

THE SOUTH TERRACE, CLIVEDEN: ARCHAEOLOGICAL INVESTIGATIONS, 2013–2017

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Cliveden House near Maidenhead is a Grade I listed mansion which has been home to members of the royal family, the aristocracy and some of the wealthiest families in the world, as well as having been associated with notorious scandals and prominent national events. The 130m long 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 build 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. Between 2013 and 2017 the National Trust undertook a major programme of conservation, repair and remedial works on the terrace, as well as in areas immediately surrounding it, and Oxford Archaeology undertook various archaeological investigations during these works.

The current article discusses the main findings of these investigations which have considerably enhanced our understanding of the structure and also shown that it has had a more complex history than previously believed. Among the features revealed have been a series of large buried walls which suggest that the Duke of Buckingham may originally have been planning a much grander scheme of terraces than that which we see today.

INTRODUCTION

The South Terrace (NGR: SU91026 85169) is among Cliveden's most prominent and recognisable features overlooking the great parterre and providing distant views towards the Thames and beyond. The structure has formed a key feature in numerous historical views towards Cliveden from the south, providing a visual plinth for each of the three houses that have adorned the site.

In 2013 the National Trust commenced the first phase on what became a four-year programme of restoration to the terrace with the initial works focusing on the central staircase and the terrace wall immediately behind. Other early phases (2014–5) included work to the terrace pavilion as well as the excavation of a number of exploratory trial pits to understand better the structure and trenches to allow for temporary drainage runs. The main phase of work was undertaken during 2016 and related to comprehensively overhauling the terrace's drainage. This included lifting all the

paving slabs from the terrace and the excavation of the sub-base to allow for new pipes to be laid as well as a series of new drainage runs in the area in front of the terrace and to either side. A number of pits and trenches were also dug within chambers beneath the terrace.

Each of these investigations was accompanied by an intermittent watching brief undertaken by Oxford Archaeology comprising drawn, photographic and descriptive surveys. A full report on the work has been completed and will be deposited with the Buckinghamshire Historic Environment Record. The project has been informed by a range of studies including geophysical surveys, historic paint analysis, historical research (particularly by Wendy Hitchmough) as well as previous archaeological investigations. These included a watching brief by Network Archaeology in 2012 and a minor investigation by the National Trust, also in 2012, which exposed evidence of a former niche behind the front of the terrace.

HISTORICAL BACKGROUND

In c.1666 George Villiers, second Duke of Buckingham, acquired Cliveden Park in Buckinghamshire with the intention of constructing a mansion at this dramatic position overlooking the Thames, for use as a grand hunting lodge (NT 1994). The duke 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. In the same year that he acquired Cliveden, the duke began a scandalous relationship with Anna Maria Brudenell, Countess of Shrewsbury, and it is believed that the new mansion he was planning at Cliveden was specifically intended to be used for entertaining her.

In 1667, following a political scandal, he was briefly imprisoned at the Tower of London, but after being released he quickly regained his previous political appointments and the king's favour. In 1668 he was challenged to a duel by Anna Maria's husband, the Earl of Shrewsbury, resulting in the death of the earl. The duke and the countess openly continued their relationship, but in 1674 a number of scandals led to Buckingham being dismissed from his offices by the king and being ordered by parliament not to cohabit with the countess. The duke partially retired and the countess then remarried and returned to France (Crathorne 1995).

We know that the duke continued construction works at Cliveden because a letter survives that he wrote to the king in 1677, when he was again briefly imprisoned at the Tower, stating that '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' (Hitchmough 1997). This suggests the possibility that Buckingham's works may have seen major changes during construction: possible evidence of this may have been found in the current project.

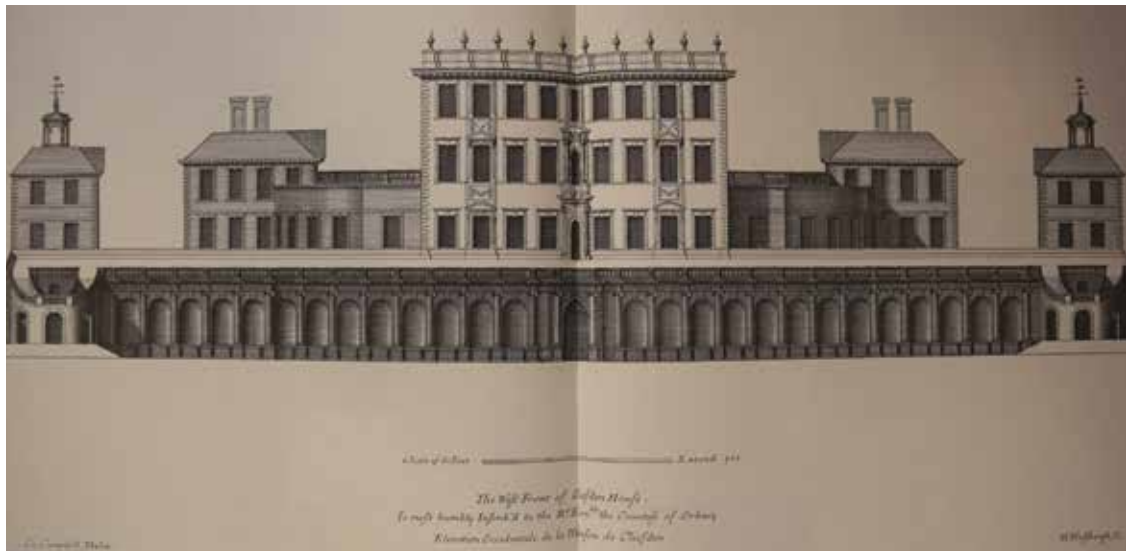
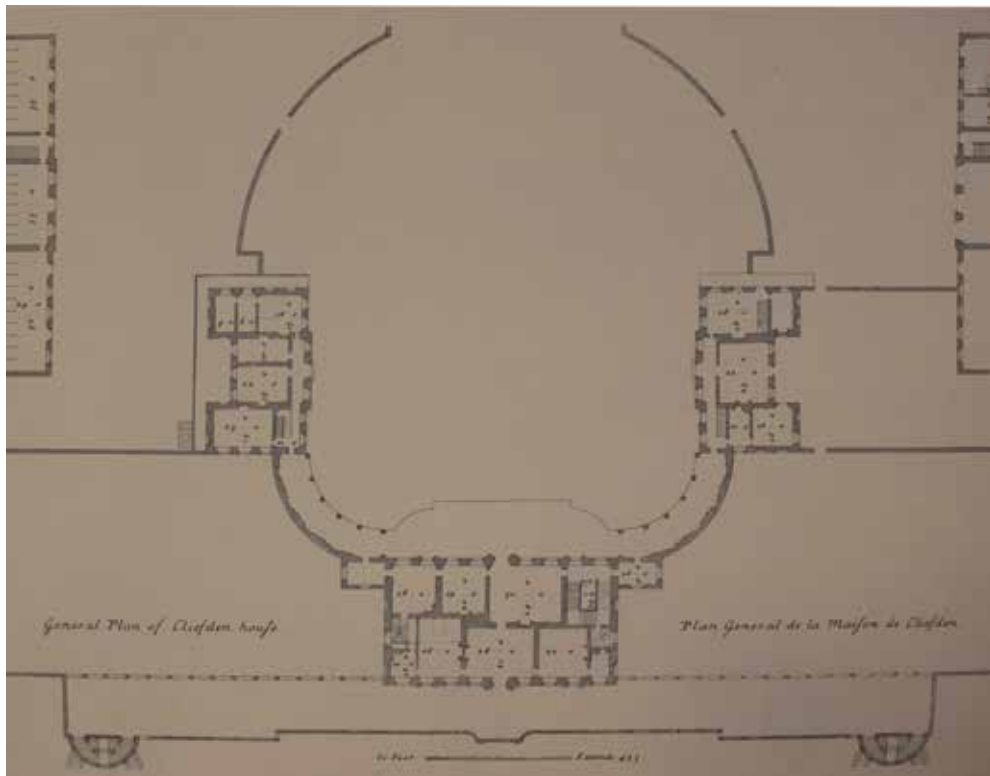
The duke never fully 'completed' his scheme at Cliveden, but it is unclear whether it was the house or other elements of the landscape that were abandoned. Unfortunately, there are no surviving plans or drawings showing Cliveden during this period. However, we do have some minor pieces of evidence which can provide clues. Of partic-

