east and without the clear division on the previous maps.
- 12.2.15 In this area to the east of the house the 1876 plan appears to show an embankment to the north side of the terrace and returning north immediately to the east of the house. The map suggests that at this date the ground in this area was somewhat lower than it is today but the 1899 OS map appears to show that by this date it had been raised to a similar level to the terrace (Fig 21).

12.2.16 A photograph from 1904 looking north-eastwards across the Duke's Lawn confirms that by that date the general area of the Duke's Lawn was at a similar level to that which it has now although the layout of the paths and lawn has changed (Fig 22).

12.3 West Lawn

12.3.1 The West Lawn (I.1) is a plain, rectangular lawn with paving stones around the edge and it is located between the terrace and the pavilion. In the current project a number of intrusive works have been undertaken in this area including:

- Lifting the flagstones to the north and east of the lawn and shallow excavation works to allow the stones to be re-bedded, (I.100);
- Several drainage trenches in the lawn itself feeding into a central soakaway, (I.101);
- Excavation of a northwards trench from the lawn and through (beneath) the balustrade at the northern edge of this area, (I.102);
- A trench around the perimeter of the lawn (I.103).

12.3.2 The locations of these are shown on Figure 27.

12.3.3 Most of this area was generally considered to have a low potential for early remains (or pre-1850 remains) and therefore the watching brief was of an intermittent, targeted nature. Not all the intrusive works were monitored.

12.3.4 *Lifting paving slabs to north of lawn (I.100)*

12.3.5 The paving stones and bedding layers in the area to the north of the lawn were lifted (I.100) to allow the stones to be re-set and the main features that this exposed were two shallow and crudely constructed limecrete walls extending east-to-west parallel to each other [*Features I.100.1 & I.100.2*]. The walls were c.2.75 m apart from each other and the southern wall was c.1.75 m north of the edge of the lawn. The full length of the walls were not exposed but c.9 m of the northern wall was exposed and c.15 m of the southern one.

12.3.6 The upper surfaces of the walls were 0.25 m below the top edge of the current kerb around the lawn and the two structures consisted of a poured base of hard white lime-mortar concrete (or limecrete) averaging 0.5m in width and minimum 0.2m depth. Pieces of Welsh grey slate and clay roof tile had then been laid over this concrete to form a rough even surface. Generally this slate/tile capping measured 0.22m in width. In places a buff coloured lime mortar had been laid over the slates/tiles and this mortar retained the impression of something laid into it to a width of 0.12m. This is likely to have been kerb stones (discussed further below).

12.3.7 At its east end the more southerly wall formed a right angled corner running southwards, aligning directly with the current corner on the kerb of the lawn. Within the angle a thin level spread of orange coloured lime mortar was noted forming some sort of hard surface. Between the walls a three sided 9-inch brick structure was exposed [*Feature I.100.3*] with a 3-inch cast-iron water pipe going into it. The pipe continued in a north-east direction to the end wall of the mansion where there is a current brass stop cock. It is likely that the structure and pipe formed a drain leading away from the stop cock.

12.3.8 The form of these foundations initially suggested the possibility that they supported greenhouses but there is no such evidence for these from historic maps. However, the 1st ed 25 inch scale map of 1876 (Fig 19) shows two dashed lines in this location, one of these (the northerly) on its own, the southerly forming the north edge of the West Lawn. It therefore appears that these walls formed a foundation for a raised kerb with a path between them. The 0.12m wide impression in the mortar was presumably from the kerb. It appears that the lawn

was originally larger than it is today and extended further north to the line of the more southerly footing. This arrangement is still shown on the 2nd edition map (1925).

12.3.9 There was no clear evidence of a former path or surface exposed between the two walls so this may indicate that there were flagstones here. The subsurface here was made ground largely comprised of a large amount of rubble.

12.3.10 Between the north footing and the balustrade wall there was a distinct change to a mid brown loam soil which would accord with the 1876 map showing a narrow strip, possibly for a flower bed or lawn. There were several places along the southern edge of the south footing where the concrete had been expanded outwards by up to 0.5m possibly to carry a bench or statue.

12.3.11 *Area by balustrade to north of lawn (I.102)*

12.3.12 To the north of both the lawn and the paved area where the kerb footings were exposed [Features I.100.1 & I.100.2] there is a balustrade which is due east of the north side of the Terrace Pavilion. A north-to-south trench [I.102] has been dug in the current project beneath this balustrade and then connecting to a trench which extended towards the lawn itself. The centre of the point where the trench met the balustrade was c.11 m to the west of the point where the balustrade meets the mansion.

12.3.13 The pits or excavations immediately each side of the balustrade were similarly sized (each one c.1.25 m² x 80 cm deep) and the construction of the sub-structure for the balustrade was similar on both sides comprising yellow stock bricks (nine courses visible) directly beneath the balustrade plinth (Pl. I3). The bricks were laid in an English bond and although the mortar was lime-based this is likely to be recent work using good conservation practice rather than historic brickwork. It was clear that in this area the balustrade was a relatively recent construction (later 20th century).

12.3.14 The ground make up in the hole on the north side of the balustrade comprised several consistent layers which appeared relatively recent and continued evenly through each section of the pit. The top layer was formed by gravel chippings (5 cm); below this was a 22 cm deep modern stoney hardcore layer (chocolate brown colour); below this was a 33 cm deep dark brown soil with brick fragments mixed in; below this was a 15 cm deep sandy ochre colour.

12.3.15 The north side of the hole to the north of the balustrade was formed from concrete blocks that formed the edge of planters (raised bed) for a row of screening trees.

12.3.16 In the pit on the south of the balustrade there was a concrete slab immediately below the paving, then a thin layer of soil beneath and a hard-core fill of bricks/rubble below this. However, the hardcore only appeared to be directly against the wall suggesting that a hole was dug to allow the construction of the balustrade and then it was infilled.

12.3.17 The trench which extended southwards towards the West Lawn and the terrace was largely comprised of dumped hardcore/brick rubble.

12.3.18 The two crude kerb footings [Feature I.100.1 & I.100.2] previously described were also observed in the drainage trench through this area. One was c.3 m due south from the balustrade and the other was just to the north of the north edge of the lawn. The southern footing was particularly formless in this area and spread to c.1 m wide x 20 cm deep and c.30 cm below surface.

12.3.19 *Trenches to soakaway in lawn (I.101)*

12.3.20 Four branch trenches were dug within the lawn itself radiating away from a central man-hole/soakaway (Pl. I1-2, I4-5). The soakway was 1.4 m wide by 1 m and 1.7 m deep. Each of

the branches of the soakaway were c.1 m deep (although there was some variation to this) by c.40 cm wide and below the topsoil they were found to be entirely comprised of made ground including broken bricks, stone fragments, mortar etc. The only moulded fragment was a piece of cornice formed cement render. It was not possible to distinguish any clear outlines of former beds due to the extent of the underlying rubble. No charred remains or other clear evidence of debris from either of the two fires at Cliveden were observed although the depth and narrow width of the trench meant that the lower parts were difficult to clearly record.

12.3.21 *Trench around the perimeter of the Lawn (I.103)*

12.3.22 A perimeter trench [Pit I.103] was dug immediately inside the edge of the lawn on its north, west and east sides. This trench was c.0.8 m deep by c.0.6 m wide and it was only interrupted by a c.3 m long concrete base to each side (presumably from former benches). No insitu built features were revealed within this trench. The topsoil throughout the trench was found to be a dark marl with some stone and other small inclusions. The depth of the topsoil varied but it was generally c.0.27 m. Below the top soil much of the northern branch of the trench comprised red brick rubble beneath a pale, chalky infill including small stone fragments. The eastern branch of the trench was also largely comprised of rubble (bricks, stone fragments) but there was also a distinct layer of gravel within this. This gravel was sandwiched between two layers of rubble. The eastern branch of the trench had a layer of chalk and brick rubble beneath the topsoil and beneath this was a 40 cm deep layer of brick rubble mixed with soil.

12.3.23 Two metal arrows, one with '5' on, were found in the topsoil strip of the West Lawn. This suggests that an informal putting course was probably laid out here at some stage.

12.3.24 *Paved area to east of lawn*

12.3.25 The paved area to the east of the lawn in this area was reduced by c.25 cm to allow the bedding for new paving slabs. This area was entirely made up from broken bricks and hardcore/rubble beneath a thin concrete slab.

12.3.26 It's understood that there's a large E-W culvert across the West Lawn but way beneath it, extending west beyond the edge of the terrace and taking waste from the house to a salt-glazed (white brick) chamber.

12.4 Duke's Lawn

12.4.1 A smaller number of trenches were dug in the Duke's Lawn to the east of the house.

12.4.2 *Trench to north-east (I.104)*

12.4.3 A trench (c.1.3 m deep) was dug across the Duke's Lawn (I.104) orientated SW-NE to connect with the trench (J.102) that takes rain water from the rear side of the terrace down the bank (to east of Terrace) and then down into the Rushy Valley. No features of particular archaeological significance were found in the areas monitored. This trench was found to be comprised of 30 cm of top soil and then dumped rubble made-ground formed from brick/tiles/flints and loose fill. Some of the dumped brick fragments were as large as half bricks. A north-to-south cast-iron water pipe (12 cm diameter) was also exposed parallel with the eastern edge of the lawn and c.1.5 m to the west of the lawn edge.

12.4.4 Where the trench cut through the path to the east side of the Duke's Lawn numerous electric cables and a pipe were encountered c.35 cm below the ground surface. In this area there was a compacted surface and c.30 cm of hardcore below this. Below this was a stoney/clay fill with dumped brick fragments (some patches with more brick than others).

- 12.4.5 The trench continued north-east across the small lawn to the east of the path and at the top of the bank. Here the trench comprised top soil above a stoney soil with dumped brick fragments mixed in.
- 12.4.6 *Trench to south-west corner of lawn (Trench I.105)*
- 12.4.7 Another drainage trench was dug at the south-western corner of the lawn [Trench I.105] orientated north-east to south-west between a manhole beneath the Duke's Lawn and a drain in the central section of the terrace. The eastern face of a large wall was partly exposed in this area [Feature I.105.1] which appeared to run broadly north to south, c.6.3 m to the east of the mansion and parallel to it (Pl. I9). The wall was at least 0.7 m wide but its full width was obscured by it being overlain by cement-laid bricks forming two sides of a 20th-century manhole. The eastern face of the wall was c.2.1 m to the east of the lawn edge and its top surface was 0.75 m below ground.
- 12.4.8 Four courses of brick were exposed and although the base of the wall was not reached it could be seen that the lowest brick course stepped out by 5 cm to widen the wall beneath this point. The bricks appeared to be laid in header courses with the bricks measuring c.10 cm x 6.5 cm tall. The bricks were laid with a buff, slightly pinky tinged gritty lime mortar and it was noticed that there was a distinct spread of mortar and brick rubble at c.0.8 m below ground. A 7 cm diameter cast-iron pipe also ran across the trench above the wall and following its orientation (N-S) in this area. This was 43 cm below ground.
- 12.4.9 The size of this wall and the character of the brickwork is similar to the many other sections of wall exposed in the current project which are believed to survive from the Duke of Buckingham's original 17th-century phase of works. A comparison of the plan of Cliveden from Vitruvius Britannicus strongly suggests that the main eastern wall of the original mansion would have been a considerable distance (c.12-13 m) to the west and therefore this wall would presumably have been a retaining wall at the western edge of an external area surrounding the house. Historic maps suggest that prior to the mid 19th century there was a very large enclosed court to the east of the mansion, including the site of the Duke's Lawn, but it is believed that this was at a lower level than the house and therefore it seems likely that this wall formed the western edge of this lower court.

12.5 Summary and conclusion

- 12.5.1 The main feature apparently relating to the 17th-century mansion exposed in the excavations in Area 9 (Duke's Lawn and the West Lawn) was a north-to-south wall at the western edge of the Duke's Lawn [Feature I.105.1]. It is believed that this would probably have originally formed part of a retaining wall on the western edge of a large court to the east of the 17th-century mansion.
- 12.5.2 The excavation works confirmed that the level of both lawns had been substantially built up with rubble, the character of which was suggestive of a 19th-century date. This corresponds with documentary evidence suggesting that the West Lawn was probably created in the third quarter of the 19th century and the Duke's Lawn in the fourth quarter.
- 12.5.3 Other features exposed include what appears to have been kerb footings from when the West Lawn appears to have been slightly larger than it is today.



Plate I.1: General view of West Lawn during works, looking south-west



Plate I.2: General view of West Lawn during works, looking west



Plate I.3: Brickwork beneath balustrade to north of West Lawn, in trench [I.102], looking north



Plate I.4: Soakaway [I.101] towards centre of West Lawn, looking east



Plate I.5: Trench into soakaway [I.101] towards centre of West Lawn, looking south-east



Plate I.6: Cut-back north face of Terrace facing Duke's Lawn [F.3.11], looking south



Plate I.7: Cut-back north face of Terrace facing Duke's Lawn [F.3.11], looking south-east



Plate I.8: Fragments of moulded render cornice found in Duke's Lawn excavations



Plate I.9: Wall exposed at south-west corner of Duke's Lawn [I.105.1]

13 AREA TO EAST OF TERRACE AND RUSHY VALLEY (AREA J)

13.1 Introduction

13.1.1 A drainage trench was dug which wrapped around the eastern side of the Terrace, from the north-east corner of the Duke's Lawn down to the area south-east of the terrace. This then linked to the main east-to-west drainage pipe which continued eastwards down into the Rushy Valley. Other shallower trenches for electricity cables were also dug. This general area has been called Area J in the current report.

13.2 Historical summary

13.2.1 The earliest plan of Cliveden is that included in Colen Campbell's *Vitruvius Britannicus* (published 1717) but this does not depict Area J as it is outside the main Cliveden complex. The plan shows the solid east end wall of the terrace as well as the adjacent inverted corner and then the adjoining north-to-south wall which formed the enclosed court to east of the mansion. Outside this area the plan does not depict any features although it is worth noting the doorway towards the northern end of the east wall of the courtyard. It is believed that the Duke of Buckingham's works were heavily focused on the house, the terrace and immediately adjacent areas, and that relatively little wider landscaping works outside of these areas were undertaken.

13.2.2 As detailed elsewhere there were various landscaping proposals prepared in the first quarter of the 18th century but these provide relatively little firm evidence for Area J to the east of the terrace. An anonymous plan from c.1720-23 is the first to clearly show the fernery chambers and it also suggests that there may have been a lawn to the east, aligned with the front of the Fernery. This lawn (?) extended east up to what may have been a fence or hedge aligned with the edge of the parterre (to the south) and also with the east wall of the enclosed courtyard (to north). The plan does not depict any features beyond this to the east.

13.2.3 John Richardson's plan of 1749 illustrates the substantial landscaping works undertaken at Cliveden in the first half of the 18th century and in relation to Area J it shows three long tree-lined avenues radiating away from what is believed to have been a staircase against the east wall of the courtyard to the east of the house. Richardson's plan shows this apparent staircase towards the centre of the east wall of the courtyard and therefore to the south of the doorway in the same wall shown on Campbell's earlier plan. Andrew's plan of 1761 also shows the radiating avenues to the east of the site converging on a point to the centre of the same wall.

13.2.4 There are various 18th century views of Cliveden from the south and the most useful of these with regard to Area J are two which are both believed to date from the 1770s: John Donowell's view, (undated but believed to be from the 1770s) and a similar one which is included in *The Modern Universal British Traveller* (1779). These are each from the same viewpoint and they both show a similar arrangement although Donowell's view (Fig 12) appears unfinished in this area with the features roughly sketched rather than finely detailed. The two views each appear to show a tall retaining wall to the east of the East Fernery and aligned with the rear wall of the terrace. This is shown on the same footprint as a wall shown in *Vitruvius Britannicus* and it is presumably the same as the tall wall which survives in this location today. Unlike today the two 1770s views indicate that this wall continued eastwards down the bank with a curved (scalloped) top to the wall and that there was a doorway within the wall at the top of the bank. The two views each show a set of vertical features in front of the retaining wall immediately east of the East Fernery although the details of this are unclear.

13.2.5 There are two maps from 1787 (*The Inclosure Map* and a map of Taplow parish in Gary Marshall's *Notes relating to historic landscaping at the east end of the Cliveden South Terrace*)

which each suggest that by this date the three avenues to the east of the house had been removed. Both maps indicate a broadly east-to-west linear feature extending eastwards away from the terrace which was presumably the wall shown on the two 1770s views continuing down the bank.

- 13.2.6 In the years 1818-1820 there were various attempts to sell Cliveden and three sets of sales particulars plans survive from these years which show valuable evidence relating to the layout of Area J to the east of the terrace. Each of these plans shows the inverted corner at the east end of the terrace, with the retaining wall to the rear of this which survives today, but then at the east end of this retaining wall the plans show a southward return and then the wall continuing eastwards towards the bank. This east-to-west section of wall is shown as being aligned with the front wall of the terrace (unlike the similar wall shown on the 1770s views aligned with the terrace's rear wall) and it includes a doorway at a point where a pathway is shown passing through. This path would have been close to the path which survives today passing around the eastern side of the terrace but their alignments do not match exactly.
- 13.2.7 To the east of this doorway the plans show that the wall kinked sharply in a north-north-east direction; this would have been through woodland and sloped down the bank in this area.
- 13.2.8 The first edition 25 inch Ordnance Survey map of 1876 again shows the wall aligned with the front of the terrace extending eastwards but this map suggests that by this date it only went up to the pathway where a doorway had previously been shown; the kinked wall beyond this point is not shown on the 1876 map. This map shows the major alterations to the landscape east of the house undertaken in the mid 19th century and the replacement of the previous formal court with a less formal arrangement which removed the clear division between the terrace area and the woodland to the east. A path is shown extending down the bank from the north-east corner of the terrace and it is also curious to note that the east wall of the East Fernery is shown with a slightly skewed angle (NNE) to the rest of the terrace.
- 13.2.9 A similar arrangement is shown in this area on each of the following OS maps up to and including that from 1923 but the 1972 OS confirms that by this date the eastern wall aligned with the front of the terrace had been removed. The layout shown on the 1972 map is similar to that surviving today.

13.3 Results

13.3.1 The trenching and investigation in Area J has comprised several elements (locations shown on Fig 27):

- Surviving surface fragment from retaining wall (J.1);
- Minor branch trench to the north of the main drainage trunk trench (J.100);
- Trench to east of sub-station (J.101);
- Trench up bank towards Duke's Lawn (J.102);
- Trench down bank towards Rushy Valley (J.103);
- Trench in Rushy Valley (J.104);

13.3.2 ***Low retaining wall and area adjacent*** (J.1)

13.3.3 To the east of the terrace there was a section of surviving historic wall [J.1.1] which acted as a low retaining wall (max c.55 cm tall) between the slightly higher level in this area to the north and the lower level to the south (Pl. J9-10). The wall appeared to align with the front wall of the terrace although trees and portacabins obscured this relationship somewhat. As referred to above in the historical background cartographic evidence suggests that a wall was

- constructed in this location at some point between 1787 and 1818 and there is little reason to doubt that the surviving wall is a fragment from this late 18th or early 19th century structure.
- 13.3.4 The main section of visible wall was c.11 m long (at its absolute maximum) but it clearly once continued westwards and there appeared to be a further line of bricks visible at the surface c.3 m further to the west in alignment with this wall (J.1.1). The ground level rose slightly to the west so presumably the wall here is buried. The eastern end of the surviving visible wall was c.31 m to the east of the east end of the terrace and c.3.75 m to the west of the fence beside the footpath in this area.
- 13.3.5 The wall was essentially constructed from garden wall bond with occasional stretchers mixed in and mortar to the upper surface of the wall showed that it formerly continued higher. The mortar was relatively soft and the overall character of the wall was suggestive of an 18th-century date. The wall was 35 cm wide and the maximum visible height was c.55 cm tall although it was largely lower (c.2-3 courses tall). The bricks measured 6.5 cm tall x 21 x 10.5 cm and they did not appear to have frogs. The main possible phasing in the wall was a section c.2.25 m long and c.2.25 m west from the east end of the wall. This section has vertical breaks to each end which is suggestive of a doorway and there is a clear possibility that this was the location of the doorway through the wall shown on the sales particulars plans from 1818-21. However, this would assume that in this area the former path was at least 5 m to the west of where it is now whereas taking rough measurements off the historic plans suggests that it was probably in a very similar place as it is now, or possibly even slightly to the east curving up the bank. It would have seemed far more likely that the wall was taken down at the doorway, and beyond it, rather than from a point just beyond the doorway. In addition the two vertical joints in the wall appeared more like structural cracks rather than clearly defined straight joints from former jambs. The character of the brickwork between the joints may be slightly different to that in the primary wall but that could have been a result of this section of wall being rebuilt.
- 13.3.6 A drainage trench (J.101) in the current works has skirted around the east side of the this wall and this showed that although this wall continued c.1m beyond (to the east of) the above-ground brickwork but it did not appear to continue through the alignment of the trench in the current works. The trench exposed the truncated edge of this wall, extending down c.4 courses below ground level, but the wall appeared to have been previously truncated in this area.
- 13.3.7 The trench in the current project necessitated the removal of a brick sump or pipe junction [J.1.2] immediately adjacent to the east end of this wall (c.50 cm to the SE of the wall). It appeared likely that this part of the retaining wall [J.1.1] was removed to allow the construction of this sump. The feature was a vertical, square plan chamber, c.25 cm² and 60 cm tall with its top c.15 cm below the ground surface. It was formed with 19th-century frogged bricks and there was a ceramic pipe draining into this at the top of the east side.
- 13.3.8 *Branch trench to south-east of terrace (J.100).*
- 13.3.9 At a point c.21 m to the east of the east end of the terrace a shallow (80 cm deep) spur trench (J.100) was dug in a north-easterly direction which wrapped around the retaining wall [J.1.1] detailed above and then continued north on the east side of a small substation. In the southernmost section of this trench, to the south of Wall J.1.1 various modern features were encountered including a N-S plastic water pipe [J.100.1] c.30 cm below the surface and a concrete cable cover [J.100.2] over an east-to-west cable at c.1.6 m to the south of Wall J.1.1. At a point c.7 m from the south-west end of this spur/branch trench an old electrical cable [J.100.3] with fabric wrapped around it was found as well as a probably 20th-century ceramic pipe (11 cm diameter) close to the surface with a threaded end [J.100.4]. A section of

earthenware half-pipe with a horseshoe-profile also found (17 cm tall x 2.5 cm thick. J.2.5)]. This was set as if it would have formed a cover over a cable.