ular interest is a diary entry of John Evelyn, who visited Cliveden in 1679 and referred to the 'extraordinary expense' of the works undertaken at the site (Jackson-Stops 1976). Evelyn also refers to Cliveden being 'somewhat like Frascati'; this is an interesting clue to the character of the site, 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.

It is generally believed that the duke chose William Winde, a well-connected gentleman architect of some importance in the later 17th century, to design the house. Winde had had extensive experience of military engineering and earthwork fortifications: these had relevance to the project at Cliveden which required major landscaping or earth-moving operations in order to create a platform on which to construct the new house overlooking the river. 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 terrace for the house. It is also interesting to note that Winde is believed to have created the terraced gardens at Powis Castle, probably in the 1680s, which have striking similarities to the South Terrace at Cliveden (Jackson-Stops 1976).

After the death of the duke, the estate was acquired in 1696 by George Hamilton, first Earl of Orkney. Between 1705 and 1712 he reduced the height of the previous lofty mansion by a storey and added two flanking wings by Thomas Archer. A series of plans do survive from the years c.1713–c.1723 which provide the strongest evidence for the form of Cliveden at this time, although many are proposal drawings, often focusing on landscaping improvements, and may not have shown what was actually constructed (Hitchmough 1997). The most informative drawings from this period are a plan and elevations included in Colen Campbell's *Vitruvius Britannicus*, published in 1717 and it is striking just how different these show the terrace, compared with its modern form (Figs 1-2). Campbell's drawings show the terrace without a central staircase: instead, a pair of semi-circular stair projections are shown at each end of the terrace contained within end chambers, quite different to the ferneries that survive today in these locations.

The other major difference in Campbell's



FIGURES 1 and 2 Plan and elevation of Cliveden from *Vitruvius Britannicus* by Colen Campbell (published 1717)

drawing is the fact that the terrace is shown with a series of 26 apparently semi-circular niches to its main elevation, flanking a central entrance. The niches shown on the elevation are so different to the existing blind arches 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, revealing curved niches behind the current secondary brick face. This suggests that Campbell's drawings are probably more accurate as a record of the original terrace than might initially be imagined, although there may well be elements which were unexecuted proposals.

The other proposal drawings from this period were largely focused on plans for the parterre to the south of the mansion, but some of them include evidence relating to the form of the terrace at this time (Hitchmough 1997). These support the belief that the existing central staircase was a secondary addition, probably constructed before 1720. They also show the end chambers (ferneries) with broadly their current arrangement. The earliest design, from 1713, includes what appear to be long straight flights of stairs at either end of the terrace, rather than a central staircase, which raises the possibility that this was the Duke of Buckingham's original arrangement (or his original uncompleted plan).

Between 1737 and 1751 Frederick, Prince of Wales (son of George II) leased Cliveden, although it is not believed that substantial alterations were undertaken during this period. Following the death of the prince in 1751, Cliveden appears to have entered a period of 40 years when it was relatively little occupied (Livingstone 2015). During this time it was reported that George III had tried unsuccessfully to buy the estate: in 1780 there was a report that the owner of the house 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.

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 in this period showing the house and terrace from the south. A view by Luke Sullivan dating from 1759 is of particular interest because the arcading at the front

of the terrace appears to pre-date the blind arcade that survives today (Fig 3). This is suggested by the fact that the south face of the eastern fernery is set slightly in front of the adjacent arcade, whereas today the blind arcade is slightly in front of the fernery face. It is also noticeable in close-up 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, distinct from the fernery elevations. There are two later views, probably from the 1770s, one included in *The Modern Universal British Traveller* from 1779 and a similar undated engraving by John Donowell, which show a number of interesting differences from the 1759 view (Fig 4). These two views appear to show the arcade as rendered and being aligned with the end chambers, rather than being recessed behind it as in the 1750s, suggesting that an entirely new blind-arcade front was constructed between 1759 and 1779. The two 1770s views also show the staircase with slightly different detailing to its face to that shown on the 1750s views.

In 1791 the ownership of the estate passed to Mary O'Brien, third Countess of Orkney. In 1795 a devastating fire 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). It seems most likely that this refers to the external staircase at the centre of the terrace, suggesting that it was severely damaged in the fire.

A useful view of the ruins was produced by Hendrik de Cort, looking south-westwards and showing the balustrading of the terrace behind the remains of the house (Fig 5). In relation to the terrace, the most useful aspect of this view is that it shows that at the western end of the terrace there was a brick northern retaining wall and that the ground immediately north was considerably lower than the level of the terrace itself.

The site remained something of a Gothic curiosity for visitors and tourists well into the 19th century, as a romantic representation of ruined grandeur. 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