13.3.10 The excavation in this area was relatively shallow (for electrical cables) and it was found to be entirely a stoney made ground. A number of fragments of distinctive brown, glazed earthenware half-pipes were found dumped ex-situ in this area stamped 'Doulton & Co Limited' [J.2.6]. These are believed to be half-section channels which would be set at the bottom of an inspection chamber (man hole).

13.3.11 *Area east and north-east of substation J.101*

13.3.12 The section of the trench to the east of the substation (J.101) to the east of the terrace exposed a thin layer of brick dust/rubble at c.30 cm below the surface but below this the ground was relatively undisturbed and was formed from a stoney/sandy ochre colour layer. In one area a SE-NW electric cable was exposed (J.101.1), crossing the current trench c.40 cm below the ground surface. This trench which was 1.4 m deep, was entirely made up of relatively loose/sandy material and at the very base a layer was reached that had the appearance of clay but the groundworkers on site called 'running sand'. On the west side of this trench there was a simple layer of bricks [J.101.2] just below the current thin surface which is assumed to have been a crude surface, possibly from the former path shown on the early 19th century maps. This simple brick surface continued northwards beyond the substation for at least 10 m. Below this was the ochre colour stoney layer.

13.3.13 In the area to the north-east of the substation a simple brick drain [J.101.3] was exposed for a length of c.5.5 m extending in a NW-SE direction and probably continuing eastwards down into the Rushy Valley. The feature had brick sides and base and it had various types of stone (some dressed and one moulded stone) placed over as capping pieces (Pl. J.5-7). The cavity within the drain was 20 cm tall by 16 cm wide and in this area the top surface of the stone capping was c.50 cm below the surface (although it sloped down towards the south). The bricks were small and handmade measuring c.5 – 5.5 cm tall x 10 cm wide. The lime mortar was soft and the character of the structure was suggestive of an 18th century date.

13.3.14 *Trench up bank to north-east of Duke's Lawn (J.102)*

13.3.15 The trench for the drainage pipe extended up the sharp bank towards the north-east of the terrace towards the Duke's Lawn. A substantial wall [J.102.1] was exposed towards the top of this bank orientated north to south and c.68 cm wide (E-W). The top of this wall was c.0.3 m below the ground surface (Pl. J1-4). The wall was formed from hand-made, relatively soft red bricks (c.5-6 cm tall on average) with a soft creamy white mortar. Approximately c.75 cm (10.5 courses) of the east side of the wall were exposed and it was clear from the traces of penny-roll pointing and good quality brickwork that this would have been a visible face.

13.3.16 The bottom of the wall was not reached (1.6 m below current ground level) so the wall continued down and it was clear from the mortar and truncated brickwork on the top of the wall that it formerly continued vertically upwards. The truncated top had a stepped form following the slope of the bank and the western edge was four courses higher than the east edge. It is likely that when the wall pulled down it was toppled to the east.

13.3.17 The western side of the wall was less clearly exposed than the east side but the character of the brickwork was similar to the rest of the wall and when this section of the wall was removed it was clear that it survived to the same depth as the east side.

13.3.18 The character of the brickwork in this wall was consistent for a later 17th or early 18th century date and it seems safe to assume that it was part of the Duke of Buckingham's original phase of construction. The section of wall exposed was 18.75 m to the north of the retaining wall to

the east of the east Fernery and the east face of the wall was 10.65 m east of the east edge of the lawn at the top of the bank. When these measurements are compared to Colen Campbell's plan in *Vitruvius Britannicus* the wall is found to correspond closely to the location of the eastern wall of the great courtyard to the east of the mansion. This wall must have been pulled down in the mid 19th century when this area was re-modelled to create a less formal arrangement with the bank replacing the tall brick wall.

13.3.19 The ground make up in the trench was different to each side of the wall although there was a consistent topsoil forming the bank over the whole area. On the east side of the wall there was a grey/brown silty clay fill with relatively few stones and some brick fragments [J.102.2]. Significant deposits of mortar were noted immediately to the east face of the wall, presumably from when the upper part of the wall was pulled down. There was topsoil above this which continued over the top of the wall and clearly this was laid to form the surface of the bank after the demolition of the wall. There was coarse, loose, stoney material on the west side of the wall [J.102.3] which was a softer, more ochre colour than on the east side and this continued up to the west face of the wall. This ochre coloured material (J.102.3) is similar to other 'ballast' type layers found elsewhere during the current works and in this location it is likely to be redeposited natural from the 17th-century landscaping works to form the platform for the house.

13.3.20 Trench towards Rushy Valley (J.103)

13.3.21 The main east-to-west drainage trench which extended for the full length of the terrace (G.100) continued eastwards beyond the front of the terrace, across the footpath and down the bank into the Rushy Valley where it linked via a man-hole to a further north-to-south drainage route. This eastern part of the trench extending down the bank has been numbered J.103.

13.3.22 There was a service pipe/cable c.70 cm below the ground surface at a point c.3.5 m to the east of the east end of the terrace and layers of made ground immediately west of this point. Then to the east of this there was a large area (c.6 m long) towards the top of the bank where the excavation for the trench was through a deep layer of pure sand, c.25 cm below the topsoil.

13.3.23 At the top of the bank, immediately to the east of the footpath and fence, a north-to-south brick wall [J.103.1] was exposed by the trenching works (Pl. J12-13). This wall was relatively crudely constructed from various types of brick (some red, some light yellow) bonded with cement mortar but they had shallow frogs and they were probably mid or later 19th century in date. The bricks measured c.7 cm tall x 11 cm x 23.5 cm. The top of the wall was 25 cm below the ground surface and the exposed eastern face of the wall was 62 cm tall (8 courses). This face incorporated a clay service pipe (12 cm diameter and 26 cm below top of wall) presumably to allow water to drain from the west to the east side.

13.3.24 The brickwork was set on a rough, pebbly/gravelly concrete foundation c.30 cm tall then with clay beneath this (at 1.4 m below ground level). The main exposed section of wall was 65 cm long (N-S) and c.57 cm wide (E-W) but it appeared that the wall ended c.50 cm to the north of the exposed section. When the wall was removed this section was pulled out easily up to the point 50 cm to the north suggesting that was the end point of the wall. The wall appeared to continue further to the south side. A later 20th-century plastic service pipe ran north-to-south along the top of the wall.

13.3.25 It is likely that this wall was a minor part of the 19th century landscaping to strengthen the top of the bank. The only feature here shown on historic maps is the path which survives today and which is first shown on the first edition 1876 OS map.

13.3.26 Rushy Valley (J.104)

13.3.27 The excavations in the Rushy Valley for the man-hole were extensive but they were some distance from the South Terrace as well as from associated features shown on historic maps. As this area was not the main focus of the current project a lower level of archaeological watching brief works was undertaken here. Recording was however undertaken in the large excavation undertaken for the man hole in the valley.

13.3.28 The excavation for the man-hole was located in the foot of the valley, 90 m to the east of the terrace and aligned with the main east-to-west trench in front of the terrace. The excavation was c.1.2 m deep. In the northern side of the excavation hole the uppermost c.30 cm was formed from a dark brown clay soil with some occasional brick fragments mixed in. Below this was an ochre colour clay soil without any stones although there were again occasional brick fragments towards the top of this layer. A north-to-south cut had been made in this (down to 90 cm below ground level) and a large (27 cm diameter) ceramic drainage pipe then set at the base of this. The cut was then backfilled with a stoney, ochre-colour layer with some chalk fragments and pebbles mixed in.

13.3.29 Immediately below the pipe the lowest 30 cm of the excavation (from 90 to 120 cm below the ground surface) was found to be a white, soft chalk.

13.4 Summary and conclusion

13.4.1 The works in the area to the east of the Terrace have various fragments of wall, drains and other minor features. Perhaps the most significant section of wall was exposed in a trench to the north-east of the Terrace, extending up the bank towards the Duke's Lawn. This appears to have formed part of the outer wall of the original courtyard to the east of the mansion which was then removed in the 19th century attempts to make the landscape less formal.

13.4.2 Another feature of interest in this area is a low east-to-west section of wall that is visible at the ground surface to the east of the Terrace which appears to have been constructed in the late 18th or early 19th century.

13.4.3 It is also worth mentioning that a previous investigation by Network Archaeology found brick remains on the north side of the Dukes steps. These pre-dated the steps and may have survived from a set of stables and other buildings known to have been located in this area.



Plate J.1: Wall [J.102.1] exposed at top of bank to east of Duke's Lawn, looking west



Plate J.2: Wall [J.102.1] exposed at top of bank to east of Duke's Lawn, looking west



Plate J.3: Wall [J.102.1] after truncation in current works, looking south-west



Plate J.4: Wall [J.102.1] after truncation in current works, looking south-east



Plate J.5: Stone topped drain [J.101.3] to east of terrace, looking north



Plate J.6: Stone topped drain [J.101.3] to east of terrace, looking north



Plate J.7: Stone topped drain [J.101.3] to east of terrace, looking south-east



Plate J.8: Line of Horseshoe profile pipes [J.100.5] to SE of East Fernery , looking east



Plate J.9: Low retaining wall to east of terrace [J.1.1], looking north-west



Plate J.10: Low retaining wall to east of terrace [J.1.1], looking north



Plate J.11: Wall [J.1.1] to left and small brick sump [J.1.2] exposed to east of terrace, looking north



Plate J.12: Wall [J.103.1] exposed at top of bank to Rushy Valley, looking south-west



Plate J.13: Wall [J.103.1] exposed at top of bank to Rushy Valley, looking west



Plate J.14: Pipe exposed in excavations in Rushy Valley [J.104], looking west



Plate J.15: Pipe exposed in excavations in Rushy Valley [J.104], looking north

14 GENERAL DISCUSSION AND CONCLUSION

14.1 Introduction

14.1.1 Cliveden is a Grade I listed building, a Grade I registered park and garden and a site of national heritage significance. This significance is based on the history of the site, the landscape, the architecture of the buildings and the various prominent individuals associated with Cliveden. Between 2013 and 2017 the National Trust have been undertaking a series of conservation and repair works which have focused on the South Terrace at Cliveden but which have also included drainage works in adjacent areas. These works have included an intermittent archaeological watching brief to record previously hidden parts of the structure and this has helped enhance our understanding of the site.

14.1.2 The South Terrace has long been believed to be the only (or main) surviving element from the great complex constructed by the Duke of Buckingham at Cliveden in the 1670s. The current investigation has suggested that the terrace has a more complex history than previously believed with numerous phases of alteration, some of which appear to have been undertaken soon after the original construction or possibly even during the initial construction phase.

14.2 Evidence relating to the Duke of Buckingham's Cliveden (1670s)

14.2.1 The Duke of Buckingham is known to have acquired the site at Cliveden in the later 1660s and to have begun laying out a large new mansion in the early 1670s, apparently to create a palace to share with his lover, the Countess of Shrewsbury. Relatively little is known for certain regarding the Duke's palace because the house itself burnt to the ground in 1795 and there are no original drawings surviving from the 17th century. Plans and drawings of Cliveden do survive in Colen Campbell's *Vitruvius Britannicus* but this was published about 40 years after the Duke's construction works at Cliveden ended (published in 1717) so they may include subsequent changes, and also there has always been some doubt regarding the extent to which they were proposal drawings rather than an as-built record.

14.2.2 The Duke of Buckingham is known to have been a flamboyant character with lavish tastes and there are documentary references to the 'extraordinary expense' of his works at Cliveden. It is known that his construction works included a major initial phase of earth moving to create an artificial platform for his mansion with southward views down towards the Thames. This platform is understood to have been created by moving vast amounts of earth from the north side of where the mansion now stands southwards to create the 'step' (ie the terrace) down to where the parterre is now located.

14.2.3 *Buried 17th-century walls exposed in current works*

14.2.4 The current archaeological works have almost certainly identified many structural features relating to this 'extraordinary expense' and the great phase of landscaping in the 17th century. These features have included numerous buried sections of wall constructed from a soft red brick with a soft lime mortar and these are confidently believed to date from the 1670s phase. The most dramatic sections of wall have been exposed at the level of the foot of the terrace and they have included:

- A 'plinth' type structure beneath the front wall of terrace;
- An east-to-west wall c.6 m in front of the front of the terrace;
- North-to-south walls beneath the Borghese Balustrade and apparently continuing south beyond it.

14.2.5 Each of these walls are huge, c.1.3 - 1.45 m wide, and it is assumed that they formed part of the initial landscaping works to establish the platform for the mansion and other structures

- above. The character of these walls is reminiscent of fortifications and it may well be that they illustrate the military engineering background of William Winde, the architect who is believed to have been responsible for Cliveden. Winde had previous experience of constructing fortifications including work at Gravesend Reach in 1667.
- 14.2.6 The main-to-west 'plinth' type wall beneath the front wall of the terrace is easy to understand and this clearly would have formed the foundation for the original front wall of the terrace which is believed to have been replaced in the 18th century (discussed further below).
- 14.2.7 Interpreting the east-to-west wall c.6 m in front of the terrace is more speculative but it seems very possible that was part of a planned series of terraces with at least two similar steps down in height rather than the current one major step. This is hinted at by John Evelyn's 1679 comment that Cliveden was 'somewhat like Frascati' where there were a number of villas set on hill sides (eg Villa Aldobrandini) with more than one level of terrace. It may also be significant to note William Winde's 1680s designs for Powys Castle which again included a series of terraced steps (Fig 5). The Duke's vision for the landscape south of the mansion may have been quite different to the parterre we have today.
- 14.2.8 The north-to-south walls on which the later Borghese Balustrade was built are also intriguing parts of the original complex and again it may be significant to note that Winde's plans for Powys Castle had a long ramp enclosing one end of the terraces at that site. An early 18th century plan showing a proposal for the parterre to the south of the terrace shows long shallow staircases descending southwards at each end of the terrace and the walls exposed in the current project could correspond with such a layout. These walls align closely with the existing ends of the terrace and it is assumed that they must have been intended to continue northwards to either form a pair of ramps or shallow staircases from the terrace.
- 14.2.9 Apparent evidence of another large brick structure has also been exposed immediately in front of the East Fernery and although this is slightly inset (to the west of) the main buried north-to-south wall it could be that this relates to the former long staircases.
- 14.2.10 It may of course be that some of the recently exposed walls were intended for structures which were never actually constructed or that plans were altered during the construction works. There is an intriguing quote from a letter that the Duke wrote in 1677 while imprisoned in the Tower of London which suggests that he may have to pull down part of the structure due to a mistake by his builder at a colossal cost to himself. We don't know which part of Cliveden this referred to or whether the Duke actually carried through with this but it does add to the impression that the Duke was the type of person who may have altered his plans on something of a whim, regardless of the cost.
- 14.2.11 If there was once a much grander layout at Cliveden with a series of terraces like at Powys Castle it would seem surprising that there's so little historical evidence of it and also surprising that it would then be so comprehensively cleared away by the Earl of Orkney when the Earl is known to have been financially constrained. It seems most likely that the Duke of Buckingham originally had a grand scheme in mind with a series of terraces but that these were never completed. It may be that the South Terrace we see today was a compromise or scaled-down version of what was originally planned, and started but abandoned unfinished. The impression has always been that the Duke might never have completed his palace and it may be that one of these uncompleted areas was the terrace.
- 14.2.12 The inverted areas immediately each end of the terrace, where the plan steps in, tentatively suggest the possibility of a pair of missing elements from a design or an uncompleted scheme. The regularity of the plan in Vitruvius Britannicus looks like it was meant to have a perfectly rectangular layout rather than with the inverted corners as now and it could be significant to

note that there is an apparent discrepancy between the plan and elevation in this regard. The elevation shows the N-S service ranges (stables, laundry etc) aligned with the South Terrace staircases whereas the plan clearly shows them outside the line of the staircases. This could suggest that the terrace was intended to stretch across the full width of the complex behind.

14.2.13 Another possible design influence worth noting is Burleigh (or Burley)-on-the-hill in Rutland particularly because Horace Walpole, writing towards the end of the 18th century, stated that Cliveden 'was evidently copied in little from his father's seat Burleigh on the Hill' (Walpole, 1798). Burleigh-on-the-Hill was a site acquired in the early 17th century by the Duke's father (George Villiers the first Duke of Buckingham, 1592-1628) where he then proceeded to construct a mansion in the 1620s. The second Duke (born in 1628) inherited the property as an infant after the death of his father and the original house was then largely destroyed in the Civil War. The replacement mansion that we see today, built in late 17th-century after the estate had been sold, has clear similarities with Cliveden, particularly due to its 256 m long terrace on its south side with a central staircase up to it and blind arches. Research into the original house at Burleigh has not been undertaken in the current project but it's clearly possible that it also had a similar terrace and it may be that the Duke was influenced by this when planning his palace at Cliveden.

14.2.14 Among the many other sections of wall that have been exposed during the current works have been three that are believed to have formed part of the large courtyards to either side of the mansion and which are shown on the plan from Vitruvius Britannicus as well as subsequent plans from the 18th and early 19th century. One of these walls was from the eastern side of the east courtyard while the other two were from the west and south walls of the west courtyard.

14.2.15 ***Other Evidence relating to 17th-century works***

14.2.16 Apart from the main buried walls discussed above various other significant features which are believed to survive from the Duke of Buckingham's 17th-century terrace at Cliveden have also been exposed. These features include what are believed to have been two light wells within the main dome of the Sounding Chamber which would have risen up to the terrace surface, apparently immediately in front of the mansion. They strongly appear to have formed part of the primary structure of the Sounding Chamber, which itself is believed to have been part of the 17th-century phase of works, and although they were probably primarily to help illuminate the subterranean chambers they may also have been intended to allow music played in the chamber below to be enjoyed on the terrace.

14.2.17 The upper part of each light well was reformed, probably in the 19th century, so we do not have a full understanding of their original form but there is some possible evidence in a painting undertaken by Hendrik de Cort in c.1798, after the fire which destroyed the original mansion. This painting clearly shows the south wall of the mansion and there appears to be a linear feature shown in the floor, immediately in front of the wall where it meets the terrace. It is not clear what this feature is but one plausible interpretation is that it was an east-to-west trench which would have been connected to the light wells.

14.2.18 Also in the Sounding Chamber the removal of plaster in the current project has exposed a blocked arch in the east wall which it appears would have formerly been a doorway through to another area. There is an interesting reference made by Daniel Defoe in 1724 to an internal staircase which linked the central chamber of the terrace to the mansion and the former chamber that this blocked archway led to would be a likely place for this staircase. This possibility is also supported by further evidence in Hendrik de Cort's c.1798 painting which shows a rectangular plan opening within the ground floor which would have provided access down into a basement area. It strongly appears that this basement area would have been immediately east of the Sounding Chamber. The form of this opening in the ground floor is

strongly suggestive of a stairwell although we can see from a ladder propped against the void that the staircase itself had been destroyed.

14.2.19 The main terrace is believed to have been refronted in the 18th century so relatively little of the visible structure survives from the Duke's original phase of construction but the recent excavation works have exposed various important elements which are believed to be primary. Of particular interest is a long east-to-west wall which extends along much of the length of the terrace, c.1.8 m to the north of the south balustrade, and a series of arched vaults between this wall and the balustrade. It is believed that these vaults covered over a series of niches that originally formed the front wall of the terrace. Such an arrangement of niches is shown on the elevation in Vitruvius Britannicus and some fragmentary evidence of former niches has been found in recent exploratory works. It could be that the vaulting along the front of the terrace was a secondary alteration, for example relating to the formation of the blind arches in the c.1760s-70s, but their form is suggestive of them covering over some form of an open structure beneath (eg niches). This is also supported by the fact that the vaulting is covered by puddling clay to divert rain water away from the front c.2 m of the terrace.

14.2.20 This is further evidence to suggest that the original terrace was much closer to the form shown in the elevation in Vitruvius Britannicus than has previously been believed. One aspect of the elevation in Vitruvius Britannicus which has always been particularly doubtful are the elaborate staircases where the ferneries now stand. No particular evidence has been exposed to clarify whether these were ever constructed or not but a number of intriguing traces from possible former, curved niche-type structures have been found on the footings in the East Fernery. These fragmentary traces, which clearly pre-date the Fernery, must relate to the 17th century phase of construction and they could suggest that the niches extended right along the front, including where the ferneries were later built. Alternatively they could survive from some curved features inside a former staircase similar to those shown on the Vitruvius Britannicus drawings.

14.2.21 Other significant features revealed have been parts of the former north wall of the terrace, either side of the mansion, from when the areas immediately to the north were significantly lower than they are today, prior to the construction of the Duke's Lawn and West Lawn. In the 17th century phase these areas to the north of the terrace were large enclosed yards and isolated fragments of these courtyard walls have also been found.

14.3 Features revealed from the 18th and 19th centuries

14.3.1 The current investigation has confirmed that the South Terrace, and indeed Cliveden generally, has undergone considerable evolution and regular change since its original construction in the 17th century. One of the most significant of the early alterations was the construction of the central staircase, probably in the 1720s to replace the previous end staircases, and the current works have suggested that this has seen many phases of repair, alteration and/or reconstruction since then.

14.3.2 One of the most interesting features of the staircase revealed has been a decorative brick scheme, beneath the render cladding, which included a series of rubbed brick pilasters with very fine white jointing. The arrangement of pilasters was broadly similar to that shown on views from the 1750s but the dismantling of the staircase exposed evidence that strongly suggests that the fine brick pilasters post-dated the 1795 fire and effectively formed a cladding added onto an existing core structure. This evidence included some form of an extensive dark coating to the core of the wall, immediately behind the fine brick, but none on the pristine bricks at the surface. The strong impression was that the skin including the pilasters was

- probably added to repair the fire-damaged structure, quite possibly attempting to reconstruct the structure's previous form. This may have incorporated parts of the previous skin but the refacing appears to have been extensive. The dark coating may have been an ashy wash which poured over the staircase rather than direct damage from the fire and it may be that the staircase remained in a ruined state for a considerable period after the fire.
- 14.3.3 Another piece of evidence suggesting that this skin post dated the fire were a large number of pieces of moulded stones which are likely to have come from the ruined mansion, or possibly from a major reconstruction of the front of the terrace, probably undertaken in the 1760s or 1770s.
- 14.3.4 The dismantling of the staircase showed that the entire construction of the lower parts of each flight (the lower flight and lower landings) had distinctly different types of construction to each other and clearly they were from different phases. The core of the eastern stairs (lower half) appeared later than that of the western flights and it may be that this side of the stairs were more substantially reconstructed after the 1795 fire than the west half.
- 14.3.5 It is also however important to mention the date 1739 which had been inscribed into the jamb of one of the niches. This brick appeared in-situ, rather than being reused so presumably this part of the face does survive from the early 18th century.
- 14.3.6 The evidence exposed during the works on the staircase was complicated and it was not possible to gain a definitive understanding of its phasing but it was clear that the structure had undergone extensive alterations since its first construction.
- 14.3.7 As mentioned above another of the main alterations to the terrace undertaken in the 18th century appears to have been the reconstruction of the entire front wall, probably in the 1760s or 1770s, with the current, relatively plain blind arcade. The character of this arcade matches that shown in several views from the 1770s but it is distinctly different to the terrace front shown on views from the 1750s and also on the drawings included in *Vitruvius Britannicus*.
- 14.3.8 The most likely explanation for this refronting of the terrace was that the structure showing signs of structural movement. A large east-west crack has been noted in the central Sounding chamber suggesting the front of the terrace was moving southwards, away from the mansion, and another crack was observed in the top of a vault towards the front of the terrace in a trial trench on top of the structure. In addition a tie-bar was exposed on top of the terrace, immediately above the Sounding Chamber, and although this was only partly in-situ it is likely that this was added to counter structural movement. A blind arcade would clearly have formed a more substantial retaining wall than the row of niches which are believed to have previously formed the front.
- 14.3.9 The current project supports the belief that the ferneries were early 18th century additions, possibly to designs by Thomas Archer. They are shown on an undated proposal drawing (probably sometime between 1713-23) as well as on several mid 18th century views but archaeological evidence exposed in the current works appears to confirm that they are secondary additions. As referred to above traces of an earlier series of curved features (niches?) have been seen on the top of the base on which the front wall of the East Fernery now sits. It may be that when the central staircase was constructed the previous end staircases became redundant and were replaced by the ferneries. The rusticated brickwork in the face of the two ferneries is particularly reminiscent of Thomas Archer's pavilion at Wrest Park (1709-11).
- 14.3.10 The current work has confirmed that the internal structure of these chambers were comprehensively reconstructed in the 19th century (sometime between 1838 and 1847) when they were converted to Orangeries. This work included lowering the floor level inside,

replacing the previous roof with a set of brick jack-arches supported by inserted cast-iron columns, forming roof lights above which projecting above the terrace surface and lining the interiors with a tuck-pointed brickwork skin. The current project has revealed evidence of the bases to these rooflights, traces of the previous plastered internal skin behind the later brickwork and also evidence of the former external steps in the front wall of the East Fernery.

14.3.11 Towards the end of the 19th century, after Cliveden was acquired by William Waldorf Astor, the Orangeries were further altered and subdivided into two spaces. Ferneries were created in the two larger spaces and water tanks created in the smaller spaces. The upstanding roof lights were removed, clearly because ferneries would have required a darker space than the previous orangeries, and ornamental ironwork replaced the previous south-facing windows.

14.3.12 In this period new water tanks were also formed within the two barrel vaulted chambers, immediately adjacent to those created within former Orangeries, to collect rain water from the terrace surface. This water may have been used to irrigate the gardens to the south but it may well also (or alternatively) have been intended to be used in an emergency to fight fire. The importance of this would clearly have been felt at Cliveden considering the fires that destroyed two previous mansions at the site.

14.3.13 Other evidence of the 19th-century works at Cliveden to be exposed within the recent works has included long limecrete footings just in front of the blind arcade which are believed to have formed raised beds to allow climbing plants to grow up the face of the terrace. These footings are believed to have been added in the 1850 or early 1860s after the Duke and Duchess of Sutherland acquired Cliveden and other limecrete features from this period have included what appears to have been edge pieces to a path to the north side of the West Lawn.

14.3.14 Evidence has also been revealed from various 20th-century phases of works to the terrace including bitumen-lined drains on top of the terrace, render repairs to the staircase.

14.3.15 End piece

14.3.16 The recent project has greatly enhanced our understanding of the South Terrace but we can be confident that there still remains many hidden or buried features through which we can learn more in the future. In particular it would be useful to undertake further investigations in front of the terrace to determine the extent of the buried walls from the Duke of Buckingham's phase of constructions (a possible lower terrace) and also to see whether further evidence survives behind the blind arcade of the former niches.

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1761 Map of Cliveden by Andrews
1818 Auction plan

Other sources

- <https://www.youtube.com/watch?v=jG-IHRS1Mms>

APPENDIX B SITE SUMMARY DETAILS

Site name:	Cliveden South Terrace
Site code:	TACST13
Grid Reference	SU91026 85169
Type:	Building recording and archaeological watching brief
Date and duration:	Several phases from 2013 until 2016.
Summary of Results:	Several buried sections of wall exposed surviving from a large house and gardens laid out in the 1670s by the Duke of Buckingham. Repairs to grand external staircase have clarified how that structure was constructed and helped confirm that it was a secondary addition (1720s). Drainage works have included excavating the top c.0.5 m of the terrace surface and this has exposed numerous drains, vaults and sections of wall.
Area of Site	0.5 ha
Location of archive:	The archive is currently held at OA, Janus House, Osney Mead, Oxford, OX2 0ES, and will be deposited with Buckinghamshire County Museum Services in due course, under the following accession number: AYBCM: 2013.40

APPENDIX C CLIVEDEN SOUTH TERRACE: TABLE OF FEATURES

AREA A	STAIRCASE
A.1	<i>Rendered face to staircase</i>
A.1.1	Secondary repair (early 20 th C ?) to render covering staircase
A.1.2	Hard render cladding to parts of staircase, probably Roman cement and probably surviving from 19 th century works
A.1.3	Coarse repair to render which covers the staircase (possibly mid 20 th C).
A.2	<i>Decorative brickwork immediately beneath render</i>
A.2.1	Fine-jointed rubbed brickwork pilasters and bands beneath render
A.2.2	Panels of lower quality brickwork between A.2.1
A.3	<i>Carcass of staircase – east side</i>
A.3.1	Inner brick wall.
A.3.2	‘infill’ wall of staircase (east side) immediately behind A.2 and incorporating stone blocks.
A.3.3	Foundation beneath the east lower flight of stairs
A.3.4	Truncated rump of brickwork to east of staircase which appears to have formerly continued eastwards.
A.3.5	Truncated rump of brickwork to east of staircase which appears to have formerly continued eastwards.
A.4	<i>Carcass of staircase – west side</i>
A.4.1	Rough brick wall behind face with pilasters in west carcass
A.4.2	Inner wall ‘face’ 37 cm behind A.4.1.
AREA B	BLIND ARCADE
B.1	<i>Main blind arcade between staircase and ferneries</i>
B.2	<i>Arcading behind staircase</i>
B.2.1	Truncated remains of former projecting keystones to arcade behind staircase
B.2.2	Truncated impost band behind staircase where face cut back to allow for mid 19 th C render.
B.2.3	V-shaped grooves cut in face of blind arcade behind staircase to allow for rusticated render.
B.2.4	Evidence of former extension to cornice in blind arcade wall behind staircase.
B.2.5	Long stones in wall to rear of staircase which it appears would have formed part of a previous cornice. Exposed by removal of render.
B.3	<i>Investigations undertaken by NT in 2012</i>
B.3.1	Traces of former niches found by NT in 2012 behind blind arcade
AREA C	FERNERIES AND WATER TANKS
C.1.1	Evidence of former external steps against south wall of West Fernery
C.1.2	Tie-bar plates in south wall
C.1.3	Tie-bar plates in west wall
C.1.4	Evidence of slight change in stonework behind cornice in west wall marking edge of terrace.
C.1.5	Windows in north wall of West Fernery
C.1.6	Rebuilt patch of brick in vault of West Fernery
C.1.7	Circular marks on walls of West Fernery
C.1.9	Tap exposed in floor of West Fernery
C.2.1	Circular marks on wall of East Fernery
C.2.2	Windows in north wall of East Fernery
C.2.3	Large east-west wall exposed in floor of East Fernery
C.2.4	Brick wall footing exposed in trench in floor of East Fernery.
C.2.5	Circular imprint in top of C.2.4 within East Fernery
C.2.6	Evidence exposed by removal of low bank against front wall of East Fernery. Relating to former steps.
C.4	Trial Pit in East Fernery Water Tank.

C.4.1	Wall in hole in East Fernery Water Tank
C.100	Excavations in floor of West Fernery
C.100.1	Large east-to-west wall exposed in trench in West Fernery
C.101	Trial pit in floor of West Fernery Water Tank
C.101.1	Wall in pit in West Fernery Water Tank
AREA D	SOUNDING CHAMBERS
D.1	Inner Sounding Chamber
D.1.1	Primary sloped brick walls and arched top of light wells
D.1.2	Curved base to light wells
D.1.3	Reconstructed upper parts of sloped walls to light wells
D.1.4	Roughly horizontal projection at top of light wells with arched top.
D.1.5	Primary vertical wall at uppermost end of each light well.
D.1.6	Small access hatch in top of D.1.4
D.1.7	Void above light wells
D.1.8	Blocked archway (door) in east wall of D.1
D.2	<i>Central Sounding Chamber</i>
D.3	<i>Entrance Passage to south of Sounding Chambers</i>
D.3.1	Straight joints to each side of entrance passage
D.3.2	Horizontal brick bands which may be evidence of former cornice.
D.100	<i>Pit dug in floor on west side of D.3 and SW corner of D2.</i>
D.100.1	Foundation at SW corner of central chamber
D.100.2	Foundation of wall on west side of entrance passage
D.100.3	Slot at south end of G.100.2
D.100.4	Hard mortar layer to south of slot and obscuring foundations behind.
AREA E	BARREL VAULTED CHAMBERS
E.1	<i>West Barrel Vaulted Chamber</i>
E.1.1	Main E-W wall at southern end of E.1
E.1.2	Blind arch blocking at southern end of E.1 but later than the rest of the blind arch blocking. Probably 19 th century.
E.1.3	c.1890s brick wall at southern end of E.1 for water tank.
E.1.4	Small fragmentary pier of brick to side of archway. Just behind blind arcade blocking and to north of E.1.5.
E.1.5	Fragmentary pier of brick to south of E.1.4.
E.1.6	Wall base in pit in West Barrel Vault Chamber.
E.2	<i>East Barrel Vaulted Chamber</i>
E.3	<i>Pit dug in floor of West Barrel Vaulted Chamber</i>
AREA F	TERRACE SURFACE AND SUBSTRUCTURE
F.1	<i>Western third of the terrace</i>
F.1.1	Brick vaults over West Fernery. Exposed from above during current project
F.1.2	Base for skylight within brick vaults
F.1.3	Drain along northern edge of fernery, exposed in pit (Trench F.100). Possibly 20 th -century (1950s works?) and certainly after the formation of the West Lawn.
F.1.4	Layer of bitumen beneath stone paving slabs in eastern half of F.1
F.1.5	Mid 20 th -century concrete slab beneath F.1.4.
F.1.6	Ochre coloured stoney fill beneath F.1.5
F.1.7	Distinct deposited layer beneath F.1.6 which incorporated a lot of charred material.
F.1.8	North face of the western part of the northern terrace wall
F.1.9	three simple sloped brick buttresses c.90 cm wide against north face of the terrace.
F.1.10	semi-circular structures blocking windows in north wall of Western Fernery conventional rainwater downpipe hopper exposed against north wall of West Fernery during excavations

F.1.11	Drainage hopper exposed against north wall of terrace.
F.1.12	Opening in north face of terrace for former drainage channel. Imprint around opening of possible former large hopper.
F.1.13	N-S drain capped by stones. Immediately to east of vaults above West Fernery.
F.1.14	NE-SW drain connected to F.1.3 at the south end.
F.1.15	V-shaped drainage channel within which F.1.3 was formed. F.1.15 fed into F.1.13. This pre-dates formation of West Lawn in 3 rd quarter of 19 th century.
F.1.16	Remains of the former north wall of the terrace to the west of the mansion but to the east of the brick vaults over the fernery.
F.1.17	Small E-W gully exposed immediately on south side of F.1.16.
F.1.18	Short section of north wall of terrace exposed in trench close to SW corner of mansion. The north edge of this wall is c.1.4 m to north of south face of mansion.
F.2	<i>Central third of the terrace</i>
F.2.1	E-W wall along terrace, c.1.8m to the north of the southern balustrade and 0.5 m below the terrace surface. Also with a series of associated brick vaults immediately to the south.
F.2.2	Projecting E-W wall in front of the centre of the mansion.
F.2.3	Cast-iron pipes (E-W) towards front of the terrace, set on top of the puddling clay layer.
F.2.4	Brick vaults above landing at top of stairs.
F.2.5	Brick 'shelf' exposed in front of front wall of mansion.
F.2.6	Drain exposed within terrace surface in Area F2
F.2.7	Drain exposed within terrace surface in Area F2
F.2.8	Drain exposed within terrace surface in Area F2
F.2.9	Drain exposed within terrace surface in Area F2
F.2.10	Drain exposed within terrace surface in Area F2
F.2.11	Drain exposed within terrace surface in Area F2
F.2.12	Drain exposed within terrace surface in Area F2
F.2.13	Drain exposed within terrace surface in Area F2
F.2.14	Drain exposed within terrace surface in Area F2
F.2.15	Drain exposed within terrace surface in Area F2
F.2.16	Drain exposed within terrace surface in Area F2
F.2.17	Drain exposed within terrace surface in Area F2
F.2.18	Drain exposed within terrace surface in Area F2
F.2.19	Drain exposed within terrace surface in Area F2
F.2.20	Drain exposed within terrace surface in Area F2
F.2.21	Drain exposed within terrace surface in Area F2
F.2.22	Drain exposed within terrace surface in Area F2
F.2.23	Drain exposed within terrace surface in Area F2
F.2.24	Drain exposed within terrace surface in Area F2
F.2.25	Drain exposed within terrace surface in Area F2
F.2.26	Drainage feature exposed by the NW pier at the top of the stairs. Comprises the base of an earthenware pipe and a shallow channel extending around it.
F.3	<i>Eastern third of the terrace</i>
F.3.1	Brick vaults over East Fernery and water tank
F.3.2	Remains of former skylight within F.3.1
F.3.3	N-S channel immediately west of vaults (F.3.1)
F.3.4	Channel immediately west of F.3.3 and orientated NNW-SSE.
F.3.5	Clay puddling band, across front of the terrace and returning northwards to west of vaults.
F.3.6	E-W drainage pipe set within puddling clay
F.3.7	Culvert to west of N-S branch of F.3.5.
F.3.8	Brick-lined culvert.
F.3.9	Brick-lined culvert
F.3.10	Brick-lined culvert
F.3.11	Cut-back part of north wall of terrace
F.3.12	Part of north wall of terrace which has not been cut back or lost its face.

F.3.13	East to west culvert immediately south of F.3.11.
F.3.14	N-S culvert exposed in same area as F.3.11.
F.3.15	SW-NE culvert exposed in same area as F.3.11
F.3.16	Eastern end of north wall of terrace where it retains its face.
F.100	Trial trench dug in 2014 across the junction between the West Lawn and the northern edge of the terrace. (was called Test Pit 5 during site work)
F.101	Trial trench dug in 2014 across the full width of the western part of the terrace. (was called TP7 during site work).
F.101.1	Top of brick arch exposed in trial trench F.101.
F.101.2	Brick-lined drain (F.101.2) exposed in F.101. T-shaped plan with E-W section and N-S.
F.101.3	Broadly north-to-south brick drain exposed to the west of drain F.101.2 and probably slightly later in date.
F.102	Trial trench dug in 2014 on top of terrace at SW corner of terrace. (was called TP9 during site work).
F.103	Trial trench dug in 2014 on top of terrace at SE corner of mansion. (was called TP2 during site work)
F.104	Trial trench dug in 2014 on top of terrace at junction between terrace and bank by Duke's Lawn (was called F.104 during site work).
AREA G	AREA IN FRONT OF TERRACE
G.100	Main drainage 'trunk' trench extending E-W in front of terrace
G.100.1	Disturbed brown soil forming uppermost 0.6 m in excavation at west end of G.100 for junction box. Loose light brown, clay/silt
G.100.2	Distinct E-W band of red brick dust in the west side of the excavation extending westwards away from the soakaway at west end of G.100
G.100.3	Coarse, very stoney layer at c.1.15 m below surface of excavation for soakaway at west end of G.100. Ochre colour and interpreted as natural (or possibly redeposited natural).
G.100.4	Small brick sump c.1.5 m to north of soakaway excavation at western end of G.100. Later 19 th or early 20 th -century date.
G.100.5	Very large 'plinth' type wall from 17 th -century phase.
G.100.6	Apparent dump of red brick dust similar to G.100.2 but to the east of it.
G.100.7	Topsoil in man hole excavation
G.100.8	A dark brown, pebbly silt subsoil down to 0.55 m below surface in man hole excavation
G.100.9	A chocolate brown loose pebbly layer, in man hole excavation, to 0.85 m
G.100.10	A lighter stoney layer, in man hole excavation, to 1.15 m
G.100.11	A slightly darker pebbly layer, in man hole excavation, to 1.4 m
G.100.12	A slightly lighter layer, in man hole excavation, to 1.7 m
G.100.13	A chocolatey layer in man hole excavation, down to 2.2 m
G.100.14	Cast-iron pipe exposed at 5.5 m to east of the west edge of the West Fernery
G.100.15	Small brick lined culvert
G.100.16	Extensive layer of fine sand in G.100, aligned with a point just to west of portico. Much finer than coarser layers further west.
G.100.17	Large wall base exposed at east end of terrace.
G.100.18	Simple brick drainage feature exposed in G.100 in front of centre of East Fernery.
G.101 – G.108	<i>Eight pits dug in front of terrace for slide foundations.</i>
G.101.1	Large 17 th -century wall exposed in four of the slide pits.
G.109	<i>Northernmost trial pit dug near eastern N-S return of Borghese Balustrade.</i>
G.109.1	Topsoil
G.110	<i>Trial pit dug near eastern N-S return of Borghese Balustrade.</i>
G.110.1	Topsoil
G.110.2	stoney subsoil (G.110.2)

G.110.3	demolition layer down to 0.25 m below ground with numerous fragments of red brick (G.110.3).
G.110.4	Below this was a 5 cm deep layer largely formed from white mortar and occasional brick fragments.
G.110.5	and there was a Below this there was a grey/brown coarse, stoney soil (G.110.4) which continued just over the top of the surviving wall.
G.110.6	Below this was a layer of pure ochre-coloured sand (G.110.5) without any inclusions, matching the sand found widely in this area.
G.111	<i>Trial pit dug immediately against the eastern N-S return of Borghese Balustrade.</i>
G.111.1	Top soil
G.111.2	a grey silty subsoil (G.111.2) with fewer brick fragments than in other holes.
G.112	<i>Pit dug immediately against the eastern N-S return of Borghese Balustrade.</i>
G.113	<i>Trial pit dug against south side of Borghese Balustrade at very eastern end.</i>
G.113.1	Dark grey clean topsoil
G.113.2	Flint gravel deposit with occasional brick fragments (G.113.2) which could form a subsoil for G.113.1.
G.113.3	Cleaner soil (former topsoil?) beneath line at 0.27 m down which could represent a former surface.
G.113.4	Light orange-brown clay layer with occasional flint gravel inclusions and brick fragments. A small piece of brickwork was found which could have been moulded to form part of a volute.
G.113.5	Rubble layer with broken bricks and a creamy coloured lime mortar from the demolition of the 17 th -century wall (G.113.6) which was found immediately beneath
G.113.6	The section of the 17 th -century wall found in G.113.
G.114	<i>Trial pit dug against west end of Borghese Balustrade</i>
G.115	<i>Soakaway trench dug immediately east of the staircase</i>
G.116	<i>Soakaway trench dug immediately west of the staircase</i>
G.117	<i>Excavation immediately in front of West Fernery</i>
G.118	<i>Trench immediately in front of centre of East Fernery</i>
G.118.1	Wide wall found in G.118. Probably a continuation of G.101.1
G.119	<i>General ground reduction and landscaping works in front of Blind Arcade</i>
G.119.1	Outline of large brick base in front of East Fernery
G.119.2	Brick features exposed immediately in front of West Fernery
G.119.3	Limecrete edging exposed in front of west half of blind arcade
G.119.4	Limecrete edging exposed in front of east half of blind arcade
G.119.5	Circular plant pot bases in front of Sounding Chamber entrance
G.120	<i>Eastern trial pit to west side of Blind Arcade</i>
G.120.1	Wall within G.120
G.121	<i>Western trial pit to west side of Blind Arcade</i>
G.121.1	Wall within G.121
G.122	Branch trench in front of portico running towards main trunk trench (G.100)
AREA H	AREA TO WEST OF TERRACE AND AROUND PAVILION
H.100	<i>Southern (lower) section of main N-S trench in Area H</i>
H.100.1	Large E-W wall found to west of terrace and aligned with front wall of West Fernery.
H.100.2	L-shaped wall found to the west of terrace and aligned with rear wall of West Fernery. Probably part of courtyard wall from 17 th century phase.
H.101	<i>Northern (upper) section of main N-S trench in Area H</i>
H.101.1	Hardcore rubble found in trench immediately west of pavilion and relating to mid 19 th century construction of pavilion
H.101.2	Silty soil found beneath 8.1.1.
H.101.3	N-S wall found immediately north of the pavilion. Possibly from 17 th century works
H.101.4	E-W wall found immediately north of the pavilion. Probably early 19 th century addition
H.101.5	Wall found to N of pavilion.