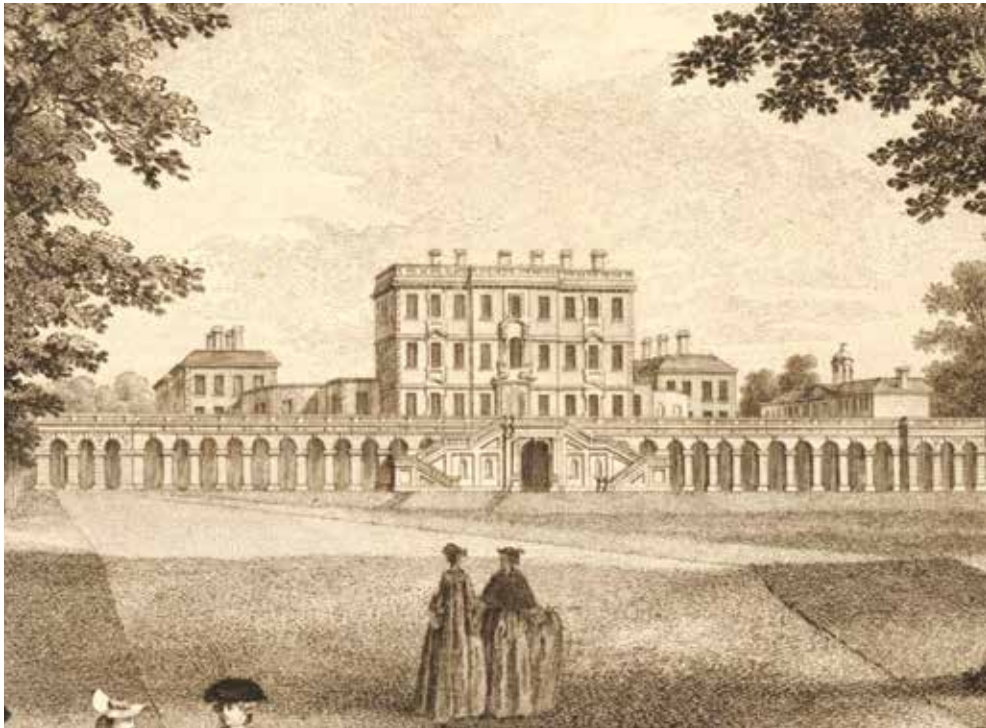


FIGURE 3 A View of Cliveden in Buckinghamshire by Luke Sullivan, 1759. ©British Museum

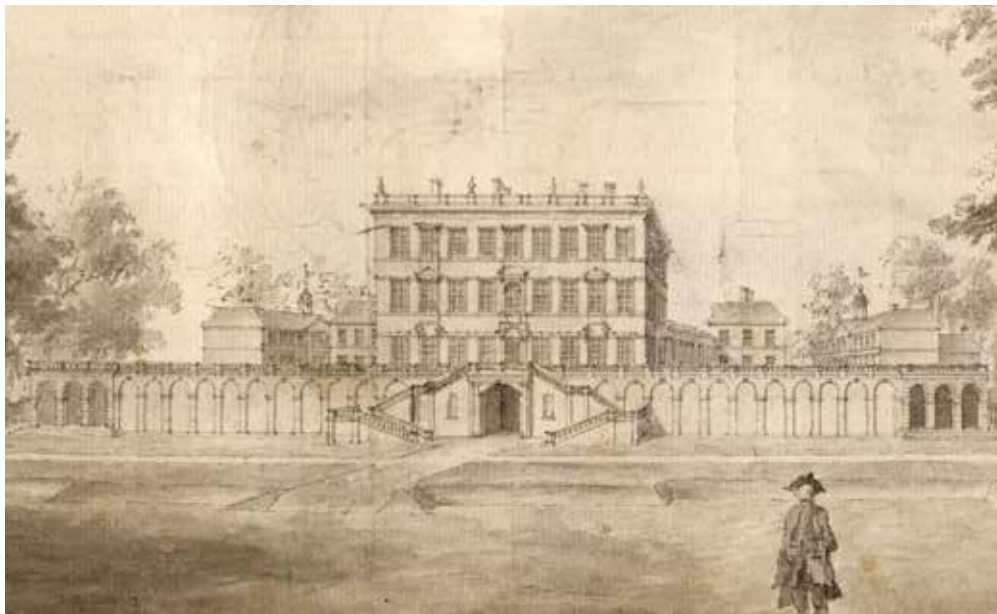


FIGURE 4 Cliveden House by John Donowell (c.1770s) ©British Museum



FIGURE 5 The ruins of Cliveden after the 1795 Fire by Hendrik de Cort (Collection Lord Astor)

original magnificence)’ (Hitchmough 1997). This would suggest that the terrace underwent a major phase of repairs or building works in the early 19th century (although it could be the somewhat exaggerated claims of a sales brochure).

The house failed to sell in 1818 but was subsequently purchased in 1824 by Sir George Warrender, who commissioned the Scottish architect William Burn to design a new mansion with a relatively restrained and conservative design. There is an interesting historical reference from this period in a 1847 travel book which refers to the terrace being ‘disfigured’ by two projecting skylights at each end of the terrace, illuminating orangeries in the chambers beneath (now the ferneries) (Hitchmough 1997).

In 1849 the estate was purchased by the Duke of Sutherland, one of Victorian Britain’s richest men. In the same year the house burnt to the ground again; this time the new owner wasted no time in commissioning Sir Charles Barry to produce plans for the rebuilding of the mansion. This is the Itali-

anate house that survives today, constructed from brick clad in Roman cement stucco. Barry’s scheme included the addition of a rusticated portico around the opening to the central sounding chamber.

An article from *The Gardener’s Chronicle* from 1853 confirms that the end chambers remained as orangeries after Barry’s remodelling, with the lanterns projecting through the terrace floor (*The Gardener’s Chronicle* 1853). A view of Cliveden from *The Illustrated Times* dated 1866 shows the wall behind the staircase clad in rusticated render and the blind arcade heavily overgrown: in various contemporary accounts it is clear that ivy or other creepers were deliberately planted to cover the face of the terrace.

In 1868 Harriet, Duchess of Sutherland died and the estate was sold to Hugh Grosvenor, first Duke of Westminster. The terrace pavilion (or Cockerell pavilion) was added in the 1860s at the north-western corner of the structure: 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 1876 Ordnance Survey map shows the west end of the terrace extending north up to the new terrace pavilion as well as the rectangular lawn in this raised area (the west lawn) which survives today.

In 1893 Cliveden was sold to William Waldorf Astor, a wealthy American who had moved to Britain in 1891. Shortly after this, it is likely that the lanterns over the end chambers were removed and the orangeries converted to ferneries, requiring less light. At the same time, ornamental iron gates were added to both the end chambers and the central sounding chamber. In 1942, Astor donated the estate to the National Trust and since the 1980s the house has been leased from the Trust as a luxury hotel.

OVERALL DESCRIPTION

The South Terrace forms a c.130m-long ‘shelf’ on the rear (south) side of the mansion at Cliveden, extending east to west beyond each side of the house. The ground level immediately to the south is c.6m below the terrace surface and a double-dog-leg staircase at the centre of the terrace

provides access between the two levels.

The southern face of the terrace, facing the parterre, 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, abutted by the staircase. Beyond each end of the blind arcade are a further three open arches which form the front of two chambers known as the east and west ferneries. Adjacent to the two ferneries (*i.e.* behind the outermost parts of the blind arcade) there are further vaulted spaces known as the east and west barrel-vaulted chambers. At the 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.

To the north of the terrace, either side of the mansion, there are two lawns (duke’s lawn and west lawn) and to the east the ground slopes down sharply towards the Rushy Valley. To the north-west of the west lawn is a 19th-century pavilion, sometimes known as the Cockerell pavilion: although some recording was undertaken on this structure this has not been included in the current article.



FIGURE 6 The South Terrace and mansion at Cliveden

CENTRAL STAIRCASE

Introduction

At the centre of the terrace is a fine double staircase which today forms a key visual focus in views of Cliveden from the south, although documentary and physical evidence shows that this is a secondary addition, being constructed in the first quarter of the 18th century. The earliest historical plans, particularly *Vitruvius Britannicus* (published 1717) and a plan by Claude Desgot from 1713 (Hitchmough 1997), show the terrace with a staircase at either end rather than one at the centre, although the form of these stairs differs on each plan. There are several slightly later plans (c.1713–23) showing a staircase with a similar form to that which survives today.