AREA I	WEST LAWN AND DUKE'S LAWN
<i>I.100</i>	<i>Lifting flagstones around edge of West Lawn</i>
I.100.1	East-west footing from former kerb in area to north of West Lawn.
I.100.2	East-west footing from former kerb in area to north of West Lawn.
I.100.3	Three-sided brick structure associated with I.100
<i>I.101</i>	<i>Various trenches in West Lawn into soakaway</i>
<i>1.102</i>	<i>N-S trench to north of West Lawn and extending beneath balustrade</i>
<i>I.103</i>	<i>Trench around perimeter of West Lawn</i>
<i>I.104</i>	<i>SW-NE trench across Duke's Lawn.</i>
<i>I.105</i>	<i>Trench at SW corner of Duke's Lawn</i>
I.105.1	Large N-S wall found in I.105 at SW corner of Duke's Lawn
<i>I.106</i>	<i>East-to-west trench immediately north of the western half of the terrace (by West Lawn).</i>
<i>I.107</i>	<i>Trial trench dug in 2014 at NW corner of West Lawn.</i>
AREA J	AREA TO EAST OF TERRACE AND RUSHY VALLEY
<i>J.1</i>	<i>Surviving fragment of wall to east of terrace.</i>
J.1.1	Low retaining wall to east of terrace and aligned with front wall of terrace.
J.1.2	Small brick sump or pipe junction exposed at east end of J.1.1.
<i>J.100</i>	<i>Minor branch trench to the north of main drainage trunk trench</i>
J.100.1	Plastic pipe found in J.100
J.100.2	Concrete cable cover with cable beneath found in J.100
J.100.3	Electrical cable with fabric wrapped around. Found in J.100
J.100.4	Ceramic pipe with threaded end found in J.100
J.100.5	Horseshoe profile half-pipe found in J.100
J.100.6	Glazed earthenware half pipes stamped 'Doulton & Co' found in J.100.
<i>J.101</i>	<i>Trench to east of sub-station</i>
J.101.1	Electrical cable found in J.3
J.101.2	Simple surface formed from bricks laid in J.3. Possibly former path.
J.101.3	Brick-lined drain exposed to NE of substation.
<i>J.102</i>	<i>Trench up bank towards Duke's Lawn</i>
J.102.1	Section of wall exposed in bank up towards Duke's Lawn. Would have been part of retaining wall for courtyard east of mansion.
J.102.2	Fill on east side of wall (J.4.1)
J.102.3	Ochre colour stoney fill on west side of wall (J.4.1)
<i>J.103</i>	<i>Trench down bank towards Rushy Valley</i>
<i>J.104</i>	<i>Trench in Rushy Valley</i>

APPENDIX D

CLIVEDEN SOUTH TERRACE: MOULDED STONE INVENTORY

Cliveden South Terrace: Inventory of Moulded Stones

From 2013 to 2017 Oxford Archaeology (OA) undertook a series of archaeological works related to the South Terrace at Cliveden. A series of moulded stones were discovered at various stages of the project and a simple inventory of these has been created with a single number sequence. Basic recording was undertaken on each including photography, measurements and brief descriptions.

Stones Nos 1-73

The initial set of stones were found in October 2013 during the partial dismantling of the staircase, particularly of the walls which support the eastern lower landing. These stones had been reused as packing pieces behind the brick face or they had been set backwards to form flat-faced dressings courses. Most of these stones were placed within a vaulted space in the staircase which was then sealed shut but the more significant stones (including Nos 80-99) were retained by the National Trust.

Stones 80-99

Nov-Dec 2013 a set of moulded stones found during the dismantling of the eastern staircase were recorded separately to the stones above. These stones had been reused similarly to Nos 1-73 but they had particularly interesting mouldings and were identified for retention by the National Trust and are currently stored in the Woodyard Store at Cliveden.

Stones 74-79 & 101-106

In January 2014 a further set of stones were recorded, again after being found during the dismantling of the staircase.

Nos 110-139:

In September and October 2015 a further group of stones were added to the inventory. These additional stones had been used in the construction of the plinth below the balustrade to the South Terrace staircase (stair blocking) and they had been examined during the works to dismantle the stairs. The stones were photographed, measured and briefly recorded prior to the reconstruction of the balustrade.

Most of these stones were not moulded or reused but a small number of the more interesting moulded stones which clearly had been reused were retained by the National Trust rather than being reinstated into the blocking course of the stairs. The main stones with mouldings were 113, 114, 115, 118, 135a, 136-139. An outline record of all the stones was made, including the non-moulded ones, because it may be necessary to modify some of the examples. Most of these stones had grooves to their sides for lead plugs.

Nos 140-181

From April – July 2016 a smaller number of moulded stones were found during drainage works at various locations around the South Terrace and these were then added to the inventory together with a number of fragments from a balustrade which were found during the excavation of a pit to the east of the terrace staircase in November 2015.

General discussion

The remarkable collection of dressed or moulded stones found at Cliveden has added considerably to the interest of the works at the South Terrace. It has included many fragments from cornices, string courses, fielded panels, balustrade bases, balustrade hand rails, broken balusters and parts of paving slabs. Some of the stones had been cut to form wedge shapes which were used as packing beneath stair treads.

The most significant pieces included three fragments that appeared to be from a statue or figure with drapery (No.91, 97, 98), fragments from a frieze/capital (87, 96), fragments from a large urn (94), the base of an engaged column (89) two section from columns (136, 137) and a half capital from an ionic column (99).

Other interesting features include a small number of chiselled masons marks, evidence of fire damage to many stones and possible evidence of painted surfaces. The fire damage has comprised the yellow sandstone turning a distinctive salmon pink colour while the main stone which appears to have had a painted surface is No. 72. The moulded face of this stone has the partially surviving trace of an orange/red coating that seems to have been deliberately applied. On this stone it is quite clear that only the moulded face which would have been visible has this colouring and the sides which would have been hidden by adjoining stone work are not similarly coloured.

There are several other stones which also have traces of a reddish/orange colour to their faces although in these cases the small specks of colouring are also present on sides of the stones which would have been hidden. Therefore these

examples are less likely to be painted surfaces and more probably brick residue from being packed into the staircase structure. Many of the stones had large lumps of mortar stuck to them and thus parts remained obscured.

It is logical to assume that most of the fragments originate from the Duke of Buckingham's late 17th-century phase of works; they may have been from the mansion which was ruined by fire in 1795 or possibly from the front of the terrace which is believed to have been reconstructed with the current blind arcade, probably in the 1670s. The classical nature of the fragments would support this and it is very interesting to note the number of architectural fragments scattered around the site on the 1798 view of the ruins by Hendrik de Cort. This includes column bases, capitals, sections of frieze, cornices, panels etc, very similar to those found in the recent works.

The second house at Cliveden to be destroyed by fire, designed by William Burn in 1824, is known to have been much more modest in scale and unlikely to have this type of decoration. Almost all the fragments would be consistent with a date from the 1670s or later but there is one fragment from an ovolo transom (92) which could be older (possibly 16th century).

The inventory also includes a number of pieces which are actually a moulded render fixed to brickwork rather than stone (see 140-142). These were largely found dumped in the area of the Duke's Lawn, immediately north of the eastern third of the terrace and it is believed that they were from a balustrade which formerly demarked this edge of the terrace. They are believed to be 19th century in date, probably dating from Charles Barry's phase of work.

Cliveden: The South Terrace

Inventory of moulded/dressed stones found during archaeological works (2013-17)

1: Wedge shaped piece of sandstone with one right angle. Presumably cut to form base for step. 10 cm tall at taller end; 3.5 cm tall at thin end. 10.5 cm deep. 24 cm long along base and 26 cm long along sloped side.



As part of the current project to repair the terrace staircase this piece has been sealed within the brick vault beneath the east landing.

2: Wedge-shaped piece of sandstone but no right angles unlike No.1. The faces are all relatively smooth and it is thinner than No. 1. 20 cm x 20 cm x 20 cm.



As part of the current project to repair the terrace staircase this piece has been sealed within the brick vault beneath the east landing.

3: Wedge shape sandstone similar to No.1 with a right angle but not identical size. The corners have been lost but it is essentially intact.



15 cm tall at larger end. 5 cm tall at tapered end. 10 cm deep.

22 cm long and 24 cm long along angled side.

As part of the current project to repair the terrace staircase this piece has been sealed within the brick vault beneath the east landing.

4: Rectangular piece of stone which appears to have been the edge of a stair tread with a rounded edge and lip immediately beneath along one of the long sides. It has a slightly wedge-shaped profile so that water would run off. NB this stone is



actually now cracked in half so it is two separate pieces of stone. The stone is only 11 cm deep so it was clearly not a full stair tread but it is interesting to note that the rear edge has a smooth regular face rather than a break and it has clearly not been cracked here. Presumably it was just the long edge of a stair tread and it may just have been a spliced in repair. 29 cm long by 1 cm deep x 5 cm tall with half rounded edge and lip beneath

As part of the current project to repair the terrace staircase this piece has been sealed within the brick vault beneath the east landing.

5: Moulded corner section of plinth. Flat faced base with ogee mouldings above.



The full height is 16 cm but the flat faced base is 10 cm tall. It is 23 cm long x 12.5 cm deep and there are slots on the two main inner faces from former plugs to join this to the adjacent piece. One of the plugs remains in-situ and is lead.

As part of the current project to repair the terrace staircase this piece has been sealed within the brick vault beneath the east landing.

6: Sandstone block with simple ogee (cyma reversa) moulding. Several areas have been knocked off. 19 cm wide x 10 cm tall x 20 cm deep (at its full depth).



As part of the current project to repair the terrace staircase this piece has been sealed within the brick vault beneath the east landing.

7: Interesting tall and thin piece which was presumably part of a cornice or entablature. The full height of the stone is 29 cm while the full depth is 14 cm and the width is 8.5 cm. It comprises two largely flat faced



sections divided to mouldings to the centre.

To the side is a vertical groove running down the side of the stone to a square recess and presumably this was part of a plug to allow molten lead to dribble down

As part of the current project to repair the terrace staircase this piece has been sealed within the brick vault beneath the east landing.

8: Simple slab (possibly a step or tread) with a groove in the side probably for a large iron strap (probably not a lead plug) and the recess for a bar return. The slab is 31 cm long x 39 cm



wide. As part of the current project to repair the terrace staircase this piece has been sealed within the brick vault beneath the east landing.

9: Small fragment from a larger stone. Only two faces survive with the rest truncated. 18 cm x 7 cm x 10 cm.

As part of the current project to repair the terrace staircase this piece has been sealed within the brick vault beneath the east landing.



10: Small fragments from a larger stone. 21 cm long x 5 cm tall at edge. 8 cm tall at tallest point. Notch to underside for a small iron strap or fixing.

As part of the current project to repair the terrace staircase this piece has been sealed within the brick vault beneath the east landing.



11: Featureless slab with squared edges. One side is broken so it would have been part of a formerly longer slab.

Presumably part of a tread or paving slab. 25 cm x 19 x 6 cm.

As part of the current project to repair the terrace staircase this piece has been sealed within the brick vault beneath the east landing.



12: Fragment from a former moulded cornice (23 x 23 x 11 cm thick at its deepest end). This comprises two sections divided by a shallow groove cut across the stone. To one side the stone has a flat face while to the other side there is a simple ogee (cyma reversa) moulding towards a tapered end.

As part of the current project to repair the terrace staircase this piece has been sealed within the brick vault beneath the east landing.



13: Large lump of stone with just one small part of a moulded roll. Presumably part of a string course

As part of the current project to repair the terrace staircase this piece has been sealed within the brick vault beneath the east landing.



14: Lump of sandstone with no mouldings but groove for iron strap fixing. 18 x 16 x 25 cm.

As part of the current project to repair the terrace staircase this piece has been sealed within the brick vault beneath the east landing.



15: Simple piece of stone that was presumably part of a plinth with a sloped side/shoulder.

There is a pinky face to the sloped side which appears to be fire damage.

12 (wide) x 17 (tall) x 24 cm long. The flat part of the upper face is 19 cm long.

As part of the current project to repair the terrace staircase this piece has been sealed within the brick vault beneath the east landing.



16: Small fragment of paving. 23 x 19 x 6 cm.

As part of the current project to repair the terrace staircase this piece has been sealed within the brick vault beneath the east landing.



17: Irregular lump where most of the faces have been lost but there is a clear step formed in one corner. 31 cm long x 12 cm tall x 8 cm deep.

As part of the current project to repair the terrace staircase this piece has been sealed within the brick vault beneath the east landing.



18: Drip course detail with moulding to underside. 40 cm long x 9 cm tall (max) x 14 cm (wide).

As part of the current project to repair the terrace staircase this piece has been sealed within the brick vault beneath the east landing.



19: Large section of string course, some of moulding hidden by mortar lumps. The rear and bottom are all fairly smooth. Sloped rear face. 16.5 cm tall x 56 cm long x 15 cm wide (at top) and 13 cm wide (at bottom).



Cramp groove in upper face. Ogee mouldings to lower part of face.

As part of the current project to repair the terrace staircase this piece has been sealed within the brick vault beneath the east landing.

20: Simple piece largely obscured by lumps of mortar. Flat slab with sloped sides. As part of the current project to repair the terrace staircase this piece has been sealed within the brick vault beneath the east landing.



21: Part of a plinth or string course. 19 cm long x 13 cm tall x 19.5 cm wide. Ogee detailing to lower part of face.



As part of the current project to repair the terrace staircase this piece has been sealed within the brick vault beneath the east landing.

22: Probably base for balustrade. 30 cm long x 16.5 cm tall x c.22 cm wide. Faces to lower half lost.



As part of the current project to repair the terrace staircase this piece has been sealed within the brick vault beneath the east landing.

23: Probably plinth/pedestal for balusters with simple quarter-turn mouldings to each side. 23 cm wide x 6 cm long (but broken) x 7 cm tall.



As part of the current project to repair the terrace staircase this piece has been sealed within the brick vault beneath the east landing.

24: Corner of featureless paving slab. Most faces lost. 18 cm long x 10 cm (but both these broken off). x 7 cm tall.



As part of the current project to repair the terrace staircase this piece has been sealed within the brick vault beneath the east landing.

25: Corner of featureless paving slab. 30 cm x 20 cm x 7 cm tall. As part of the current project to repair the terrace staircase this piece has been sealed within the brick vault beneath the east landing.



26: Part of a paving slab. 23 cm x 26 cm x 7 cm. As part of the current project to repair the terrace staircase this piece has been sealed within the brick vault beneath the east landing.



27: Part of paving slab. 23 x 26 x 7 cm. As part of the current project to repair the terrace staircase this piece has been sealed within the brick vault beneath the east landing.



28: Featureless dressed piece of stone. 23 x 12 x 9 cm. As part of the current project to repair the terrace staircase this piece has been sealed within the brick vault beneath the east landing.



29: Featureless fragment of stone where only one dressed face survives. 19 cm x 11 cm x 7 cm. As part of the current project to repair the terrace staircase this piece has been sealed within the brick vault beneath the east landing.



30: Fragment of paving slab 34 cm (at longest) x 42 x 5 cm. As part of the current project to repair the terrace staircase this piece has been sealed within the brick vault beneath the east landing.



31: Fragment of paving slab 28 cm x 20 cm x 5.5 cm. As part of the current project to repair the terrace staircase this piece has been sealed within the brick vault beneath the east landing.



32: Corner of paving slab 33 cm x 34 cm x 6 cm. As part of the current project to repair the terrace staircase this piece has been sealed within the brick vault beneath the east landing.



33: Fragment of paving slab. 25 cm x 20 cm x 6 cm. As part of the current project to repair the terrace staircase this piece has been sealed within the brick vault beneath the east landing.



34: Fragment of paving slab. 43 x 34 x 6 cm. Uncertain if any of the edges are genuine faces. As part of the current project to repair the terrace staircase this piece has been sealed within the brick vault beneath the east landing.



35: Triangular shaped fragment of stone paving. 28 cm x 22 cm x 6 cm. As part of the current project to repair the terrace staircase this piece has been sealed within the brick vault beneath the east landing.



36: Fragment of stone paving 25 cm x 23 cm x 5 cm. As part of the current project to repair the terrace staircase this piece has been sealed within the brick vault beneath the east landing.



37: Relatively featureless oblong section of stone. Squared sides but it appears to have been part of a longer section of stone. No mouldings. 24 x 17 cm wide x 13 cm tall.



38: Fragment from a larger piece of stone. Just upper face and one side intact, with simple chamfered corner between the two. The other sides are broken. 36 cm long x 17 cm wide x 10 cm tall. As part of the current project to repair the terrace staircase this piece has been sealed within the brick vault beneath the east landing.

39: Square plan block of stone which appears to have been part of a longer stone (side broken). It has 5 holes drilled through and presumably it was to hold down a pedestal or baluster but the broken face seems to have drips of molten lead dribbling down its side.

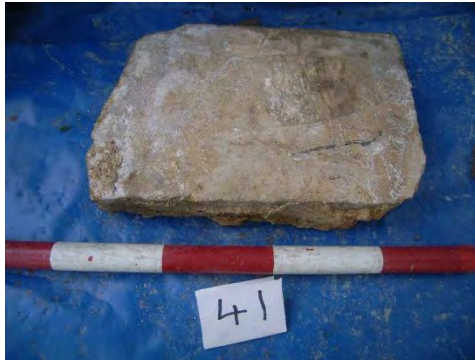


40: Paving stone. Was part of a longer section. 33 cm long x 21 cm wide x 5.5 cm tall. As part of the current project to repair the terrace staircase this piece has been sealed within the brick vault beneath the east landing.



As part of the current project to repair the terrace staircase this piece has been sealed within the brick vault beneath the east landing.

41: Similar to No 40: paving stone that was part of longer block, 31 cm long x 22 cm wide by 5.5 cm tall.
As part of the current project to repair the terrace



staircase this piece has been sealed within the brick vault beneath the east landing.

42: Section of moulded string course with ogee and ovolo moulding. Broken sides. 25 cm long x 24 cm wide (max) x 7 cm deep.

As part of the current project to repair the terrace staircase this piece has been sealed within the brick vault beneath the east landing.



43: Simple piece of stone with a chamfer along one edge. Underside partially lost but dimensions fairly clear. 22 cm wide x 28 cm long x 8 cm tall.
As part of the current project to repair the terrace staircase this piece has been sealed within the brick vault beneath the east landing.



44: Relatively featureless oblong stone from former longer block with a slot along one edge for an iron cramp. 23 cm x 19 cm x 11 cm. As part of the current project to repair the terrace staircase this piece has been sealed within the brick vault beneath the east landing.



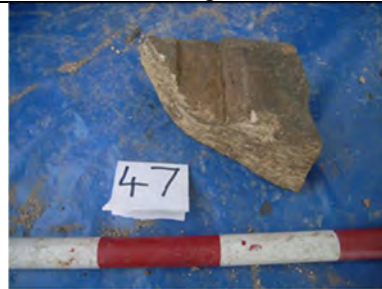
45: Sloped piece of stone (part of a shoulder in wall?) with angled rebate cut in underside. 26 cm long x 15 cm wide x 12 cm tall. As part of the current project to repair the terrace staircase this piece has been sealed within the brick vault beneath the east landing.



46: Moulded section of string course with projecting cyma-reversa drip course but darker than the other stones and more worn. Apparently older than most of other stones but could be at least partly fire damage. A core has been drilled through the stone. 21 cm long x 19 cm wide x 13 cm tall. As part of the current project to repair the terrace staircase this piece has been sealed within the brick vault beneath the east landing.



47: Moulded fragment from a fielded panel. 15 cm x 11 cm x 8.5 cm tall.
As part of the current project to repair the terrace staircase this piece has been sealed within the brick vault beneath the east landing.



48: Long section with mouldings to both upper edges but one end truncated. The horizontal mouldings have a sloped stop towards the other end where the faces are flat. Presumably this was a pedestal or balustrade base. 32 cm long x 12 cm tall x 23 cm wide.

As part of the current project to repair the terrace staircase this piece has been sealed within the brick vault beneath the east landing.



49: Complicated stone block with several sloped faces. 44 cm long x 26 cm wide x 15 cm tall
As part of the current project to repair the terrace staircase this piece has been sealed within the brick vault beneath the east landing.



50: Fragment of paving slab but with lots of mortar and bricks stuck to underside. 29 x 23 x 5.5 cm tall.

As part of the current project to repair the terrace staircase this piece has been sealed within the brick vault beneath the east landing.



51: Good section of moulded cornice. 15 cm tall x 26 cm deep x 20 cm wide. As part of the current project to repair the terrace staircase this piece has been sealed within the brick vault beneath the east landing.



52: Part of a string course with shoulder and mouldings. Also, to the underside there is a carefully chiselled simple mark which could be a masons mark. 16.5 cm tall x 25 cm deep x 19 cm wide. As part of the current project to repair the terrace staircase this piece has been sealed within the brick vault beneath the east landing.



53: Relatively featureless block (22 x 16 x 22 cm) from a longer piece but it has a distinctive mason's mark in the shape of a 'T' (c.10 x 12 cm). As part of the current project to repair the terrace staircase this piece has been sealed within the brick vault beneath the east landing.



54: Good section of fielded panel. Full width of the panel. 30 cm (across panel) x 27 cm wide x 8 cm tall. Ovolo mouldings to edges of panels. This piece fits with the the earlier smaller fragment (No.47). The two pieces were formerly joined together. As part of the current project to repair the terrace staircase this piece has been sealed within the brick vault beneath the east landing.



55: Relatively featureless block (one end of a larger piece) but it is good example of a fire damaged bath stone where the yellowy becomes a pink/salmon colour towards the edge and then with a grey/black face. 15 x 15 x 13 cm. As part of the current project to repair the terrace staircase this piece has been sealed within the brick vault beneath the east landing.



56: Dull, non-moulded dressed block 32 x 16 x 12 cm. As part of the current project to repair the terrace staircase this piece has been sealed within the brick vault beneath the east landing.



57: Long thin piece with very worn mouldings along one upper edge and sloped shoulder along other upper edge. Cramp slot in top. 20 cm tall x 13 cm x 39 cm long. As part of the current project to repair the terrace staircase this piece has been sealed within the brick vault beneath the east landing.



58: Section of balustrade base (or similar) 36 x 19 x 17 with large birds-mouth slot for cramp. As part of the current project to repair the terrace staircase this piece has been sealed within the brick vault beneath the east landing.



59: Simple oblong block, base of pedestal with small chamfers along 3 of the upper edges. 21 cm long x 19 cm wide x 13 cm tall. As part of the current project to repair the terrace staircase this piece has been sealed within the brick vault beneath the east landing.



60: Section of string course where the wall would have stepped in. with sloped shoulder and roll moulding above. There is a fire-damaged pink rear face to the stone suggesting a fire inside the house and a distinct 'E' cut in the top of the stone. 26 cm deep x 16 cm wide x 17 cm tall. As part of the current project to repair the terrace staircase this piece has been sealed within the brick vault beneath the east landing.



61: Section of moulded string course or possibly cornice. Ogee mouldings. 25 cm deep x 13 cm tall x 18 cm long. As part of the current project to repair the terrace staircase this piece has been sealed within the brick vault beneath the east landing.



62: Simple wedge-shaped block 22 x 21 x 10 cm. As part of the current project to repair the terrace staircase this piece has been sealed within the brick vault beneath the east landing.



63: End of a pedestal base or base for a screen/balustrade. Ovolo mouldings along both upper edges and these return around one end. The other end is flat faced. 16 cm tall x 21 cm wide. As part of the current project to repair the terrace staircase this piece has been sealed within the brick vault beneath the east landing.



64: Paving slab, T-shaped with lots of mortar et stuck to its base. The main width of the T is 46 cm while the narrower width is 38 cm. 8.5 cm tall. As part of the current project to repair the terrace staircase this piece has been sealed within the brick vault beneath the east landing.



65: Large and well preserved string course. Mouldings survive well for 34 cm long although the actual block is longer. Curved moulding to upper part of face with ogee mouldings below. As part of the current project to repair the terrace staircase this piece has been sealed within the brick vault beneath the east landing.



66: As part of the current project to repair the terrace staircase this piece has been sealed within the brick vault beneath the east landing.



67: As part of the current project to repair the terrace staircase this piece has been sealed within the brick vault beneath the east landing.



68: As part of the current project to repair the terrace staircase this piece has been sealed within the brick vault beneath the east landing.



69: As part of the current project to repair the terrace staircase this piece has been sealed within the brick vault beneath the east landing.



70: As part of the current project to repair the terrace staircase this piece has been sealed within the brick vault beneath the east landing.



71: As part of the current project to repair the terrace staircase this piece has been sealed within the brick vault beneath the east landing.



72: As part of the current project to repair the terrace staircase this piece has been sealed within the brick vault beneath the east landing.



73: As part of the current project to repair the terrace staircase this piece has been sealed within the brick vault beneath the east landing.



74: As part of the current project to repair the terrace staircase this piece has been sealed within the brick vault beneath the east landing.



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78: As part of the current project to repair the terrace staircase this piece has been sealed within the brick vault beneath the east landing.



79: As part of the current project to repair the terrace staircase this piece has been sealed within the brick vault beneath the east landing.



80: A corner section of a pilaster base with ogee moulding. It has been roughly used as fill in the wall and there are lumps of mortar left fixed to the stone. Fine white limestone. 43 cm long x 18 cm wide x 21 cm tall. The flat-faced lower section of the base is 11 cm tall. *(Possibly 17th century)*



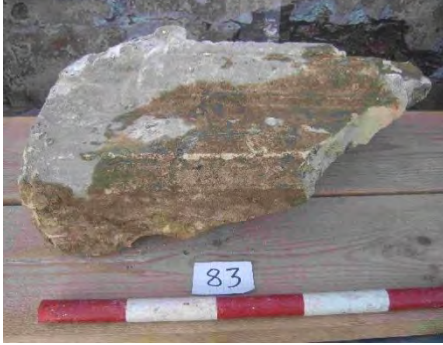
81: A stepped section of a moulded cornice which would have extended around a corner. 22 cm x 29 cm x 16 cm tall. Yellowy Cotswold stone (*17th century or later*)



82: Stair baluster base. The base is 10 cm square x 15 cm tall and the full height of the fragment is 19 cm. Fine white limestone (*Probably 18th/19th century*)



83: Possibly a door head or fireplace with ovolo moulded hood on inner edge. 56 cm long x 29 cm tall x 14 cm deep. There is a trench for a cramp at one end. Fine white limestone. (*Probably 17th century*)



84: Probably the top of a pilaster where it meets a cornice. Fine white limestone. 43 cm long x 23 cm tall x 26 cm deep. In the photo the fragment is upside down. The fragment is quite damaged and there are many lumps of mortar left intact. (*17th/18th century*)



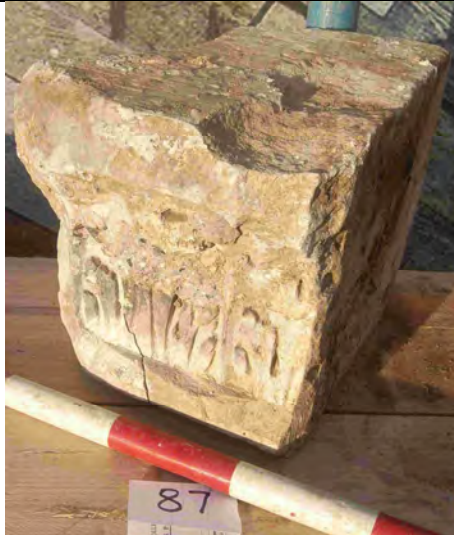
85: Small fragment of sandstone from an urn. 25 cm x 19 cm x 10 cm. The fragment is a pink/red sandstone colour and the colour may be at least partly a discolouration from fire. (*Possibly 18th century*)



86: Fielded stone panel (2 parts), possibly from the side of a staircase. Yellowy Cotswold stone. Recessed at back possibly to accommodate brickwork behind. 61 cm long x 30 cm wide x 8 cm tall. (*18th century?*)



87: Capital. Left hand end of a floral frieze. Uncertain if its Gothic or Classical. 30 cm x 26 cm x 25 cm. Two cut and one broken face, flat top and bottom. Fine white limestone. (*18th/19th century*)



88: Cornice fragment with simple roll mouldings to upper edge and lower edge and quarter turn between. 25 cm long x 17 cm x 13 cm. Fine white limestone. (*17th century?*)



89: Column base. Probably from an engaged column. Just over half a circle. The central section of the rear face projects slightly to allow it to be keyed into a wall. Diameter c.35 cm. Fine white limestone. *(17th/18th century?)*



90: White marble facing. 19 cm x 17 cm x 10 cm.



91: Statue/figure with drapery (rolls of fabric). Fine white limestone. 24 cm x 30 cm x 22 cm. *(Post medieval)*



92: Ovolo ironstone transom. Coarse limestone, which appears to be burnt, especially to one side. Ovolo detailing to underside with sloped faces to upper side. 18 cm x 22 cm x 10 cm. *(Possibly 16th century)*



93: Frieze with an offset a quarter of the way along. Fine white limestone. 39 cm long x 29 cm tall x 10 cm deep (at the head). Ovolo moulding at the head and two further horizontal steps. *(17th - 18th century)*



94: Red sandstone urn fragment (a half circle) similar to 85. In the photo the fragment is upside down so the base is uppermost surface. 63 x 33 x 25 cm tall. *(18th century?)*



95: Small part of same type of urn as 94 and 85. Red sandstone. 30 x 20 x 18. *(18th century?)*.



96: Capital, as 87. Fine white limestone. 32 cm x 20 cm x 26 cm tall. Tall (probably classical). Stiff leaf *(18th - 19th century)*



97: Fragment of figure/statue with falling drapery and tassled edge. Possibly relates to 87 and 96 (capitals). 26 cm tall x 22 cm wide x 20 cm. (*Post medieval*).



98: Fragment of figure/statue with drapery. Similar to 97 and 91. Fine white limestone. 32 cm x 25 cm x 17 cm. (*Post medieval*)



99: Truncated half capital from Ionic column which has been reused as a flat ashlar piece in course immediately beneath balustrade. The volutes have been crudely removed from the capital and a flat surface created to the rear (originally hidden) side for the new ashlar face (42 x 29 cm). There are cramp recesses to the side and to the top with a lead plug insitu. Fine white limestone. The same order is used in the pilasters of the current house and in the Cockerell Pavilion. (*17th-18th century*)

NB – No.100 not used



101: As part of the current project to repair the terrace staircase this piece has been sealed within the brick vault beneath the east landing.



102: As part of the current project to repair the terrace staircase this piece has been sealed within the brick vault beneath the east landing.



103: As part of the current project to repair the terrace staircase this piece has been sealed within the brick vault beneath the east landing.



104: As part of the current project to repair the terrace staircase this piece has been sealed within the brick vault beneath the east landing.



105: As part of the current project to repair the terrace staircase this piece has been sealed within the brick vault beneath the east landing.



106: As part of the current project to repair the terrace staircase this piece has been sealed within the brick vault beneath the east landing.



NB – No's 1007-109 were not used.

110: Non moulded section of blocking course with sloped side. 29 cm tall x 14 cm deep x 37 cm wide (at base) and 24 cm wide (at top).



111: Relatively plain unmoulded block. 21 cm wide x 28 cm tall x 12 cm deep.



112: 30 cm wide x 15 cm tall. Some possible fragmentary moulding to rear edge. This stone was set beneath 113.



113: Reused block with curved cavetto moulding suggesting the stone may have formed part of a string course.

30 cm wide x 12 cm tall x 33 cm deep. This stone sat on top of 112



114: Block with curved (cavetto) moulding across its length. Possibly reused from the top of a plinth. 28 cm tall x 32 cm wide x 25 cm deep. When the block was reused the moulding was along the rear edge of the stone.



115: Reused stone with mouldings to the rear suggestive of having come from a cornice. There is some reddenning which is probably evidence of fire damage and the stone may well come from the cornice of one of the houses destroyed by fire. 28 cm tall (at front) x 21 cm deep x 30 cm wide.

The mouldings incorporate a step.



116: Plain non-moulded block. 28 cm tall x 11 cm deep x 37 cm wide.



This block has been retained by the National Trust and not replaced in the reconstructed stair-blocking course.

117: 28 cm tall x 20 cm deep (at max) x 51 cm wide. One side of the rear is angled



118: Reused stone with mouldings to the rear suggestive of having come from a cornice. 25 cm wide x 28 cm tall x 18 cm deep. There is some redening to the stone and this appears to be evidence of fire damage so the stone may come from the cornice of one of the houses which were destroyed by fire.



This block has been retained by the National Trust and not replaced in the reconstructed stair-blocking course.

119: Small, slightly wedge-shaped block. 24 cm wide x 6 cm deep x 28 cm tall.



120: Wedge shaped wedge-shaped block. Not reused. 28 cm tall x 41 cm wide x 12 cm deep (at base) and 4 cm deep (at top).



121: Wedge-shaped block. 58 cm wide x 28 cm tall x 14 cm deep (at base) x 9 cm deep (at top)



122: 28 cm tall x 7 cm deep (at top) x 17 cm deep at base. One side is angled suggesting it may have been set at the top of a flight of steps



123: Wedge-shaped block. 60 cm wide x 27 cm tall x 10 cm deep (at base)



124: Curved block. Not reused. 16 cm deep. One edge is 26 cm long while the other is 29 cm long.



125: Simple block with recessed upper edge to rear. 26 cm long x 29 cm tall x 11 cm deep. Not moulded or reused.



126: Non-moulded stone. 45 cm long x 28 cm tall x 22 cm deep but with one of the rear edges angled.



127: Wedge shaped block with sloped side face. 48 cm long to upper edge; 57 long to lower edge; 9 cm deep at base and 6 cm deep at top.



128: Wedge-shaped block: 39 cm long x 29 cm tall x 15 cm (deep at base) and 11 cm deep at top.



129: Plain non-moulded block. 32 cm long x 28 cm tall x 13 cm deep.



130: Plain oblong stone block. 28 cm tall x 12 cm deep x 32 cm long.



131: Plain wedge-shaped block 50 cm long x 27 cm tall x 13 cm deep (at base).



132a: Plain non-moulded oblong stone block. 33 cm long x 22 cm deep x 14 cm tall. This block sat on top of 132b.



132: Plain non-moulded oblong block that sat below 132a. 33 cm long x 15 cm tall x 15 cm deep.



133a: Plain non-moulded oblong block which sat on top of 133b. 38 cm long x 14 cm deep x 15 cm tall.



133b: Plain non-moulded oblong block which sat under 133a. 14 cm tall x 18 cm deep.



134: Plain non-moulded oblong block. 29 cm tall x 26 cm wide x 15 cm deep.



135a: This is a reused stone with worn cyma-reversa mouldings to the rear underside and a sloped side. 15 cm tall x 16 cm wide (to top) x 25 cm deep. This stone sat on top of 135b.



135b: Plain non-moulded stone block 35 cm long x 14 cm tall x 25 cm deep and with one of the sides sloped.



136: Reused stone which was formerly part of a column. 59 cm long x 28 cm tall x 20 cm deep (at truncated base). The rear face of the reused stone is smooth and curved. The column was probably free-standing rather than engaged and truncated to form the front, upper face and lower face. The narrower upper edge tapers slightly. This stone was reused at the top of the staircase. It has been retained by the National Trust and placed in storage rather than being reincorporated into the rebuilt structure of the stairs.



137: Long reused stone which was formerly a section of a column with smooth, white curved rear face. 122 cm long x 28 cm tall (the face when reused). At its deepest (central) point the stone is 17 cm wide but the upper and lower edges are 11 cm wide. The column may have been engaged. This stone was reused at the top of the staircase. It has been retained by the National Trust and placed in storage rather than being reincorporated into the rebuilt structure of the stairs.



138: Reused stone which appears to have previously formed part of a plinth as it has linear mouldings along its upper rear edge (when reused). The mouldings include a cavetto quarter turn, two small steps and a further truncated curve.



The form of the reused stone has a curved top and bottom suggesting it may have come from a landing detail. The stone is 14 cm deep and its maximum length is 69 cm. The mouldings are c.8 cm deep and they appear to match those in 139.

This stone was reused at the top of the staircase.

139: Reused stone which appears to have previously formed part of a plinth as it has linear mouldings along its upper rear edge (when reused). The reused form of the stone has a kinked form suggesting that it was used at a junction or angle within the staircase. The sides of the stone are 28 cm tall and 29 cm tall and the maximum width of the stone is 40 cm. The stone is 15 cm deep.



The mouldings are c.8 cm deep and they appear to match those in 138.

140: Five pieces from a section of cornice (presumably the same section) all found in back-fill along northern edge of Dukes Lawn. They all share the same moulding profile and they are all hard render attached to bricks. The render is later 19th or 20th-century in date but the bricks are older (probably 18th century). Presumably this was from a cornice along the northern edge of the east end of the terrace.



141: Moulded cement-based render (19th or 20th century) applied to older brickwork. Smaller than No.140 and with different moulding (half-circle with ovolo beneath). Found in back-fill along the northern edge of the Dukes Lawn.



142: Moulded cement-based render (19th or 20th-century) applied to older brickwork base and found in back-fill along the northern edge of the Dukes Lawn. The mouldings are 16 cm in height (max).



143: Top of baluster (section that would have been immediately beneath handrail) found in soakaway pit dug just to east of terrace staircase in November 2015. Approx 14 cm² by 5 cm tall (with mortar layer and a trace of slate). The moulding is c.13 cm in diameter. The is likely to be a fixing recess in the base but this is hidden by the remaining mortar and slate.



144: Top of baluster (section that would have been immediately beneath handrail) found in soakaway pit dug just to east of terrace staircase in November 2015. Slightly larger than No.143. The base is c.14.5 cm² x 6 cm tall and the moulding is c.13.5 cm in diameter. There is a small square fixing hole in the base (to fix to underside of handrail) but this has been infilled.



145: Top of baluster (section that would have been immediately beneath handrail) found in soakaway pit dug just to east of terrace staircase in November 2015. Apart from slightly different wear this is essentially identical to No.144. Base is c.14.5 cm² x 6 cm tall and the moulding is c.13.5 cm in diameter.



146: Top of baluster (section that would have been immediately beneath handrail) found in soakaway pit dug just to east of terrace staircase in November 2015. Apart from slightly different wear this one is essentially identical to No.143. c.14 cm² by 5 cm tall. There is a small fixing rebate in the top which would have allowed the baluster to be fixed to the underside of the handrail.



147: Top of baluster (section that would have been immediately beneath handrail) found in soakaway pit dug just to east of terrace staircase in November 2015. Similar to the other baluster fragments but the edge of the circle appears to be slightly inset from the edge of the base whereas 146 and 148 the edge of the circle is essentially flush with the base.



148: Top of baluster (section that would have been immediately beneath handrail) found in soakaway pit dug just to east of terrace staircase in November 2015. Again very similar to other baluster tops.



149: Baluster base found in soakaway pit dug just to east of terrace staircase in November 2015. Approx 14 cm². Mouldings very worn.



150: Baluster base found in soakaway pit dug just to east of terrace staircase in November 2015. Approx 14 cm². Mouldings very worn.



151: Baluster base found in soakaway pit dug just to east of terrace staircase in November 2015. Approx 14 cm². This one is slightly taller (c.12 cm than the other bases). Mouldings very worn.



152: Baluster base found in soakaway pit dug just to east of terrace staircase in November 2015. Approx 14 cm². Mouldings very worn.



153: Sandstone baluster base from junction of balustrade (so it's only a quarter baluster). 20 cm tall. Found in soakaway pit dug just to east of terrace staircase in November 2015.