Extensive conservation and reconstruction work has been undertaken on the structure in the current project, including the gradual peeling back of layers to expose the structural core of the staircase. This has shown that the staircase has undergone a very complex evolution.

Summary description and results of current investigation

The staircase comprises a double flight of steps, descending to either side of a landing at the height of the terrace, with dog-leg returns to the lower level. The staircase has stone treads, rendered brick walls with niches and a stone balustrade. The staircase surrounds an arched passage through to the sounding chambers: towards the inner end of this passage there are straight joints to either side wall, indicating that the staircase and main terrace wall belong to different phases of construction. The arched entrance passage passes through a rusticated stone portico to the sounding chamber: this portico is known to have been constructed as part of Sir Charles Barry's works in c.1850.

The rendering which covered the main faces of the staircase showed several distinct phases, including some areas of probable Roman cement which may have survived from the early or mid-19th century and other areas of 20th-century cement render repair. The removal of this render exposed a previous decorative scheme comprising pilasters of fine, rubbed red brickwork with very thin white joints and slightly recessed panels of standard brickwork with penny-roll pointing. It is clear that the fine-jointed brickwork would orig-

inally 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. The soft brickwork of the pilasters was found to have been substantially damaged by the removal of the hard render which covered them and their poor condition was exacerbated by the fact that the pilasters were not keyed into the main staircase structure. The nature of their construction suggested that they had been added onto an existing staircase carcass in the form of a cladding (possibly even a cladding that was intended from the outset to be temporary) and their very fragile condition meant that they had to be entirely taken down and rebuilt in the recent work. 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. Further discussion on the date of this decorative scheme is included below.

The removal of render from the four semi-circular niches showed that the bricks which formed these features were relatively rough and almost certainly it was never intended to be exposed. One of the bricks of the easternmost niche had the date 1739 inscribed and this brickwork appeared to be in-situ rather than forming an isolated reused brick with a date from a different building.

The general quality of the brickwork behind the removed facing brick was very poor and was clearly never intended to be visible. This 'core wall' was dismantled to allow its reconstruction and it was found that the part of this wall that formed the eastern lower flight incorporated a large number of moulded stone blocks and architectural fragments (over 100), reused as rough fill. Presumably this material was debris resulting from the 1795 fire at Cliveden, although it is possible that it derived from the original front of the terrace prior to its reconstruction around the 1760–70s. This material included fragments of column, frieze, moulded cornices, several fragments of a capital and several pieces of a figure or statue with drapery. It was noticeable that some of the infill stones had a pink colour, possibly the result of fire/heat damage. The corresponding walls on the western side of the stairs did not contain similar moulded stones, suggesting that the two halves of the structure were constructed at different dates.

The removal of the poor quality 'core walls' revealed a pair of earlier hidden brick 'carcasses'

each of which encased a brick vault and supported the east and west lower landings. The two carcasses differed in detail. The eastern vault was open at the southern end whereas the western vault was closed: also, the vault of the eastern landing was immediately beneath the paving slabs on the western side, but on the eastern side there was a layer of clay on top of the vault to raise the paving slabs to the correct level. The core structure of each of the lower flights comprised three brick piers supporting the stone treads, although the exact detailing was again slightly different on each side. It was also interesting to note that both carcasses were structurally separate from the brickwork which covered them and it may be that they were constructed by separate contractors, with the vaults being formed first and the cladding added shortly after.

Trenches were dug against the southern wall of each lower flight, revealing that each one was set on deep ‘foundations’ of at least 10 courses of distinct brickwork, different to that which formed the above-ground staircase. The depth of the foundations appeared far larger than would be necessary for the staircase and it was also noticeable that the top of the foundation brickwork had been levelled with a number of tiles to form a flat surface. It seems likely that this buried wall was reused from an earlier structure rather than being built specifically for the staircase: from the character of the bricks it can be assumed that it formed part of the Duke of Buckingham’s phase of construction in the 1670s. Although they do not perfectly align it may well be that this wall relates to the long, major east-to-west wall which was exposed to both east and west of this in several pits (discussed further elsewhere).

Discussion of phasing

The phasing of the central staircase is complicated and not perfectly understood. We know that the staircase was a secondary addition, probably dating from c.1720: views from the 1750s suggest that its form was similar to that which it has today (see Fig 3). However, dismantling of the staircase in the current project has revealed that large parts of it have undergone extensive repairs or rebuilding: this is supported by historical references. The large number of moulded stones incorporated into its eastern side almost certainly shows that this part of the structure was reconstructed, probably after

the 1795 fire but maybe after the c.1760s reconstruction of the terrace front. The fine-jointed brickwork of the pilasters and wider decorative scheme must also be secondary, not just because they encase the moulded stones in the eastern half but also because they would never have been constructed in such a fragile way, not bonded to the wall behind, if they were primary. Immediately behind the pristine brickwork forming the pilasters there was extensive blackening, possibly from an ashy wash from the water used to put out the fire, suggesting that the decorative scheme had been added after a fire. It is also worth noting the quote from Mrs Powys, who visited after the 1795 fire and described ‘the flight of stone steps all fallen to pieces’ (Livingstone 2015) apparently referring to the central staircase and showing that the structure was severely damaged in the fire.

The decorative scheme with pilasters had similarities to that shown on views from the 1750s, as well as a view from the early 19th century, but was different to views from the 1770s which suggest that the faces of the staircase were rendered.

It is known that although Cliveden remained a ruin after the 1795 fire until the 1820s, there were several attempts to sell it, and it is possible 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. It also suggests the possibility that the works were returning the staircase to the form that it historically took (shown in the 1750s views), before the alterations which can be seen in the 1770s views.

SOUNDING CHAMBERS

Introduction

Beneath the centre of the South Terrace is a pair of brick-vaulted chambers accessed through an arched passage beneath the central staircase: historically, it is recorded that the inner chamber was used for musical performances. The chambers are believed to be primary elements of the 17th-century terrace, although there is little documentary evidence relating to them and the outer vault clearly dates from when the staircase was added. The internal

plaster has been entirely removed and replaced in the current work, exposing a number of features of interest.

Outline description and discussion of findings

The northernmost or inner chamber (c.9m x 6m) is entirely beneath the mansion. It has a fine, elliptical dome with an inserted doorway to the west side which leads to a set of secondary stairs up to the mansion. Among the features revealed here by the removal of plaster was a full-height, blocked primary archway at the centre of the east side of the chamber. A small number of bricks were removed from the blocking and it could be seen that the jamb of the opening extended at least one metre, so we can be confident that this was a blocked doorway through to another space, rather than merely a niche at the edge of the chamber. Documentary evidence suggests that this eastern area may well have been the location of a staircase. Hendrik de Cort's c.1798 painting of the ruined mansion shows a square-plan sunken void immediately east of where the inner sounding chamber would have been: the form of this is suggestive of

it having been a stairwell. There are also references to an original internal staircase linking the mansion with the subterranean chamber, so this may also have related to this area (Livingstone 2015).