154: Soft sandstone baluster bottle, c.20 cm tall, relatively worn but slender in profile. Max diameter of 13 cm. Found in soakaway pit dug just to east of terrace staircase in November 2015.



155: Soft sandstone baluster bottle, much more squat in profile than 154. Max diameter of 14 cm. Found in soakaway pit dug just to east of terrace staircase in November 2015.



156: Baluster top but with a flat side (suggesting that it formed part of a relief panel). 19 cm tall. Found in soakaway pit dug just to east of terrace staircase in November 2015.



157: Soft stone baluster fragment. 14 cm max in diameter with flat surface to one side. Found in soakaway pit dug just to east of terrace staircase in November 2015.



158: Soft sandstone baluster bottle, 21 cm tall, broadly similar to 155 but with a slightly thicker stem. Found in soakaway pit dug just to east of terrace staircase in November 2015.



159: Sandstone baluster bottle, relatively slender and similar to 154. Found in soakaway pit dug just to east of terrace staircase in November 2015.



160: Sandstone baluster bottle, relatively slender and similar to 154. Found in soakaway pit dug just to east of terrace staircase in November 2015.



161: Sandstone bottle fragment, 15 cm tall. One side is flat so presumably it was part of a relief panel but the other two sides are also apparently truncated. Found in soakaway pit dug just to east of terrace staircase in November 2015.



162: Soft sandstone baluster bottle fragment, 15 cm tall. Relatively slender and similar to 154. Found in soakaway pit dug just to east of terrace staircase in November 2015.



163: Soft sandstone baluster bottle fragment, 15 cm tall. Relatively slender and similar to 154. Found in soakaway pit dug just to east of terrace staircase in November 2015.



164: Soft sandstone bottle fragment with flat rear face (so presumably from a relief). Relatively squat profile form so similar to No.155. 19 cm tall and with max diameter of 14 cm. Found in soakaway pit dug just to east of terrace staircase in November 2015.



165: Sandstone fragment found in the fill on the north side of the east end of the terrace. Fragments of concrete attached to top. 15 cm tall and with a 4 cm tall half-circle lip at the upper edge. c.11 cm tall but wedge shaped. Possibly a step from a staircase.



166: This is another fragment from the same feature as No.165. c.17 cm x 15 cm, also found in rubble fill on the north side of the east end of the terrace



167: Baluster bottle base found in rubble on north side of the east end of the terrace. Its surface/character is quite different to the sandstone bottles and it appears to be an artificial stone but painted. The core is a darker colour to the surface. Coade stone? 16 cm square base and 5 cm tall with metal rod down the centre.



168: Stone baluster base, c.16 cm²



169: Half of a stone baluster base, apparently formed from artificial stone like 167 and with painted surface.



170: Section of cornice (or similar) formed from artificial stone with a scour mark to suggest ashlar. 16 cm tall (max) by 10 cm wide. The upper edge has a half-circle lip (5 cm tall). Found in infill (ground make up) on north side of east end of terrace.



171: Fragment of cornice (or similar) formed from render stuck to brick/mortar. 17 cm wide (max) x 20 cm tall. Various steps and ovolo mouldings. Found in infill (ground make up) on north side of east end of terrace.



172: Matching fragment to No.170 formed from hard cement render and with scour lines to look like ashlar. Attached to old brick base. 17 cm tall (max) x 12 cm wide (max). Found in infill (ground make up) on north side of east end of terrace.



173: Another fragment similar to 170 & 172 but slightly larger and also incorporating a junction and step (presumably a step in the balustrade). 19th century bricks with frogs. Bricks fairly hard but quite distinctive with small air holes. Found in infill (ground make up) on north side of east end of terrace.



174: Similar mouldings to 173 and from same feature (balustrade plinth?).



175: Large section of stone plinth found during excavation works beyond the east end of the terrace/house. It had been reused as the cap over a small buried drain close to the small electrical substation to the east of the terrace. 56 cm long (max) with mitred corner. 14 cm tall and 24 cm wide (max). It forms a corner piece so the mouldings return around the corner. Projecting metal fixing at the mitred corner. There is a mason's mark ('E') on top so it clearly formed the base for something such as a balustrade directly on top. Small steps and ovolo mouldings.



176: Section of baluster hand rail found during ground reduction work on top of the west end of the terrace. 25 cm long by 10 cm tall by 19 cm wide (max) and 10 cm wide (min). The imprint is visible from the former balusters.



177: Baluster bottle found in rubble fill to the north of the west end of the terrace. It appears to be formed from a painted artificial stone (Coade stone?). 18 cm tall; 14 cm diameter (max).



178: Simple section of moulded plinth (?) found during ground reduction works on top of the terrace towards the west end. It is 10 cm tall x 16 cm wide x 12 cm long.



179: Fragment of baluster bottle stems found dumped in a pit to the east of the terrace staircase (Nov 2015).



180: Fragment of baluster bottle stems found dumped in a pit to the east of the terrace staircase (Nov 2015).



181: Soft sandstone, 12 cm long x 14 cm deep x 10 cm tall. Ovolo mouldings and with what appears to be a drip mould towards base. Found during ground reduction works on top of the terrace (towards west end).



182: Reused sandstone lintel found during ground reduction works on top of the terrace. It had been reused as a cap on top of a simple drainage gully. It has mouldings to two sides (so presumably a lintel with mouldings to the inner face and the outer face. Cavetto (hollow) moulding to one side with various stepped ovolo mouldings to the other side.