The other intriguing features revealed by plaster removal in the inner chamber were a pair of large broadly oval-shaped openings in the southern side of the elliptical dome and two brick-lined, funnel-shaped ducts extending up to the terrace (Fig 7). 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. Unfortunately, the upper parts of the funnels have been substantially altered, probably in the 19th century, so the historic form of these parts of the structure is not fully known, but it is believed that the funnels would have reached the terrace at a point immediately in front of the front wall of the mansion. It may be that there was an east to west sunken passage in the terrace, immediately in front of the mansion, to which the upper



FIGURE 7 Light wells or funnels exposed within Sounding Chamber beneath mansion

ends of the funnels connected. There is a feature shown in the floor on Hendrik de Cort's c.1798 view which could be interpreted as such.

The southern sounding chamber, which may have been an ante-room, possibly with displays of sculptures, has a simpler oval form. Unlike the inner chamber, it is directly beneath the terrace itself. The most significant features revealed here by the removal of the plaster were vertical structural cracks towards the centre of the east and west walls following a similar line down towards the ground. Along with other evidence from the terrace these suggest that the structure experienced structural problems such as the front façade starting to come away from the body of the terrace.

The removal of plaster from the arched entrance into the chambers exposed structural joints between the central chamber and the entrance passage, supporting other evidence showing that the staircase (above the passage) was a secondary addition to the earlier terrace.

FERNERIES AND FERNERY WATER TANKS

Introduction

At either end of the terrace there is an open brick chamber; although their interiors were much altered in the 19th century, their facades are thought to be the oldest visible parts of the overall terrace structure, probably having been added in the early 18th century (c.1705–6) to the designs of Thomas Archer. The chambers were converted to orangeries in the 1840s and then again in the 1890s to form ferneries with large water tanks inserted into the inner parts of each chamber. The current work has included various repairs in these chambers as well as excavations in the floor relating to drainage.

Outline description and results of current investigation

The southern elevations of the two ferneries are constructed from rusticated brickwork and comprise three archways, the central of which has been widened, probably in c.1895, shortly after the Astor family acquired Cliveden, when the chambers were converted to form ferneries. These rusticated walls have a finer design and level of detailing than the terrace's main blind arcade (which was itself a mid-18th-century alteration) and although

they are not thought to be original, they do provide an indication of the possible early appearance or character of the overall terrace.

The internal form of each chamber largely dates from the two main phases of alterations in the 1840s and c.1895. The work in the 1840s to convert the chambers to orangeries saw the reconstruction of the ceiling with the five north-south brick barrel vaults which survive today. Each vault is supported by the lower flanges of a series of iron I-joists. These are then supported by a mid-spaced cast-iron column as well as by slightly projecting piers and stone corbels in the north wall. An interesting feature noted in the current project has been a distinct patch of re-formed brickwork in the vaulting above each chamber. These must relate to a pair of glazed louvres which are known to have been installed in the 1840s, projecting above the terrace surface, to illuminate the orangery chambers beneath. These skylights were removed and the openings blocked in c.1895. When the orangeries were originally created, the chambers would also have been illuminated by high windows in the north wall, before the external ground level was raised immediately north of the terrace in the second half of the 19th century, and there survive two deep recesses in the north wall of each chamber from these former windows.

The current floor level in each chamber is roughly the same as that of the external ground, and the columns extend down to this level. This floor level probably dates from the 1840s alterations, as there are several 18th-century views showing that prior to this the floor inside was slightly raised, approximately to the height of the sill of the two window arches in the south wall. At this time the chamber was accessed by simple sets of steps immediately to the south of the chamber: these are still shown on a parish map of 1838, suggesting that the conversion to orangeries post-dated this (Hitchmough 1997).

The work in the 1840s to convert the chambers to orangeries saw the relining of all the internal walls with fine brickwork and tuck pointing, traces of which survive today. These would have formed elegant garden rooms with the floors covered by stone flags and glazed sashes in the arched openings in the south wall. Several small patches of brick were removed from the 1840s internal lining to reveal the previous 17th or early 18th-century plastered walls behind, with traces of plaster

surviving. There is a void or cavity between the two brick faces and they are not bonded together. It may be that this cavity was heated, as was common in buildings such as this.

The interior of each chamber has been subdivided by the insertion of an internal north-south brick wall to allow the formation of the two brick-lined water tank chambers, also dating from the c.1895 phase of work, within the innermost third of each chamber.

Perhaps the most intriguing features revealed in the current phase of work have been in trenches dug in the floor of each fernery. These include 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 eastern 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 (Fig 8). Whatever form these 'niches' in the area of the ferneries took they were clearly replaced by the current fernery structures, although it is uncertain exactly when that occurred. It may have been in the first quarter of the 18th century, when the central staircase replaced what are believed to have been end staircases, but there is also a possibility that the structure was replaced during the initial construction phase in the 1670s. As referred to above, there is a reference from 1677 to the duke threatening to pull down a part of his new construction due to 'a little mistake in my builders' (Hitchmough 1997). It is also relevant to note here the drawings in *Vitruvius Britannicus* (1717) which show either end of the terrace comprising semi-circular stair projections, quite different to the ferneries that survive today. It is uncertain whether these were ever constructed, or how this curved niche could have related to it, but they provide interesting evidence for early alterations and changes of design in this area.



FIGURE 8 Trace of former curved niche found beneath front wall of eastern fernery

BARREL-VAULTED CHAMBERS

Introduction

Towards either end of the terrace, immediately inside from the two water tanks within the ferneries, there are a pair of barrel-vaulted chambers (one to each side of the terrace) into which further water tanks were inserted by Lord Astor in the c.1890s. After the 1890s, alterations the tanks would have collected rainwater from the house and the terrace: the water could then have been used for a number of functions. The original use of these chambers is uncertain, but it has been speculated that in the mid-18th century they were converted to aviaries. There is an entry in an account book from 1747 for a carpenter to enclose ‘two great arches for birds’ and it is interesting to note that the view from c.1779 (included in ‘The Modern Universal Traveller’) shows these two chambers with boarded gates to the front arches. Various minor repairs have been undertaken in these areas in the current project.

Outline description and results of current investigation

The two barrel-vaulted water tanks are each orientated north-south with a relatively wide, single-vault main chamber, c.3.6m wide by c.5.3m long (N-S) beneath the body of the terrace and behind the blind arcading to the front. The walls within each chamber are covered in late Victorian cement-render tanking and there are numerous pipes relating to the water system.

At the southern end of each chamber the main vault abuts the northern side of what appears to be a 2m-thick brick wall with a 1.9m-wide arched opening which corresponds with the blind arcade visible externally. A 1m³ trial pit was dug in the floor at the southern end of the west chamber: this showed that the 2m-thick wall was set on a deep foundation formed from distinct (soft red) brickwork. This is believed to have been a long plinth-type foundation constructed as part of the Duke of Buckingham’s 1670s scheme beneath the front of the full terrace (detailed further elsewhere).

The archway through the 2m-thick wall is blocked by a separate brick wall which would have been added in the c.1890s works to form the tank and seal this side of the chamber.

BLIND ARCADE TO FRONT OF TERRACE

Introduction

The face of the main wings of the terrace comprise a blind arcade with nine full arches to either side of the staircase, between the stairs and end ferneries, with further arches, now partially concealed by rusticated render, behind the staircase. The current project at the South Terrace has included various repairs to this, particularly to the rendered area immediately behind the staircase.

Outline description and results of current investigation

The main arcade is constructed from relatively simple brickwork (even crude in places) and the naked character of these sections of the wall is somewhat at odds with the more decorative face of the ferneries and the magnificence of the mansion. There is a bracketed cornice beneath the balustrade but this is formed from render applied to projecting bricks. The render between the brackets has scour marks to give the superficial appearance of ashlar. This relative simplicity is a reflection of the fact that the current blind arcade is a secondary re-fronting of the terrace, probably having been added in the 1760s–70s, shown by subtle differences in views of the terrace from the 1750s to those from the 1770s.

The central part of the terrace front, behind the staircase, is clad in a heavily rusticated render which is known from historic views to have been added at some point between 1850 and 1866 (Gill 2018). The removal of this render in the current project has 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. 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 was made in the blocking of one of the arches, exposing the recessed stucco (Roman cement render) face of the blind arch which would have been visible prior to the addition of the rusticated render. Each of the four blocked arches exposed behind the staircase had the truncated remnants of a former projecting keystone which had been cut off to allow the render to be applied over this area. Similarly, the stone impost band was also found to have been cut back between the arches.

The form of the original front of the terrace is one of the most intriguing but least clear aspects of the South Terrace. The elevation in Colen Campbell's *Vitruvius Britannicus* (published 1717) shows a long series of niches forming the front. Although this has sometimes been dismissed as an unexecuted proposal, evidence identified in 2012 by the National Trust suggests that it may well have been broadly accurate (Gill 2018). Two small holes were made in the brickwork of the blind arcading, exposing surviving curved brickwork in the form of a niche. This was recorded by the National Trust shortly prior to the current project. The partly exposed niche would have been 2.9m wide and c.1.3m deep (N-S).

TERRACE SURFACE AND SUB-STRUCTURE

Introduction

The current surface of the terrace is formed from informal stone paving, with east-to-west drainage channels along each edge. This paving has been lifted in the current works and re-laid with new drainage channels established within. The works involved considerable excavation within the substructure of the entire terrace, generally to a depth of c.0.5m, and these works exposed numerous features which have been recorded.

Outline description and results of current investigation

The excavations revealed that the easternmost and westernmost 12m of the terrace were set on east-west brick barrel vaulting which is believed to date from the 1840s when the end chambers (now ferneries) were converted to orangeries. The main features revealed within these areas of vaulting were the brick bases of the former skylights (c.1.4m²) which projected above the terrace surface (Fig 9).

The brick-vaulting at either end of the terrace was set at a shallow depth beneath the paving slabs. In the rest of the terrace substructure there was a greater depth of loose fill: within this, numerous small drainage channels were uncovered in the excavations, mainly brick lined and many with stones laid over the top. The character of the bricks and the use of a hard render lining suggest that these are likely to be secondary insertions from the 18th or 19th century.

As discussed elsewhere, it is known from

documentary sources that either side of the house the ground level immediately to the north of the terrace was significantly lower than that of the terrace. Parts of the former northern retaining wall of the terrace were exposed in several trenches dug in the current project. In some areas this wall had been cut back or truncated, but it was well preserved towards the west end, adjacent to the brick-vaulted substructure. Here it was exposed to a maximum of c.1m below the terrace surface (Fig 10). Various features of interest were noted in the exposed northern face of this wall, including three simple sloped brick buttresses, a pair of semi-circular structures which relate to the fernery windows in this wall, and a conventional rainwater downpipe hopper fixed to the wall 0.85m below the terrace surface. Clearly this hopper must pre-date the raising of the ground level in this area.

A section of the former north wall in the eastern third of the terrace was also exposed. It retained a Roman cement-rendered skin with scouring to give the superficial appearance of ashlar. Charles Barry's work to the mansion in c.1850 incorporated extensive use of Roman cement, so this is believed to date from this period.

Among the most interesting and consistent features revealed by the excavations on the terrace was the top of an east-west sleeper-type wall (0.35m wide and c.0.5m below surface) c.1.7m to the north of the balustrade along the terrace front (Fig 11). This wall is believed to continue along almost the full length of the terrace (although it was not fully exposed), and was associated with a set of contemporary brick vaults immediately to the south, extending towards the main balustrade of the terrace. The tops of the vaults were close to the limit of the excavation so many of these were only slightly exposed and in some areas not at all, but it is reasonable to assume that they continue across the full width of the terrace, other than above the ferneries. The character of the bricks in the sleeper wall and vaults would be consistent with a later 17th century date, so it seems most likely that these features are part of the duke's original construction, possibly protecting a set of niches below as shown on the drawings in *Vitruvius Britannicus*. However, it is also possible that they belonged to a phase of remedial works in the 18th century, such as when the blind arcade front was constructed in the c.1760s or 1770s. The sleeper wall and vaults were covered by a distinct, east-west band of



FIGURE 9 Brick vaulting and square base of former skylight exposed over eastern fernery



FIGURE 10 Section of former north wall of western third of terrace exposed by excavations by West Lawn



FIGURE 11 East-west wall and tops of vaults exposed by southern balustrade of terrace