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Figure 1: Site location

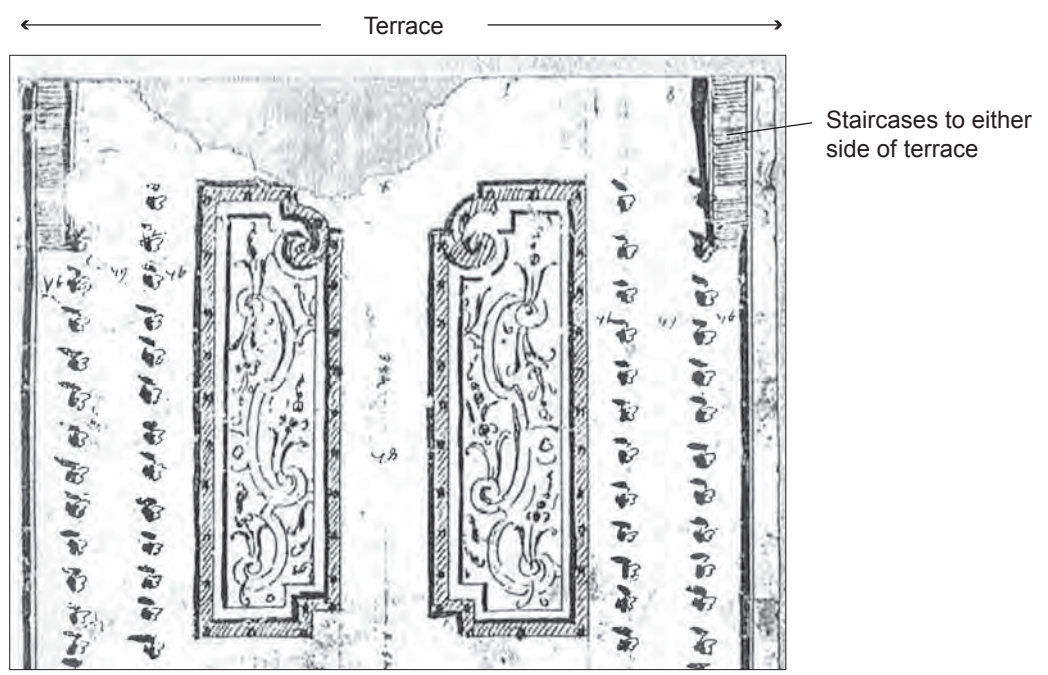


Figure 2: Extract from Claude Desgot's plan of 1713

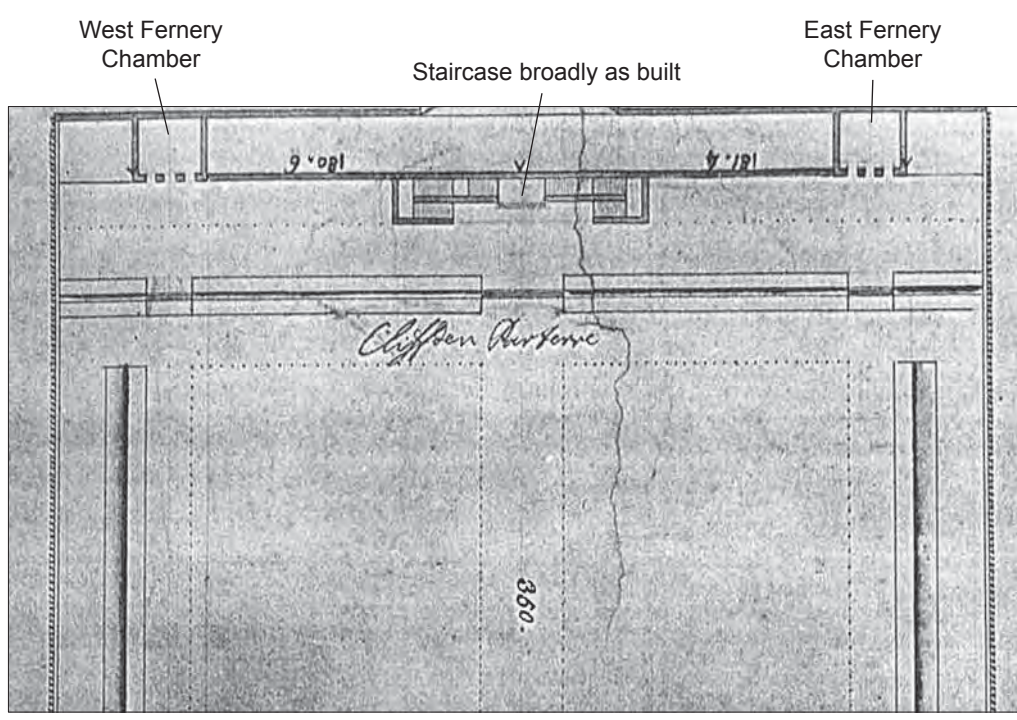


Figure 3: Anonymous plan, c.1720-23

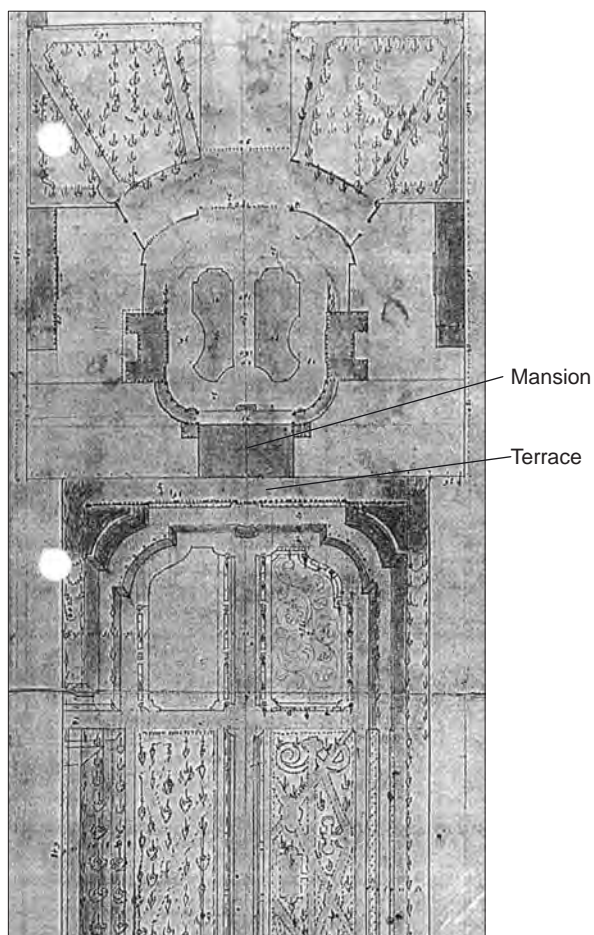


Figure 4: Cliveden Album page 11
c.1713-1723



Figure 5: View of Powis Castle from the Universal Magazine

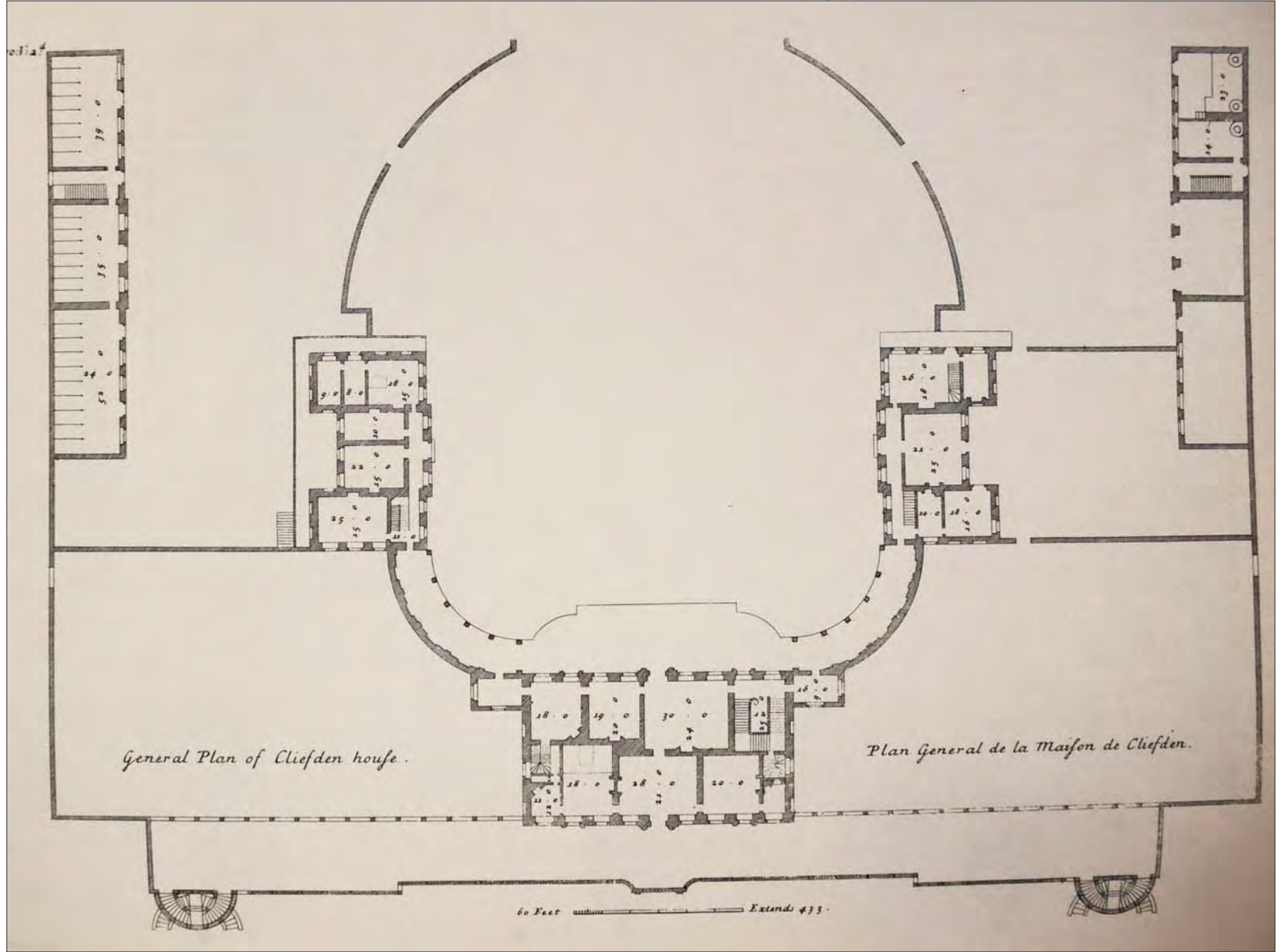


Figure 6: Plan of Cliveden from Vitruvius Britannicus, published 1717

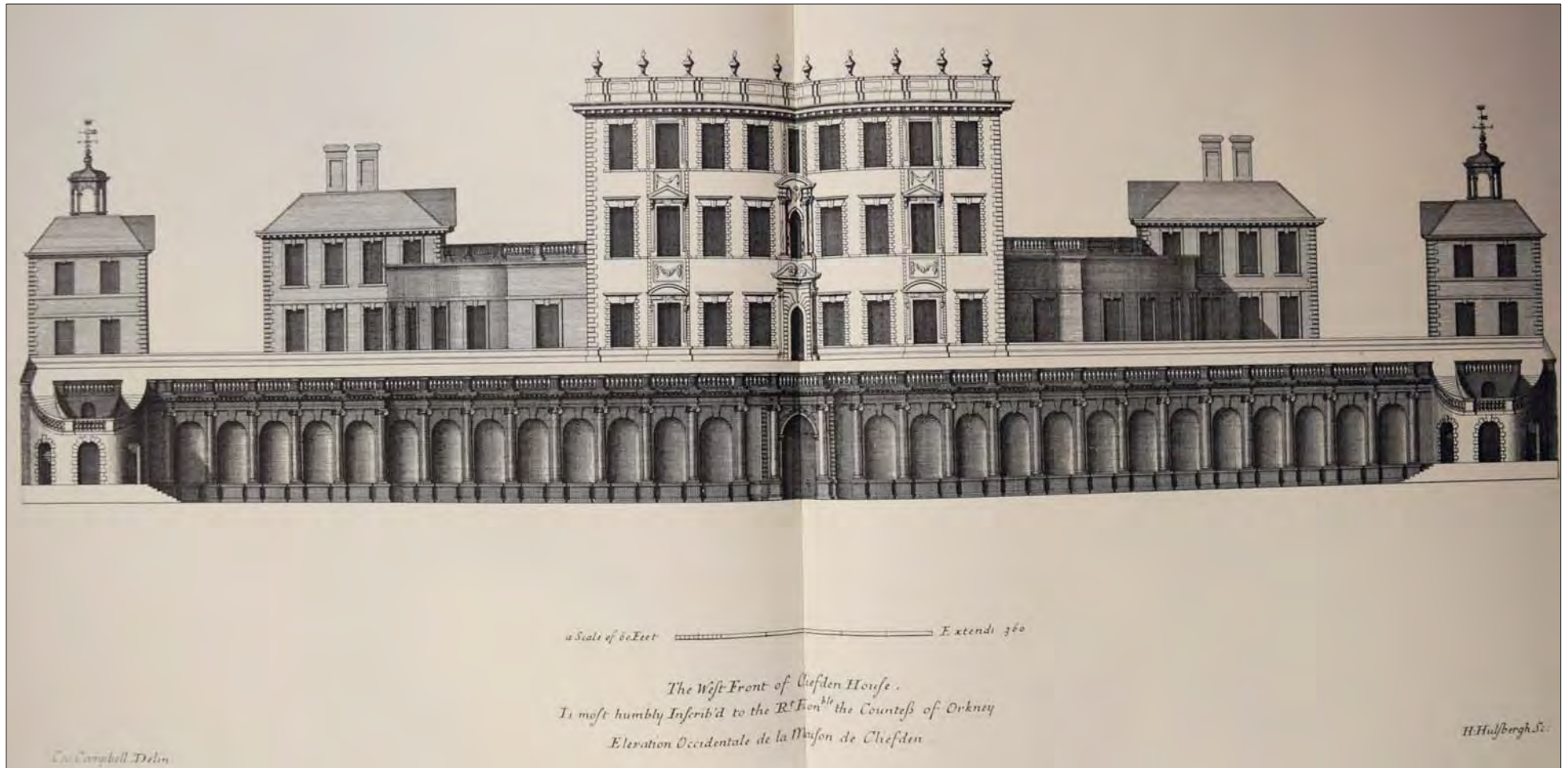


Figure 7: South elevation of Cliveden from Vitruvius Britannicus, published 1717

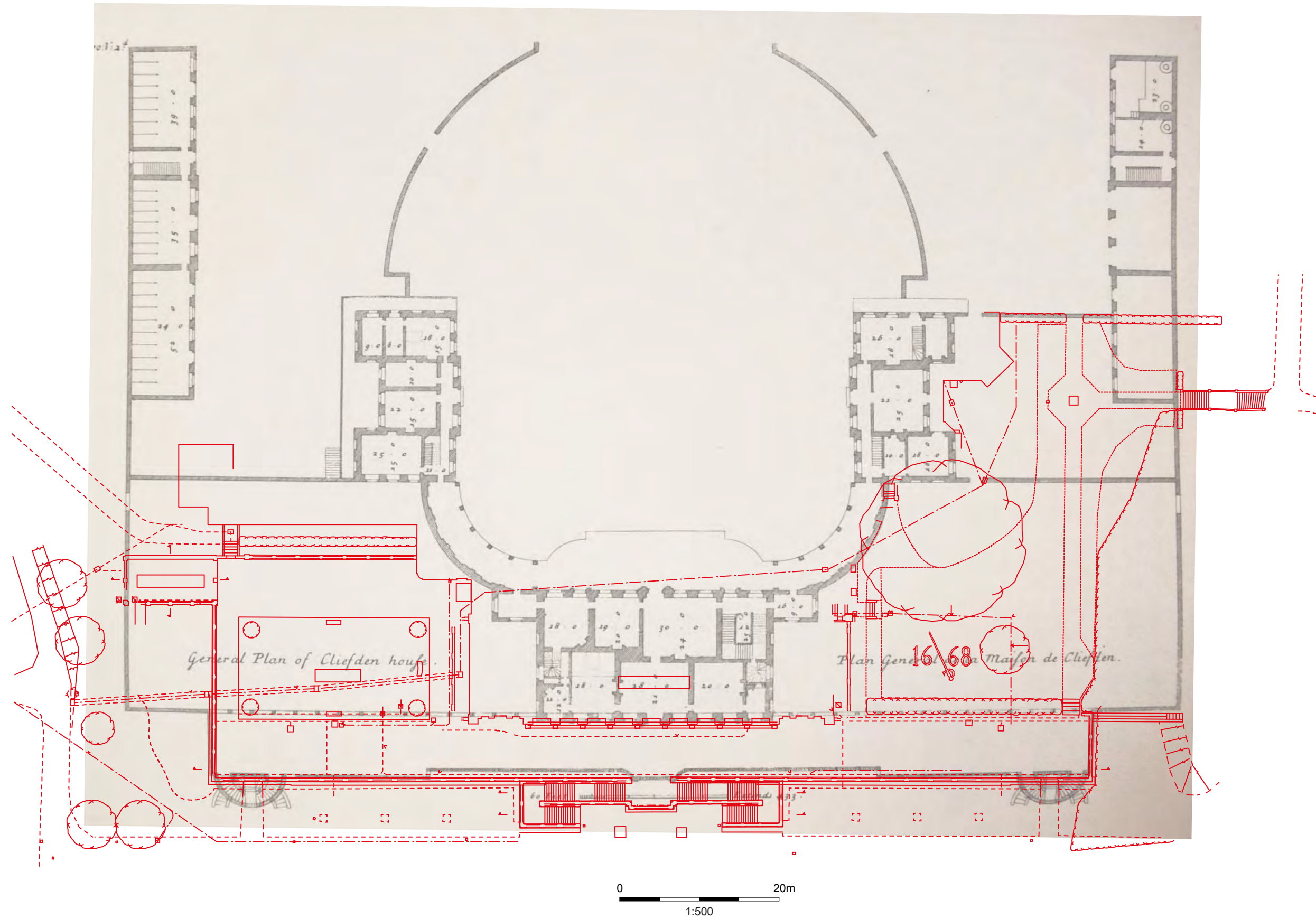


Figure 8: Plan of Vitruvius Britannicus with modern survey laid over

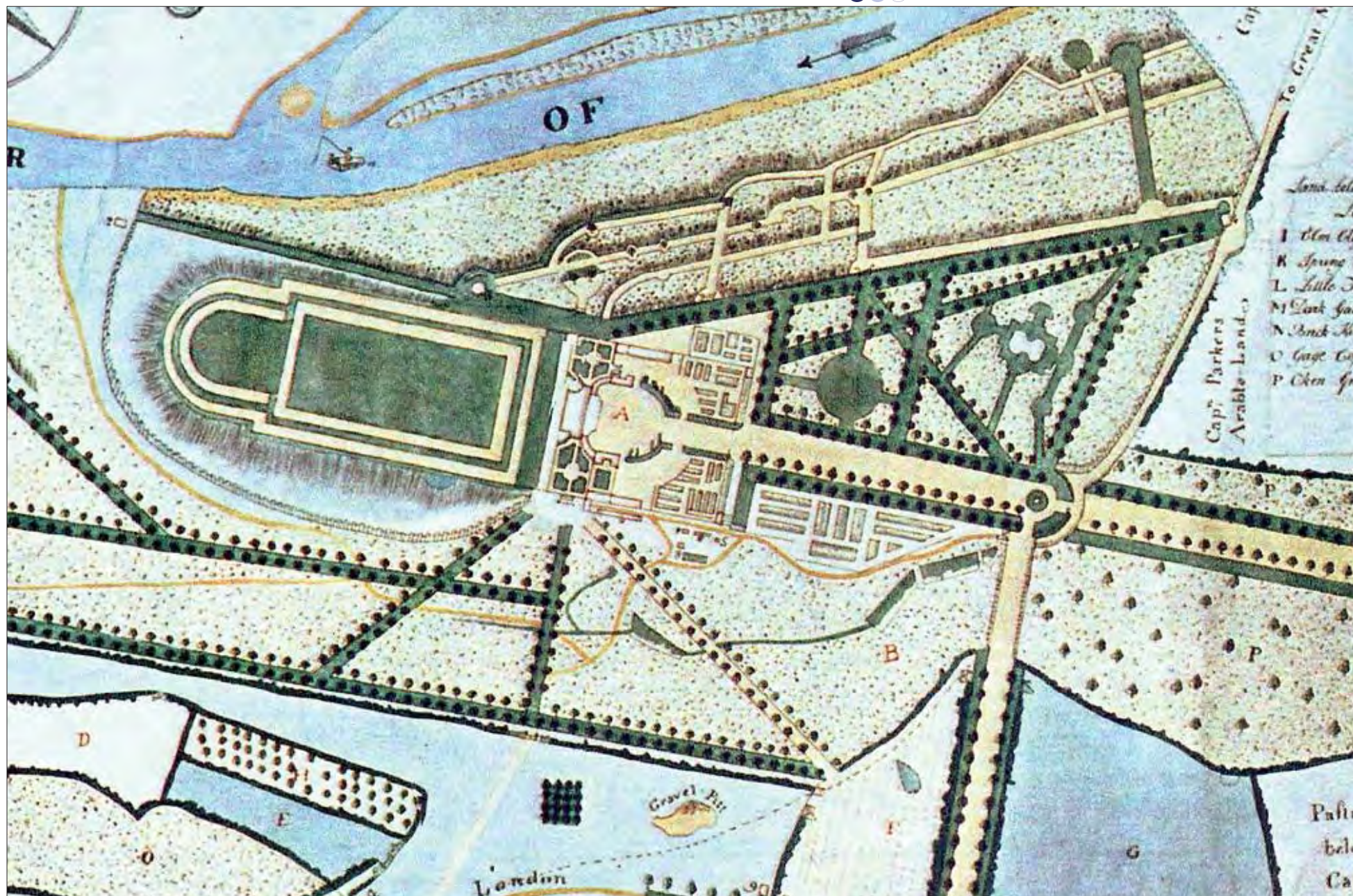


Figure 9: John Richardson's map, 1749

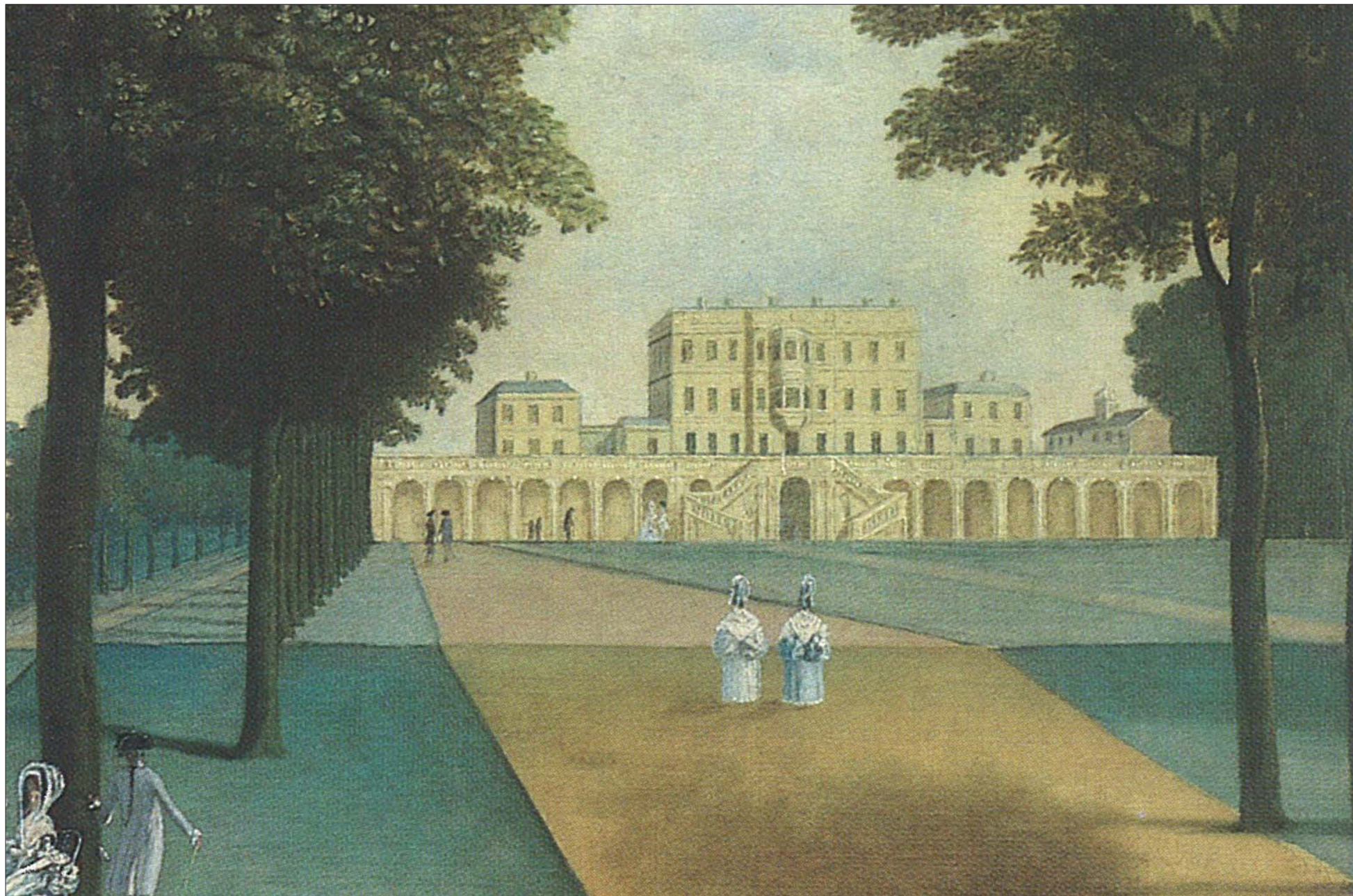


Figure 10: c.1750s view by Anonymous artist



Figure 11: 1759 view of Cliveden

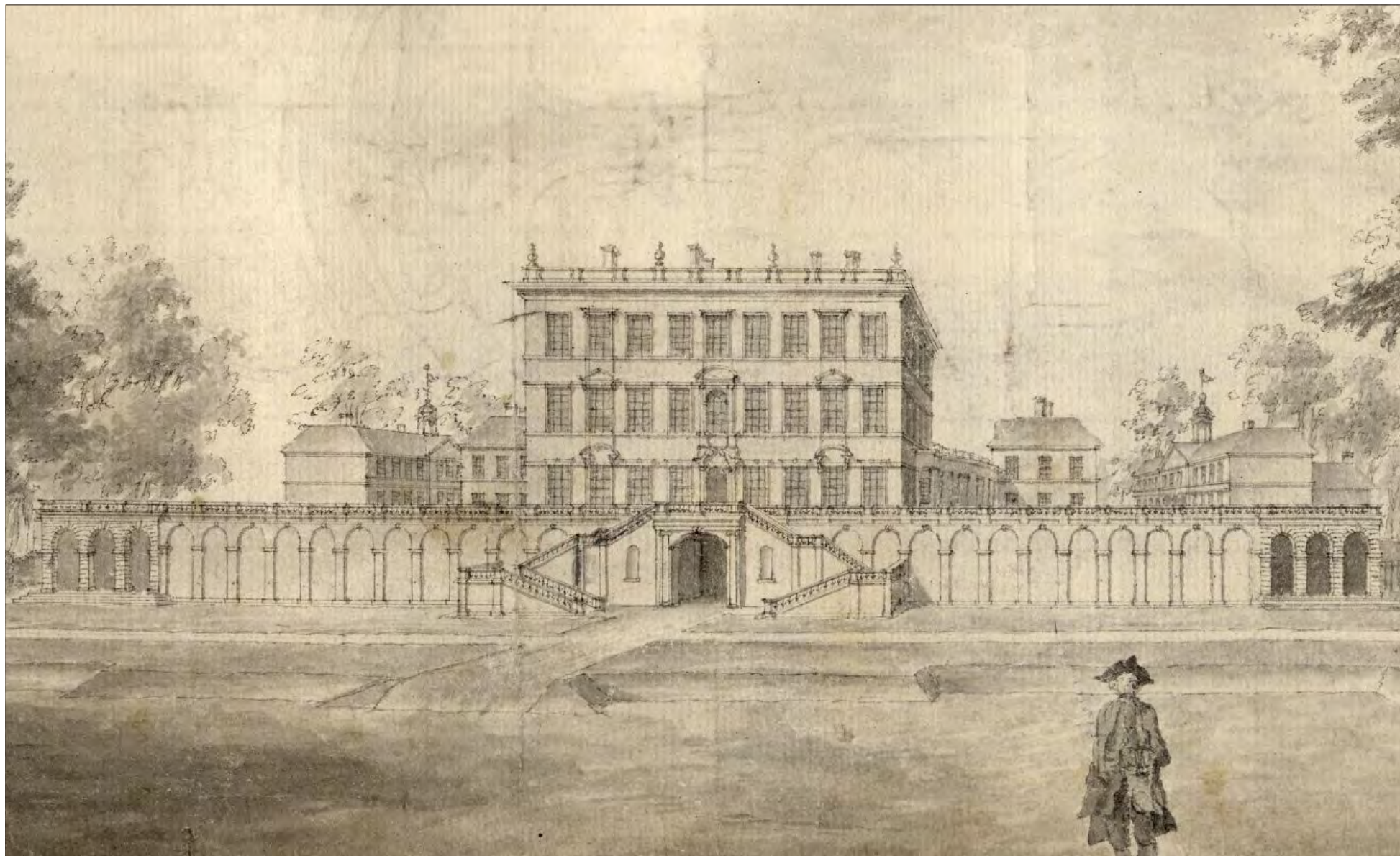


Figure 12: View of Cliveden by John Donowell, c.1780s



Figure 13: View of Cliveden published in 'The Modrn Universal British Traveller', 1779



Figure 14: 1787 Enclosure map



Figure 15: The ruins of Cliveden after the 1795 fire, by Hendrick de Cort



Figure 16: Early 19th century unexecuted proposal for Cliveden

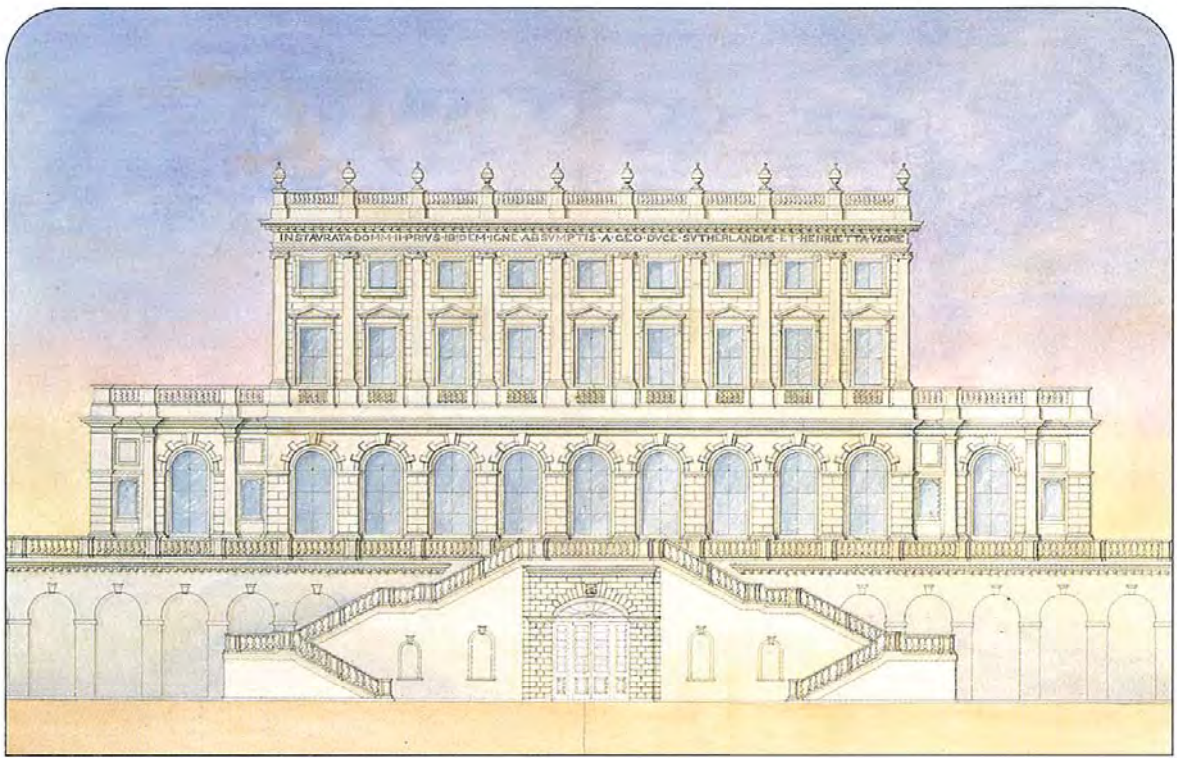


Figure 17: Charles Barry's design for the south elevation of the mansion, 1850

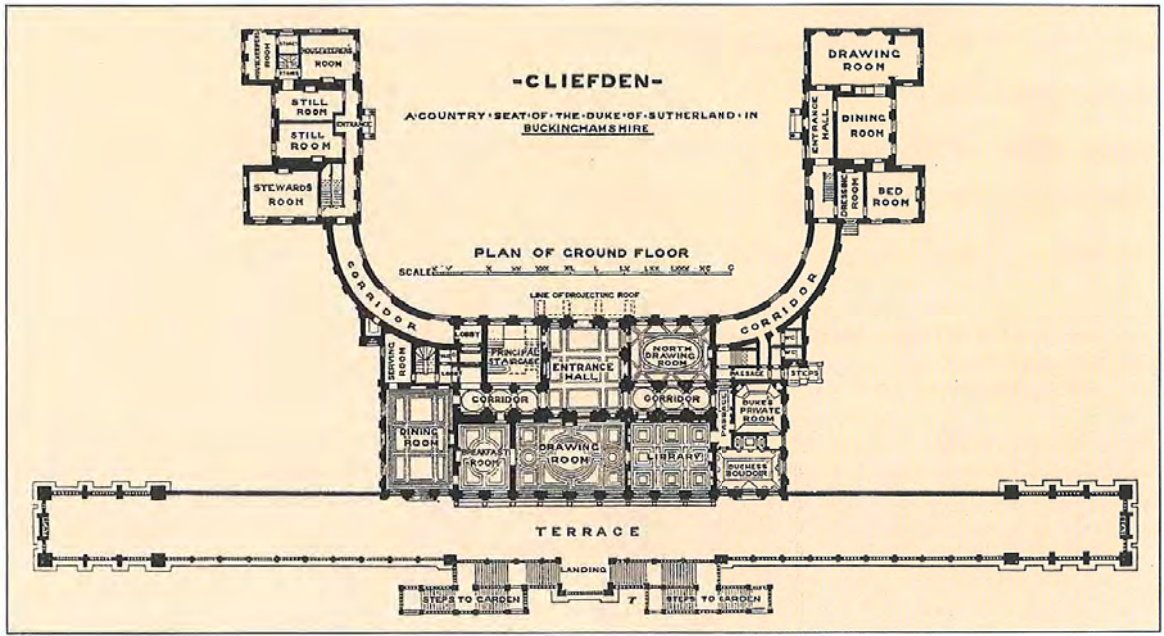


Figure 18: Later 19th century plan, apparently based on Charles Barry's 1850 proposal drawings