FIGURE 12 Drains and other features exposed towards centre of terrace

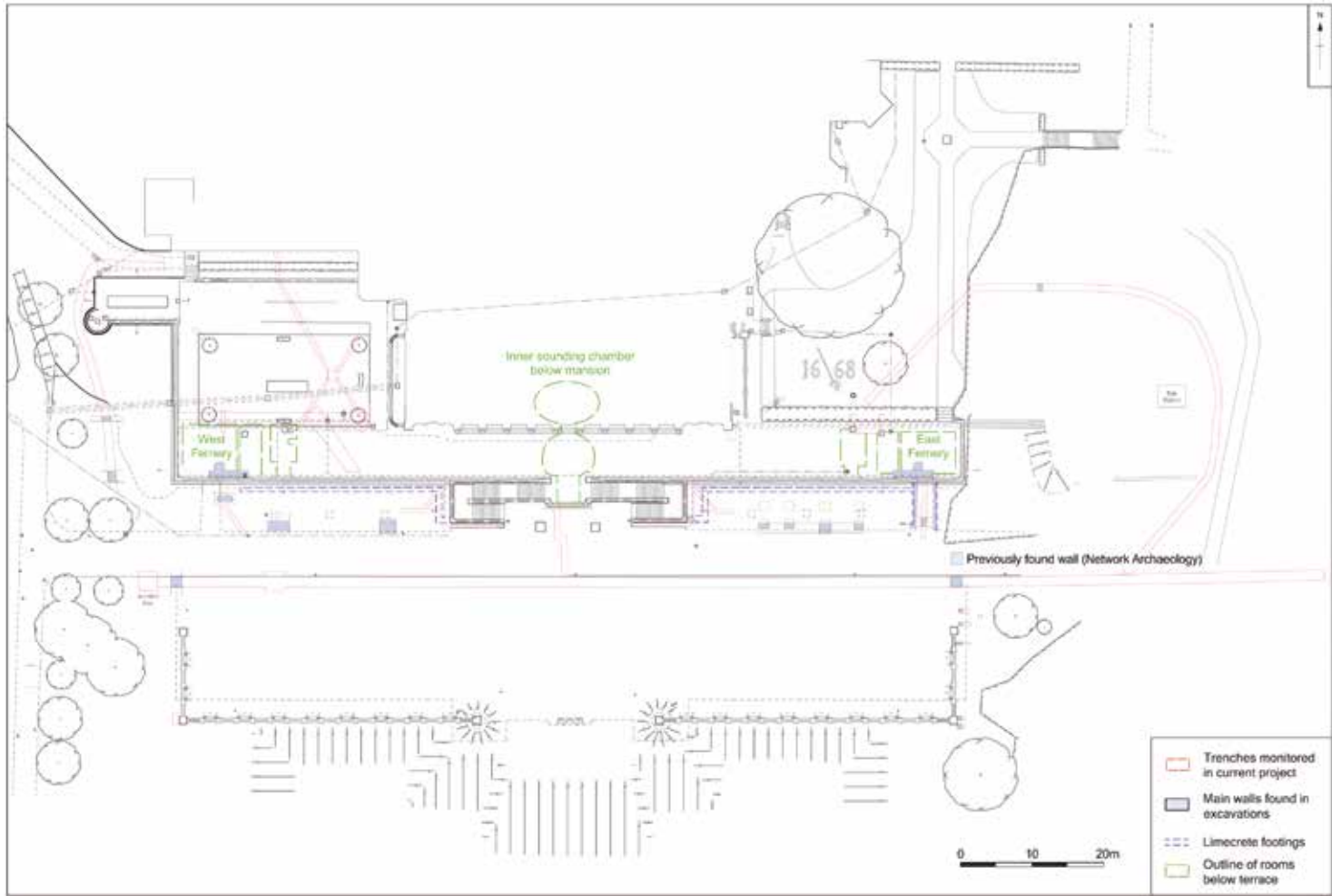


FIGURE 13 Plan showing principal walls found during investigations (2013–2017)

puddling clay, presumably intended to carry water northwards away from the front of the terrace. Towards the centre of the terrace, over the vaults of the sounding chambers, the layer of clay continued across the full width of the terrace.

Also towards the centre of the terrace, the east-west sleeper wall stepped forward by c.0.9m towards the staircase landing. It may be that it marks the point where the 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 appeared to be a structural break between this stepped wall and the landing structure above the staircase.

Another feature of some interest exposed by the works was a brick 'shelf' beneath the front steps to the mansion and in front of its central four bays. This shelf was interpreted as dating from the mid-19th century, as it appeared to relate to Charles Barry's 1850 mansion. It was of interest due to it being very close to where the two light wells/funnels within the sounding chamber would have reached the surface. It may be that this shelf was constructed to seal the tops of these funnels once they had ceased to be used.

AREA IN FRONT OF TERRACE

Introduction

Various excavation works were undertaken in front of the terrace and were monitored archaeologically, exposing various features of interest. The main excavation was an east-west 'trunk' trench for a drainage pipe extending c.13m in front of the terrace, but there have also been numerous other smaller trenches and pits. This area is one of the most intriguing but least understood parts of the 17th-century complex and historical sources only provide fragmentary clues to the duke's vision for this area.

Outline description and results of current investigation

The most significant archaeological features revealed in the current works in this area were a number of sections of very large brick plinths or wall bases which are believed to date from the Duke of Buckingham's 17th-century phase of construction. An east-west wall (c.1.45m wide) was found

in several pits to either side of the staircase, c.6m in front of the terrace arcade, and most probably continues across the full length of the terrace (Fig 14). The bottom of this wall was not reached but in one pit it extended down at least 1.42m below the current ground surface. The current top of the wall was c.0.8m below ground but it could be seen that it would formerly have been higher.

In addition, towards either end of the terrace this wall appears to have returned southwards. Sections of these two return walls, aligning with the outer edges of the ferneries, were found within the main east-to-west drainage trench which extended across the full width of the terrace immediately south of the current path (Fig 15). The sections of these north-to-south walls were also c.1.45m wide and although the bottom of neither wall was reached, that towards the east was exposed to a depth of 2m below ground (with the top c.0.3m below ground). Several further trial pits were also dug towards the south, adjacent to the Borghese Balustrade, and these showed that the large north-south walls extended southwards for at least 27m from the east-to-west wall. Indeed, when the Borghese Balustrade was constructed in the 1890s it appears to have been deliberately built on top of some of these walls.

The landscaping (shallow ground reduction) works in front of the eastern fernery revealed a large, distinct spread of what appeared to be demolition rubble (a thick layer of loose white mortar with brick fragments mixed in) immediately north of the large east-west plinth-type wall and continuing up towards the fernery. This was c.3.8m wide (although the central part had been truncated) and it was broadly centred on the fernery. This suggests that there was a substantial above-ground structure that was taken down in this location, possibly similar to the stair projection shown on the *Vitruvius Britannicus* drawings, or maybe due to a change of design before it was fully completed.

The general ground reduction works in front of the west half of the terrace did not find a similar outline of demolition rubble in front of the western fernery. However, the remains of a brick base were exposed which would have extended c.2.3 m southwards from the fernery. 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.



FIGURE 14 East-west plinth type wall exposed in front of western half of terrace



FIGURE 15 North-south wall exposed in front of eastern fernery

AREA TO WEST OF TERRACE

Introduction

In the area to the west of the terrace a trench was dug extending up the bank 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, a trench was dug to connect this pipe with the main east-to-west pipe run in front of the terrace.

Outline description and results of current investigations

Perhaps the most significant feature exposed in the main trench in this area was the base of a very large wall (1.45m wide), orientated east-west and closely aligned with the front wall of the terrace. The exposed section of wall was c.9m to the west wall of the terrace and it is assumed that the wall continues eastwards to connect with the front of

the fernery. The top of the exposed wall was 0.75m below the current ground surface and it was 0.6m (7 courses) tall. From the size of the wall and character of the bricks it is assumed to survive from the 17th-century phase of construction, although it is interesting to note that the plan in *Vitruvius Britannicus* shows the western edge of the terrace in broadly the same location as today and without any features where the wall has been found. The character of the wall closely matches that of a wall which has been found beneath the front wall of the terrace in several locations (detailed further elsewhere), so this could suggest that the terrace was originally planned to be longer than it is today and the foundations for this were established before a slightly reduced scheme was actually carried out.

Another historic brick wall, this time with a broadly L-shaped plan, was found in the same north-south trench aligned with the rear edge of the

terrace, but c.10m to the west of the fernery. This wall was smaller (0.45m wide) and it now forms a buried retaining wall at the bottom of the bank below the pavilion. The character of the brickwork suggests that this wall also survives from the 17th-century phase of construction and the plan in *Vitruvius Britannicus* shows an east-west wall in this location, forming the south-western corner of the very large enclosed courtyard to the west of the house. It is therefore reasonable to assume that the wall exposed here would have formed part of this boundary.

Several further fragments of former walls were exposed in the area immediately west and north of the pavilion, including one (0.45m wide) which is believed to have formed part of the west wall from the outer courtyard in the original complex, as shown on *Vitruvius Britannicus*.

DUKE'S LAWN AND WEST LAWN

Introduction

To the north of the terrace, on either side of the mansion, there are lawns: that to the west of the house is known as the 'west lawn' while that to the east is known as the 'duke's lawn'. Historical sources suggest that originally there were large enclosed formal courts either side of the mansion, although these are believed to have been at a lower level than the terrace.

Outline description and results of current investigation

Various intrusive works have been undertaken in the areas of the two lawns, including the formation of soakaways and the excavation of trenches feeding into them. Below the topsoil these trenches were found to be entirely comprised of ground make-up (broken bricks, stone fragments, mortar etc) confirming that these areas were raised in height in the 19th century.

Excavations at the south-west corner of the duke's lawn exposed the eastern face of a large wall appearing to run broadly north to south, c.6.3m to the east of the mansion and parallel to it. The wall was at least 0.7m wide, but its full width was obscured. The character of the brickwork suggests that the wall survives from the Duke of Buckingham's 17th-century phase of works, but the plan from *Vitruvius Britannicus* suggests that the original mansion would have been a consid-

erable distance (c.12-13m) to the west. It may that this wall would have been a retaining wall at the western edge of the formal courtyard believed to have been immediately east of the house.

Evidence of the former north wall of the terrace was found either side of the mansion. This is described further in the section on the terrace surface.

AREA TO EAST OF TERRACE AND RUSHY VALLEY

Introduction

Another distinct area within the current investigations has been to the east of the terrace and down into the Rushy Valley. The watching brief here principally included monitoring a drainage trench which fed down the bank from the north-east corner of the duke's lawn and wrapped around the eastern side of the terrace to link with the main east-to-west 'trunk' drainage pipe. This then continued eastwards down into the Rushy Valley.

Outline description and results of current investigation

The trenches in this area revealed numerous minor features including 19th-20th-century drainage sumps, moulded stones reused over culverts and evidence of former surfaces. The most interesting feature relating to the original complex was a partially-surviving brick retaining wall towards the top of the bank to the north-east of the duke's lawn. This 0.7m-wide wall was orientated north to south and c.0.75m of its eastern face was exposed in the trench, with the top c.0.3m below the ground surface. The base of the wall was not reached and it was clear that the wall would formerly have been higher. The location of the wall corresponds closely to a wall shown on the plan in *Vitruvius Britannicus* forming the eastern wall of the great courtyard to the east of the mansion: the character of the brickwork would support the belief that this is the wall found in the current work. Historic maps suggest that this area was remodelled in the mid-19th century to create a less formal arrangement: this wall was presumably pulled down at this time to create a bank.

Another feature recorded in this area was a surviving section of low retaining wall to the east of the terrace which appeared to align with the front of the terrace but was c.30m to the east.

Cartographic evidence suggests that the wall was constructed at some point between 1787 and 1818 (Gill 2018).

CONCLUSION AND DISCUSSION

The South Terrace at Cliveden has long been believed to be the main (or only) surviving element from the great complex constructed here by the Duke of Buckingham in the 1670s. However, the recent conservation and drainage works undertaken on the structure by the National Trust have shown that it has a far more complicated history than previously believed, with numerous phases of alteration, and little if any of the visible fabric appears to date from the 17th-century phase.

Archaeological investigations accompanying the conservation works have greatly enhanced our understanding of the terrace. They suggest that the duke may have originally planned an even grander scheme than that which we see today, with further lower terraces and possibly great ramps to either side.

Perhaps the most intriguing archaeological features revealed have been a series of huge buried sections of wall, some almost 1.5m wide, which must survive from the Duke of Buckingham's original building phase. This phase is known to have involved the movement of vast quantities of earth from the north of where the house now stands to the south, to create the step for the terrace: the current project has exposed 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 western fernery now stands. Approximately six 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. There is a 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-south walls have been found, aligned with the outer ends of the ferneries and apparently extending at least 27m to the south. These 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 the terrace laid out at Powis Castle in the 1680s by William Winde, the architect who is believed to have been responsible for the duke'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 large group of structures. The fact that there is so little evidence of these other structures on views and plans from the early 18th century 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 whether the duke ever completed his works and it may be that there was an extravagant proposal for the terrace which was unfinished. In a letter written by the duke in 1677 while he was incarcerated in the Tower, 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 suggests that the structures concerned must have been very extensive. We do not know whether the duke actually carried this out, but it is possible that these foundations were the remains of structures built in error and then pulled down on the duke's orders.

The possibility that the duke's original vision was for a series of terraces rather than just the one that survives today is also suggested John Evelyn in 1679, during the initial construction works, stating that Cliveden was 'somewhat like Frascati'. This refers to the town in the hills around Rome where there are a number of villas set on hillsides with several terraces.

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 façade originally planned. The present arcade appears to have been constructed in the 1760s–1770s due to structural issues with the duke's original, more elaborate front. A possible indication of the form of the

original façade, comprising a series of niches, is shown in drawings contained in Colen Campbell's *Vitruvius Britannicus*: although in the past there has been considerable doubt as to whether this was ever actually constructed, trial holes in the face of the present arcade have revealed evidence of curved niches behind the front, suggesting that *Vitruvius Britannicus* is much more accurate than previously thought.

In addition, recent excavation works on top of the terrace have shown that although most of the terrace substructure is loose fill, the southern-most c.1.8m (adjacent to the balustrade) comprises a series of brick-arched vaults, the form of which suggests that they were constructed to cover over some form of an open structure, such as a set of niches.

One aspect of the elevation in *Vitruvius Britannicus* which has always been particularly doubtful are the elaborate staircases where the ferneries now stand. No conclusive evidence has been exposed to clarify whether these were ever constructed or not, but a large spread of demolition rubble found immediately in front of the east fernery could suggest a former structure here. Traces have also been found of former, curved niche-type structures on the footings in the east fernery. These clearly pre-date the fernery and confirm that the current fernery is a secondary addition (or possibly an alteration during the construction process).

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 these areas to the north of the terrace were large enclosed yards and isolated fragments of these courtyard walls have also been found.

The removal of plaster from within the sounding chambers at the centre of the terrace has uncovered two funnel-shaped features extending up to the terrace surface. 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 stair-

case at the centre of the terrace was a secondary addition, probably constructed in the 1720s. Evidence exposed in the recent repair works has suggested that this structure has been remodelled on a number of occasions, at least one of which appears to have been after the fire in 1795.

One of the most interesting features of the staircase revealed is a decorative brick scheme beneath the render cladding, which includes 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 which suggests that the fine brick pilasters post-dated the 1795 fire and effectively formed a cladding added onto an existing core structure. Presumably the decorative scheme was designed to replicate the staircase's historic arrangement.

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, shown on the plan from *Vitruvius Britannicus*.

Although the recent project has enhanced our understanding of the South Terrace, we can be confident that there still remain 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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