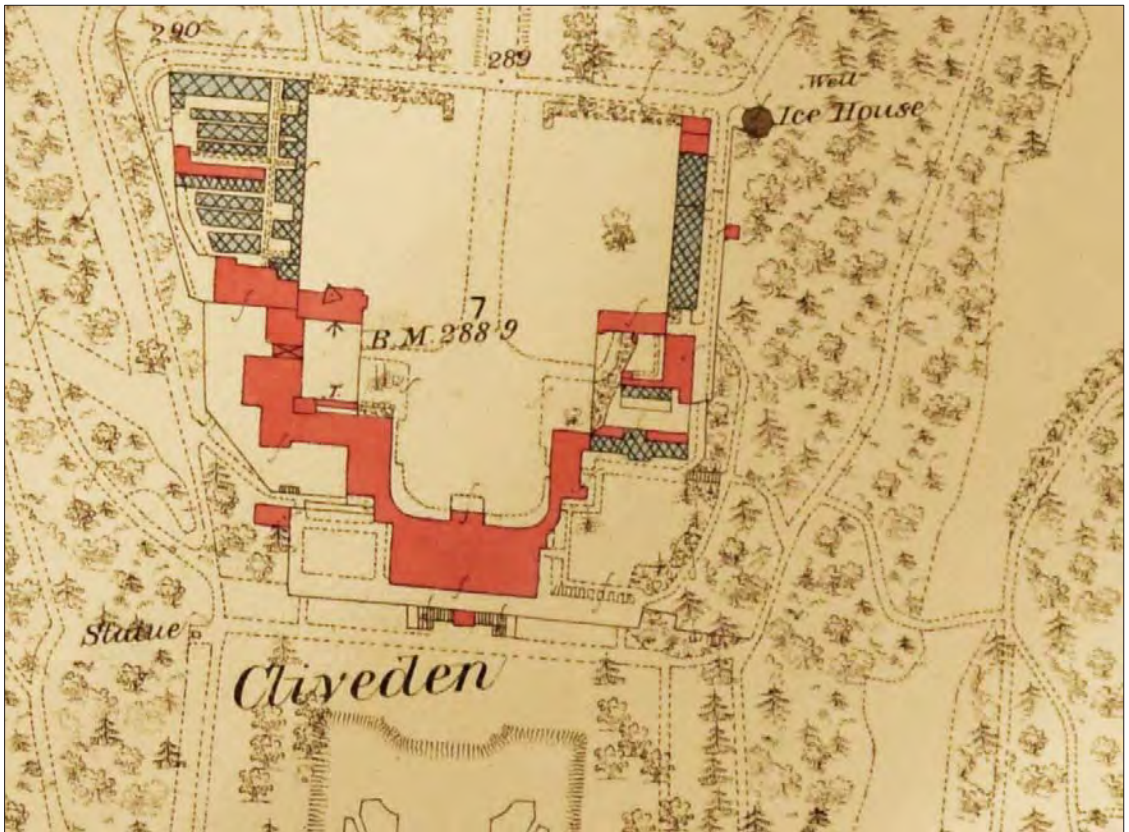


Figure 19: First edition Ordnance Survey map. 1876



Figure 20: Image from Gardener's Chronicle, 1877



Figure 23: 1912 Ordnance Survey map



Figure 24: 1925 Ordnance Survey map

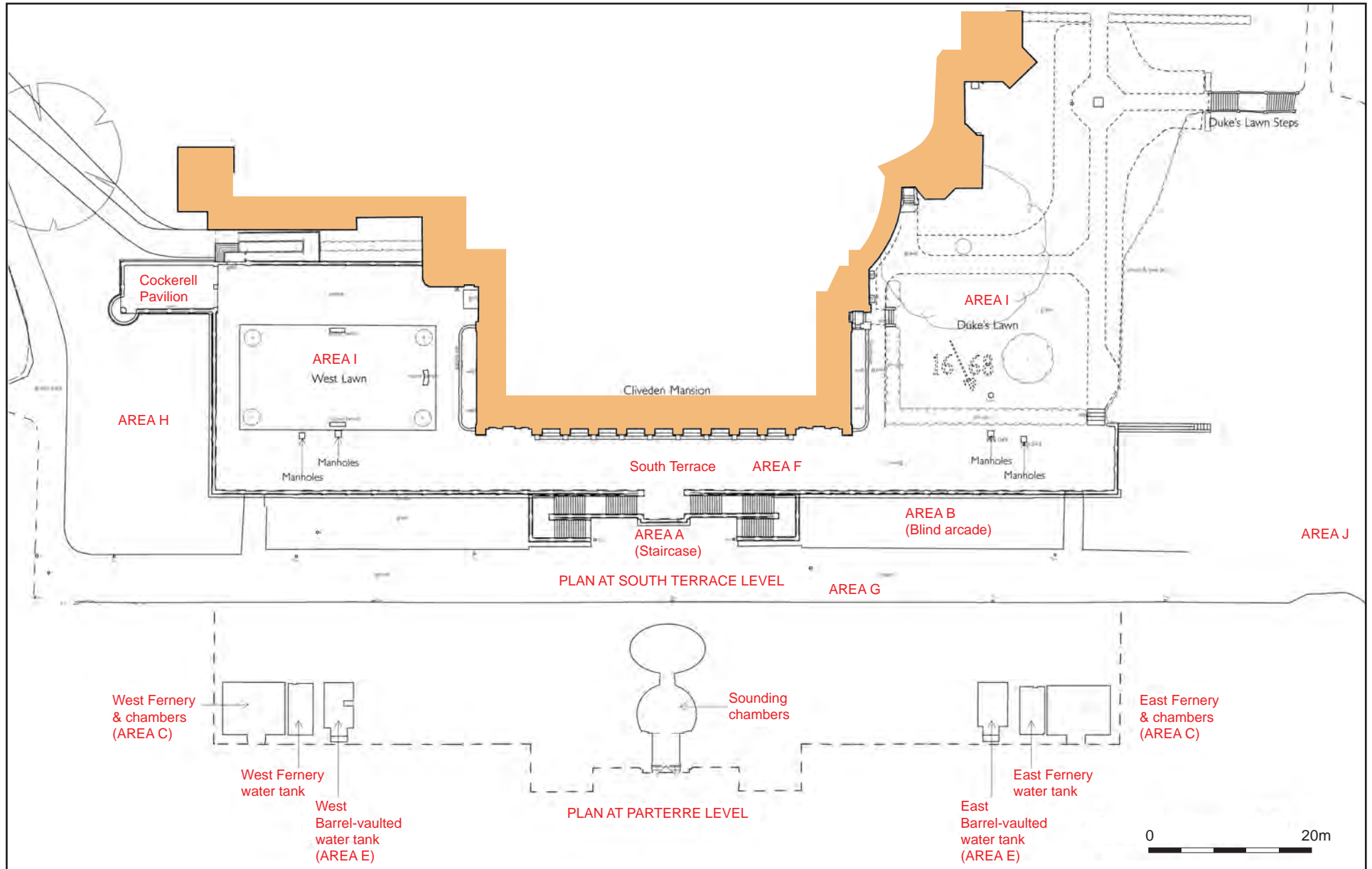
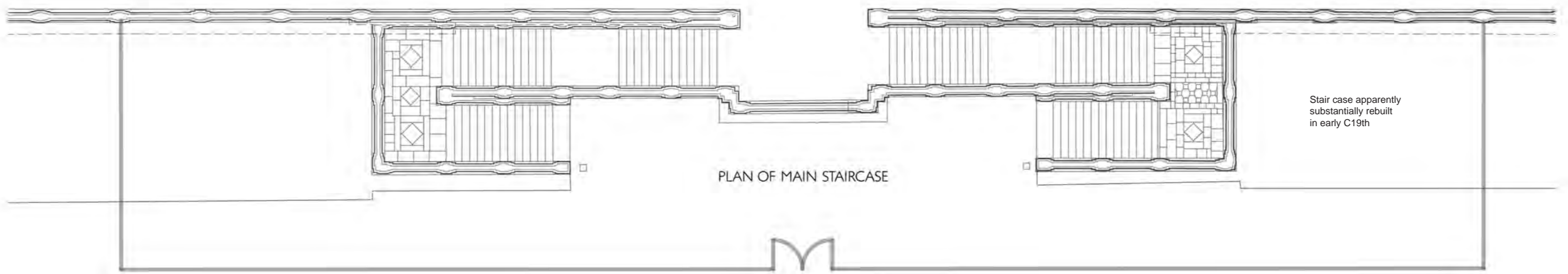


Figure 25: Overall plan of terrace



- c.1760s-70s - Blind-arch front added to terrace
- c.1850 - Portico added by Barry
- Mid 19th century rustication
- Render of various phases (later C19th and 20th)
- Probably C19th brickwork. Rebuild or raising the height of the terrace

Outline of former pilasters SOUTH ELEVATION OF MAIN STAIRCASE Outline of former pilasters

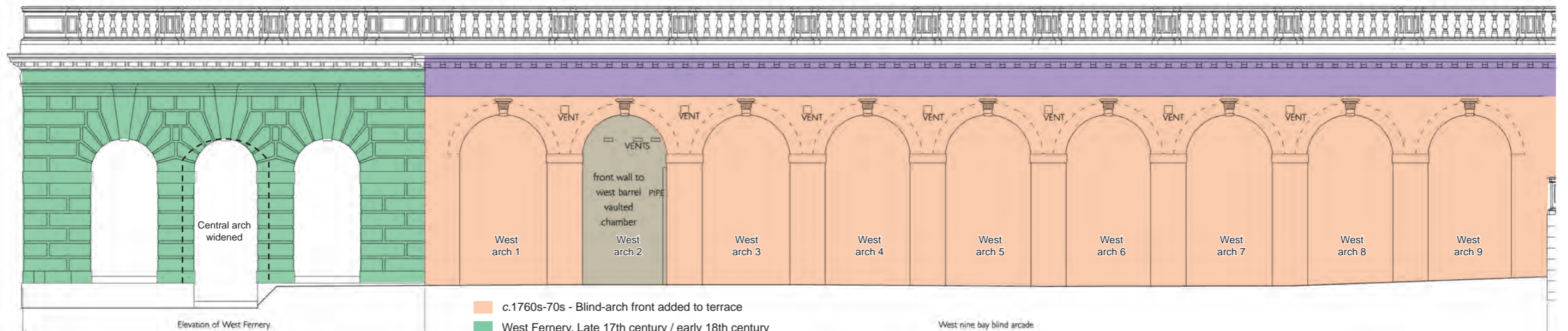


PLAN OF MAIN STAIRCASE

Stair case apparently substantially rebuilt in early C19th

0 5m

Figure 26a: Staircase and central part of terrace



Elevation of West Fernery

- c.1760s-70s - Blind-arch front added to terrace
- West Fernery. Late 17th century / early 18th century
- 19th century infill to brick arch
- Probably C19th brickwork. Rebuild or raising the height of the terrace

West nine bay blind arcade

0 5m

Figure 26b: West half of terrace

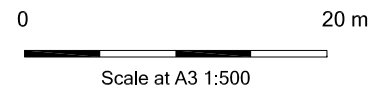
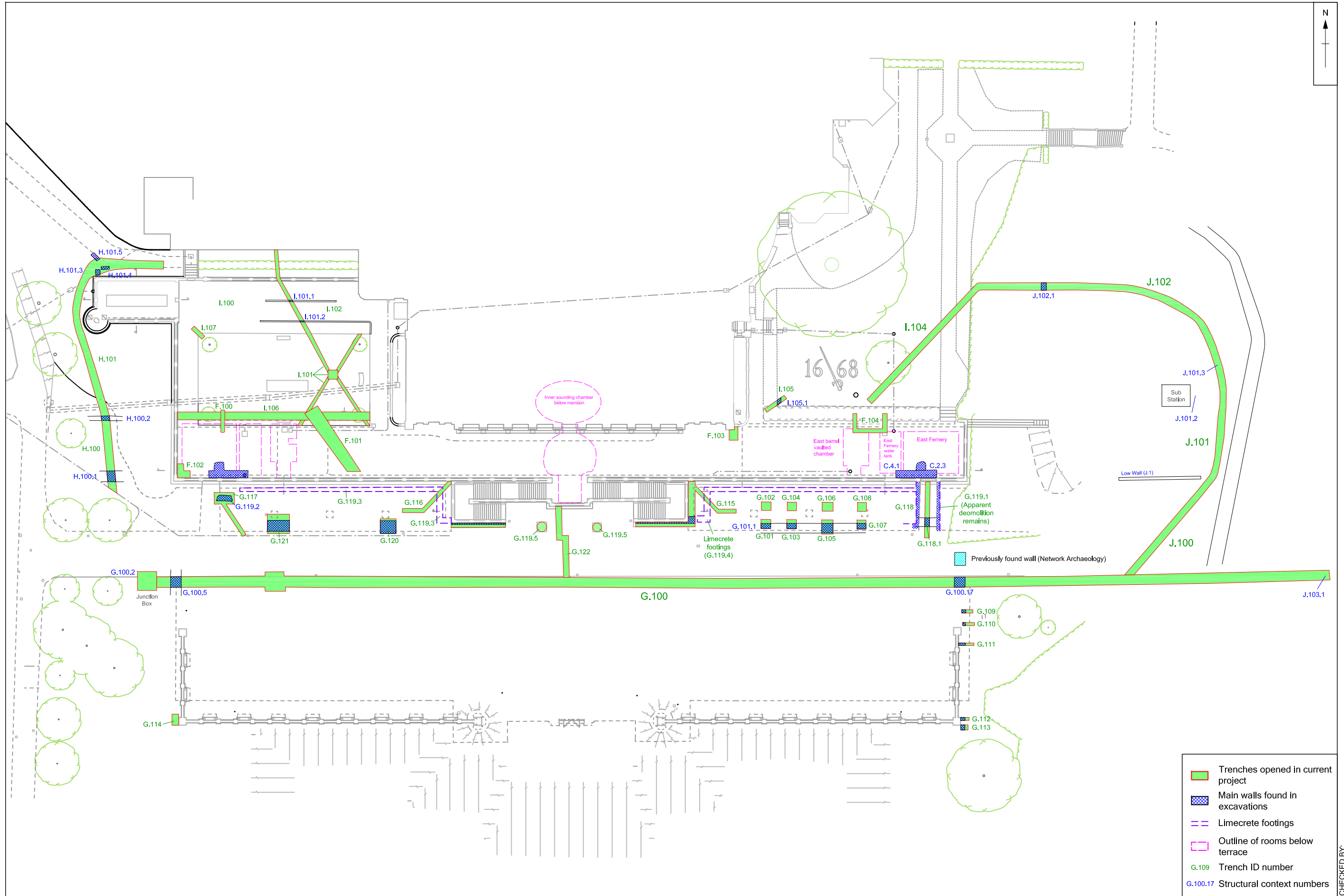


Figure 27: Overall plan showing trenches opened

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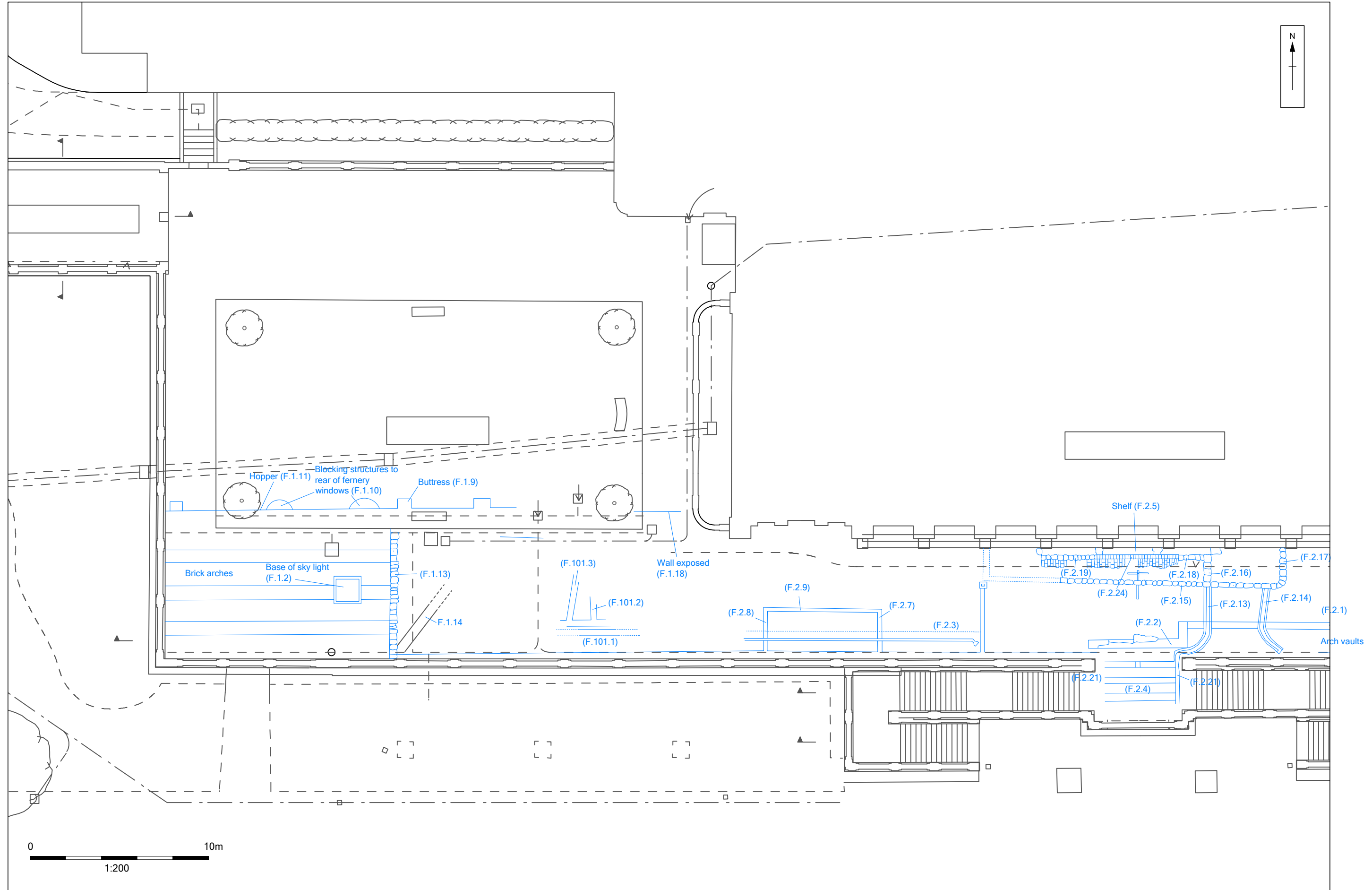


Figure 28a: Overall plan showing features found on top of terrace

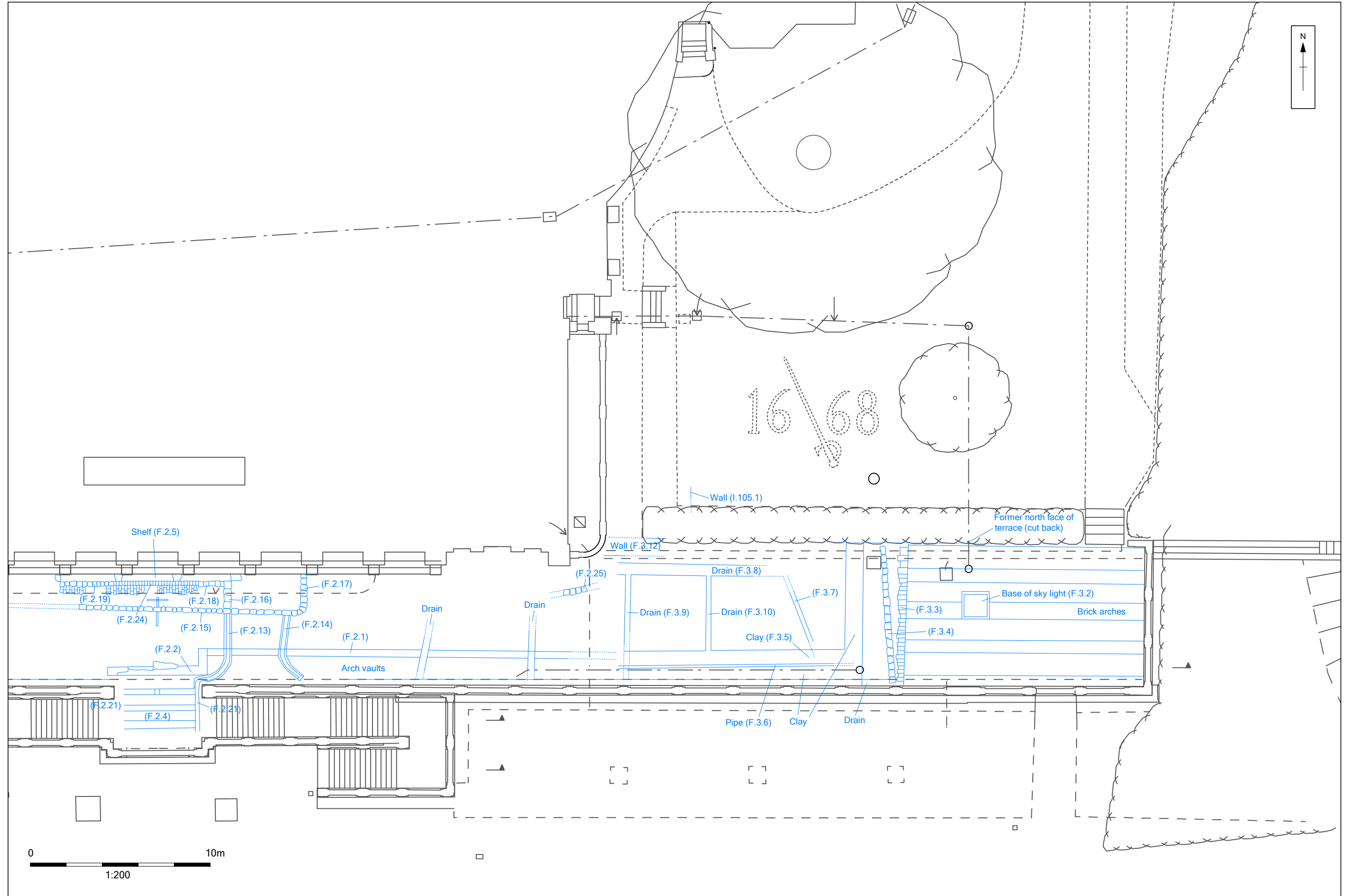


Figure 28b: Overall plan showing features found on top of terrace



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